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5 OVERSIGHT OF NRC: ENSURING EFFICIENT AND PREDICTABLE

6 NUCLEAR SAFETY REGULATION FOR A PROSPEROUS AMERICA

7 WEDNESDAY, JUNE 14, 2023

8 House of Representatives,

9 Subcommittee on Energy, Climate, and Grid Security,

10 Committee on Energy and Commerce,

11 Washington, D.C.

12

13 The subcommittee met, pursuant to call, at 10:00 a.m. in

14 Room 2123, Rayburn House Office Building, Hon. Jeff Duncan

15 [member of the subcommittee], presiding.

16 Present: Representatives Duncan, Burgess, Latta,

17 Guthrie, Griffith, Johnson, Bucshon, Walberg, Palmer, Curtis,

18 Lesko, Pence, Armstrong, Weber, Balderson, Pfluger, Rodgers

19 (ex officio); DeGette, Peters, Fletcher, Matsui, Tonko,

20 Veasey, Kuster, Schrier, Castor, Sarbanes, Cardenas, and

21 Pallone (ex officio).

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22 Also present: Representatives Carter, Dunn, and
23 Fulcher.

24

25

26 Staff Present: Sarah Alexander, Professional Staff
27 Member, Energy and Environment; Alec Armanda, Professional
28 Staff Member; Kristen Ashford, Fellow; Kate Arey, Digital
29 Director; Sean Brebbia, Chief Counsel; Jolie Brochin, Clerk;
30 Deep Buddharaju, Senior Counsel; Sarah Burke, Deputy Staff
31 Director; Michael Cameron, Professional Staff Member;
32 Marjorie Connell, Director of Archives; Jerry Couri, Deputy
33 Chief Counsel; Corey Ensslin, Senior Policy Advisor; Lauren
34 Eriksen, Clerk; Kristin Flukey, Professional Staff Member;
35 Seth Gold, Professional Staff Member; Grace Graham, Chief
36 Counsel; Sydney Greene, Director of Operations; Christen
37 Harsha, Senior Counsel; Rebecca Hagigh, Executive Assistant;
38 Jack Heretik, Press Secretary; Slate Herman, Counsel; Jessica
39 Herron, Clerk; Nate Hodson, Staff Director; Tara Hupman,
40 Chief Counsel; Noah Jackson, Clerk, Sean Kelly, Press
41 Secretary; Peter Kielty, General Counsel; Emily King, Member
42 Services Director; Elise Krekorian, Professional Staff

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43 Member, Energy; Chris Krepich, Press Secretary; Tim Kurth,
44 Chief Counsel; Giulia Leganski, Professional Staff Member;
45 John Lin, Senior Counsel; Molly Lolli, Counsel; Mary Martin,
46 Chief Counsel; Jacob McCurdy, Professional Staff Member,
47 Energy; Brandon Mooney, Deputy Chief Counsel; Kate O'Connor,
48 Chief Counsel; Clare Paoletta, Professional Staff Member;
49 Kaitlyn Peterson, Clerk; Karli Plucker, Director of
50 Operations (shared staff); Gavin Proffitt, Professional Staff
51 Member; Carla Rafael, Senior Staff Assistant; Brannon Rains,
52 Professional Staff Member; Emma Schultheis, Staff Assistant;
53 Olivia Shields, Communications Director; Alan Slobodin, Chief
54 Investigative Counsel; Peter Spencer, Senior Professional
55 Staff Member; Lacey Strahm, Fellow; John Strom, Counsel;
56 Michael Taggart, Policy Director; Teddy Tanzer, Senior
57 Counsel; Joanne Thomas, Counsel; Dray Thorne, Director of
58 Information Technology; Evan Viau, Professional Staff Member;
59 Caitlin Wilson, Counsel; Waverly Gordon, Minority Deputy
60 Staff Director and General Counsel; Tiffany Guarascio,
61 Minority Staff Director; Kris Pittard, Minority Professional
62 Staff Member; Kylea Rogers, Minority Policy Analyst; Andrew
63 Souvall, Minority Director of Communications, Outreach, and

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64 Member Services; Medha Surampudy, Minority Professional Staff
65 Member; Tuley Wright, Minority Staff Director, Energy,
66 Climate, and Grid Security; and Nicole Lu, Minority Intern.
67

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68 *Mr. Duncan. I will call the hearing of the
69 Subcommittee -- oversight of NRC, ensuring efficient and
70 predictable nuclear safety regulation for a prosperous
71 America, to order.

72 Let me thank everyone for being here today, and I
73 welcome all five NRC commissioners. I look forward to your
74 testimony today. It has been over two years since we have
75 heard directly from the Commission, and about nine years
76 since we have had a full panel of all five commissioners
77 before the committee.

78 This is an exciting time in nuclear energy, and it is an
79 important time to make sure our laws and policies are up to
80 date and will enable the full promise of nuclear energy.
81 Today we will hear from you, the commissioners who set the
82 policies for NRC, to discuss and understand how you are
83 preparing the NRC for the future, what is working, what is
84 not working, and what needs to be done.

85 We have a bipartisan goal in this committee of advancing
86 durable nuclear policy that will expand nuclear energy and
87 its many benefits for our nation. Part of this work involves
88 examining the NRC to ensure its licensing, its regulation,

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89 and oversight of safety and security is predictable,
90 efficient, risk-informed, performance-based, and protective
91 of health and safety. A well-functioning NRC that meets
92 these goals helps achieve the broader policy goal established
93 by Congress, which is to enable the expansion of nuclear that
94 will be key to a more prosperous America.

95 In April, Chair Rodgers, Ranking Member Pallone,
96 Subcommittee Ranking Member DeGette, and I wrote a number of
97 stakeholders for recommendations that might be needed to
98 improve the NRC and the Federal nuclear policies in general.
99 As we work on this legislation, your testimony today should
100 help those efforts.

101 We can all agree here on the numerous benefits of
102 maintaining a robust U.S. nuclear industry. The current
103 nuclear fleet consists of 94 reactors with Vogtle unit number
104 3 coming online just last month, and number 4 by the end of
105 the year, first of next year. This was the first nuclear
106 unit built in the United States in more than three decades.
107 This fact is reflective of the fact that our current
108 licensing structure is not set up to encourage large-scale
109 growth or investment of large-scale nuclear projects, i.e.

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110 V.C. Summer in South Carolina as an example.

111 Nuclear energy accounts for nearly 20 percent of our
112 nation's total electricity and more than half of the
113 country's carbon-free electricity. In my home state of South
114 Carolina, nuclear power generates over 90 percent of our
115 carbon-free electricity and over half of our total
116 electricity, around 58 percent. We understand nuclear in
117 South Carolina.

118 The benefits of nuclear energy range from grid
119 reliability, emission reduction, and national security. New
120 and advanced reactor technology provides exciting promise for
121 the future of the industry. In order to achieve this
122 promise, the NRC must be ready. Its work to license nuclear
123 technologies and assure adequate safety of the industry is
124 central to nuclear expansion. NRC should not be an
125 impediment to the advancement of nuclear power and nuclear
126 energy in this country, but it should rather fulfill its
127 mission, and that is to foster nuclear power in the United
128 States of America.

129 The NRC has been talking about preparing for the future
130 for a very long time. More than five years ago, the NRC's

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131 then-executive director of operations initiated a
132 transformation effort. Building on other recent reforms,
133 that effort led to continued work on transformation, all to
134 meet the needs of existing and future fleets. Shortly after
135 that, the end of 2018, Congress passed the Nuclear Energy
136 Innovation and Modernization Act, or NEIMA, which pressed the
137 NRC to develop new regulatory framework to license advanced
138 reactors. I am hopeful we will get a sense today how these
139 agency and congressional efforts have been working.

140 From what we learned in our April meeting with industry
141 experts, it might not be going so well. The NRC has been
142 slow to update its environmental reviews and site and
143 construction permits. It has sent uncertain signals about
144 the policy direction of the Commission, leading to
145 uncertainty in the marketplace. And its implementation of
146 new regulatory framework for advanced reactors has, to date,
147 been a profound disappointment.

148 I am hopeful we can hear some positive news today, Chair
149 Hanson and other commissioners speak positively about
150 preparing the NRC for the future. We want to hear about
151 that, but I would like to start seeing some concrete evidence

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152 that that progress is being made.

153 Modernizing the agency does not mean moving away from
154 your core principles of safety. It means ensuring
155 regulations are updated to reflect the advances and
156 capabilities of the nuclear industry today. The United
157 States has the technological and engineering talent and
158 capabilities to be the global leader in nuclear, and we have
159 got to return to that. We need a regulator that reflects
160 this to propel us into the nuclear future.

161 I am excited about the future of nuclear energy. This
162 committee is excited about the future nuclear energy on both
163 sides of the aisle. We have a window of opportunity here to
164 advance nuclear power in this country. It starts today with
165 this hearing, with the regulators themselves, and we will
166 create policy to help advance nuclear technology and nuclear
167 energy production in this country.

168 [The prepared statement of Mr. Duncan follows:]

169

170 *****COMMITTEE INSERT*****

171

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172 *Mr. Duncan. So I want to thank you all for being here,
173 and I now will recognize the Ranking Member of the
174 Subcommittee DeGette for five minutes.

175 *Ms. DeGette. Thank you so much, Mr. Chairman, and
176 thanks to all of the NRC commissioners for being here today.
177 You are right. It is nice to see five today.

178 As the agency responsible for overseeing our nation's
179 nuclear fleet and radioactive materials, the work that the
180 NRC does is vital not only to our nation's overall energy
181 security, but to the health and safety of the American
182 public. Experts agree that nuclear energy has the potential
183 to play a significant role in our efforts to drive down our
184 nation's greenhouse gas emissions as we take on the climate
185 crisis. But in my opinion, shared by most people here, I
186 think, we can only do that if we continue to prioritize
187 public health and safety.

188 Currently, nuclear energy is responsible for producing
189 20 percent of all the electricity generated in this country,
190 and nearly half of all of the carbon-free electricity the
191 U.S. generates each year. As we work to reduce our emissions
192 from the U.S. energy sector, nuclear energy is often seen as

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193 a key technology that can continue to be used to provide the
194 American people with the power they need to make the clean
195 energy transition. So it goes without saying that the NRC
196 would be at the forefront of that effort.

197 While there are several potential benefits of increasing
198 our use of nuclear technology here in the U.S., we simply
199 can't do so unless we address a number of issues first. In
200 April, as the chairman said, this committee sent a series of
201 letters to some of the nation's largest nuclear stakeholders
202 to solicit their feedback on NRC's licensing process. The
203 overwhelming response we received from these companies was
204 that the licensing process is overly burdensome and needs to
205 be reformed.

206 So if we are going to make nuclear energy a key part of
207 our clean energy transition, we have to streamline the
208 process. But -- and this is a big but -- we have to do so in
209 a way that will continue to ensure the highest level of
210 public health and safety. Streamlining the process without
211 increasing safety is not an option.

212 Now, the NRC has a long record of making safety a
213 priority, and we have to keep it that way. We need to

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214 develop a long-term, comprehensive, and community-driven
215 strategy for dealing with spent nuclear fuel. For far too
216 long, we as a nation have simply ignored this problem. And
217 if we are going to expand this resource, we cannot do it
218 anymore. Expanding nuclear energy without a long-term
219 strategy to deal with the spent fuel, fuel rods that will
220 come as a result, will only leave more communities vulnerable
221 to an unwanted buildup of nuclear waste in their area.

222 So while I believe deeply that these are issues that
223 must be resolved before we begin to expand the use of this
224 technology in the U.S., I also think that solutions are
225 possible. Through meaningful engagement and dialogue we can
226 address each of these issues, and start moving forward in
227 looking at the use of this critical technology. But if we
228 don't, if we fail to address the issue of spent fuel, or if
229 we fail to take the steps needed to ensure that the highest
230 standards of protecting the public's health and safety remain
231 in place, then I frankly don't see a way that nuclear energy
232 will become a significant part of our clean energy future.

233 So let me just close by saying I believe there is a real
234 opportunity to drive down our emissions and accelerate our

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235 clean energy transition through increased nuclear power, but
236 only if it is done the right way, and only if it is done
237 collaboratively.

238 [The prepared statement of Ms. DeGette follows:]

239

240 *****COMMITTEE INSERT*****

241

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242 *Ms. DeGette. So I am looking forward to hearing the
243 testimony and the discussion today, and I yield back, Mr.
244 Chairman.

245 *Mr. Duncan. The gentlelady yields back. It is now my
246 distinct pleasure to recognize the chair of the full
247 Committee on Energy and Commerce, Mrs. McMorris Rodgers, for
248 five minutes for an opening statement.

249 *The Chair. American leadership in nuclear energy and
250 energy technology is critical to our economic security and
251 our national security. It is how we win the future with
252 reliable, affordable, and clean energy to power our way of
253 life, keep the lights on, build stronger communities, and
254 keep our economies going.

255 American leadership has been essential to civilian
256 nuclear energy around the world. We can trace this vision
257 back to the Atomic Energy Act of 1954 that -- when Congress
258 established and said, I quote, "To make the maximum
259 contribution to the general welfare, the development, use,
260 and control of atomic energy shall be directed as to promote
261 world peace, improve general welfare, increase the standard
262 of living, and strengthen competition and private

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263 enterprise.'`

264 With that policy, the United States led the world for
265 over 40 years developing civilian nuclear technologies. We
266 set the standard for safety and security that continues to
267 this day. You can find American know-how in more than 80
268 percent of the nuclear reactors deployed around the world.
269 These reactors trace to innovations by American companies
270 that were spread by Congress's vision for what nuclear can
271 provide. That is the vision of nuclear leadership we are
272 working to restore during this Congress.

273 The world today presents serious challenges to American
274 nuclear leadership. China and Russia seek to dominate
275 emerging nuclear markets to control supply chains for
276 technology and fuels. Here at home, nuclear generating
277 capacity has been nearly flat for three decades.

278 We can reverse this trend, but there is work to do. For
279 example, Congress enacted incentives for a resurgent nuclear
280 industry in 2005, and in 2009 the NRC had received 8
281 applications for 28 new state-of-the-art reactors. To its
282 credit, NRC issued licenses for the construction and
283 operation of 14 new reactors over the following 9 years.

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284 Yet, for a variety of reasons, only two of those projects
285 have been constructed: a plant at Vogtle in Georgia. The
286 remaining licenses were terminated or in indefinite hold by
287 the applicants.

288 And so, today NRC operates as an agency that is
289 overseeing the completion of 2 reactors, from start to
290 finish, over the last 40 years. To restore American nuclear
291 leadership we need an NRC that performs its mission with the
292 urgency reflected in the Atomic Energy Act. NRC must focus
293 on providing reasonable assurance of adequate protection of
294 public safety -- public health and safety. That is its core
295 mission.

296 And I agree with NRC Chairman Hanson that "NRC must do
297 its best not to implement" -- be an impediment, sorry --
298 "NRC must do its best not to be an impediment to innovation
299 and deployment."

300 We need a modern regulator that works in service to the
301 policies established by Congress. There is no time to waste.
302 America has the best operating fleet in the world. The
303 performance and safety of American nuclear plants are
304 unmatched. There are many promising advanced nuclear

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305 technologies coming to the doorstep of NRC for licensing.

306 Our allies in Eastern Europe and elsewhere yearn for
307 American technology and support. We heard this when we were
308 in Portland and the Czech Republic -- Poland, sorry, Poland
309 and the Czech Republic earlier this year. Our allies seek
310 American leadership on safety and performance.

311 We need an NRC that encourages innovation. Key
312 questions for this hearing concern how the Commission plans
313 to modernize and meet the urgency of the moment.

314 Will it update its regulations to account for the best
315 available data and operational experience?

316 Where is the urgency enabling innovations that will
317 improve efficiency of operations, oversight, and safety?

318 Where is the urgency to implement the reforms directed
319 by Congress to establish predictable, clear regulations
320 appropriate to the risk of the technologies it licenses?

321 And is NRC a results-driven agency?

322 I am looking forward to this hearing, looking forward to
323 the discussion, the answer to these questions.

324 [The prepared statement of The Chair follows:]

325

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326 *****COMMITTEE INSERT*****

327

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328 *The Chair. And I yield back.

329 *Mr. Duncan. The gentlelady yields back, and the chair
330 will now recognize the ranking member of the full committee,
331 Mr. Pallone from New Jersey, for five minutes for an opening
332 statement.

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

334 Nuclear power plays an important role in producing
335 carbon-free power for the electric grid. In April this
336 subcommittee held a hearing examining the current and future
337 nuclear energy landscape. I thought it was an informative
338 and bipartisan hearing, and I look forward to building on
339 that progress today as we conduct oversight of the Nuclear
340 Regulatory Commission.

341 Democrats have long been committed to decarbonizing the
342 power sector to combat the worsening climate crisis. Over
343 the past two years congressional Democrats and President
344 Biden took major action on climate by passing both the
345 Bipartisan Infrastructure Law and the Inflation Reduction
346 Act, and these laws included historic climate investments to
347 help us lead the rest of the world in the transition to clean
348 energy, while also creating millions of good-paying, clean-

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349 energy jobs, and lowering energy costs for Americans.

350 In 2022 the power sector accounted for about 31 percent
351 of total U.S. carbon dioxide emissions. If we are going to
352 dramatically reduce power sector emissions while keeping
353 prices low for consumers, we need reliable, carbon-free
354 resources that can sustain output for long periods of time,
355 and nuclear power can meet this test, and that is why we look
356 to bolster nuclear power in the two new laws, both the
357 Bipartisan Infrastructure Law -- we authorized in that the
358 Civil Nuclear Credit Program, a \$6 billion fund at the
359 Department of Energy to support our existing reactor fleet;
360 and then, as part of the Inflation Reduction Act, we created
361 a tax credit for zero-emission nuclear power, and invested
362 \$700 million in a program to support the next generation of
363 nuclear fuel.

364 Now, the NRC has done an admirable job over the years of
365 ensuring nuclear power is safe and secure. The nuclear
366 industry often touts its safety successes over the past
367 decades, but that success is partly due to the efforts of
368 Federal regulators to stay on top of inspections and safety
369 protocols at plants across the country.

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370 I would also like to commend the NRC for creating an
371 environmental justice review team two years ago to evaluate
372 how the agency's policies and activities address
373 environmental justice. The resulting set of recommendations
374 is an important first step on environmental justice, and the
375 report recommends that the NRC enhance its environmental
376 justice outreach activities. It also recommends that the
377 Commission reassess its ban on using funds to assist
378 environmental justice communities in participating in NRC
379 proceedings and other topics.

380 This is also an issue that I discussed with the FERC
381 commissioners when they were before the subcommittee
382 yesterday. It is critical that our Federal agencies and
383 commissions acknowledge and include communities that have
384 disproportionately faced the negative effects of energy
385 generation and climate change.

386 Now, the NRC is also in the process of creating a new
387 regulatory framework for advanced nuclear reactors. This was
388 something that Congress required the Commission to do in 2018
389 as part of the bipartisan Nuclear Energy Innovation and
390 Modernization Act. Earlier this year NRC staff proposed a

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391 draft of this new framework, which is now referred to as part
392 53.

393 In April I joined Chairs Rodgers and Duncan and Ranking
394 Member DeGette in a request for information. We asked
395 nuclear power stakeholders for comments and recommendations
396 on the NRC licensing and regulatory process. And one common
397 theme we heard in these responses is that the draft 53 or
398 part 53 framework is too cumbersome and difficult to use. So
399 I hope the Commission can make targeted revisions to the
400 licensing framework so it can be used to safely and
401 efficiently license advanced reactors in the future.

402 Advanced reactors can be designed to provide enhanced
403 safety features and produce less waste. They can come in
404 different sizes, be constructed faster with lower
405 construction costs, and be sited in more remote areas.

406 Finally, I want to briefly mention the Commission's
407 decommissioning rulemaking that will guide the process for
408 shutting down and decommissioning shuttered nuclear reactors.
409 A proposed version of this rule was published last year, but
410 I remain seriously concerned that that rule provides an
411 insufficient role for local communities to participate in the

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412 decommissioning process, and I hope this will be corrected
413 before the rule is finalized.

414 But it is good to see all five commissioners here today,
415 and I look forward to your testimony.

416 [The prepared statement of Mr. Pallone follows:]

417

418 *****COMMITTEE INSERT*****

419

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420 *Mr. Pallone. And I yield back, Mr. Chairman.

421 *Mr. Duncan. The gentleman yields back, and that now
422 concludes the members' opening statements.

423 The chair would like to remind members that, pursuant to
424 committee rules, all members' opening statements will be made
425 part of the record.

426 So I thank all the witnesses for being here and taking
427 time to testify. Each witness will have the opportunity for
428 a five-minute opening statement, followed by a round of
429 questions from members.

430 There are some lights in front of you. If it goes to
431 yellow, that means start trying to get to the end. If it
432 goes to red, it is time to wrap it up. Just try to stay on
433 time, and that goes for committee members, as well.

434 So let me introduce everyone.

435 First off, we have the Honorable Christopher T. Hanson.
436 He is chairman of the NRC, and we welcome the chairman.

437 We also have Commissioner Jeff Baran.

438 Jeff, thanks for being here.

439 I am going to skip over David for a second. We have the
440 Honorable Annie Caputo.

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441 Thanks for being here, Commissioner.

442 And Commissioner Bradley Crowell, thanks for being here.

443 I skipped over David Wright. He and I have known each
444 other for about 20-plus years, and he is a fellow Clemson
445 graduate -- and Go Tigers.

446 So I look forward to hearing from everyone today and,
447 Chairman Hanson, we are going to jump right into this, and
448 you can start with your opening statement.

449

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450 STATEMENT OF THE HON. CHRISTOPHER T. HANSON, CHAIRMAN, NRC;
451 THE HON. JEFF BARAN, COMMISSIONER, NRC; THE HON. DAVID A.
452 WRIGHT, COMMISSIONER, NRC; THE HON. ANNIE CAPUTO,
453 COMMISSIONER, NRC; AND THE HON. BRADLEY R. CROWELL,
454 COMMISSIONER, NRC

455

456 STATEMENT OF CHRISTOPHER T. HANSON

457

458 *Mr. Hanson. Thank you very much, Mr. Chairman, and
459 thank you to Ranking Member DeGette, and Chair McMorris
460 Rodgers, and Ranking Member Pallone, and other distinguished
461 members of the subcommittee. My colleagues and I appreciate
462 the opportunity to discuss the U.S. Nuclear Regulatory
463 Commission's fiscal year 2024 budget, and to update you on
464 some of the agency's licensing and oversight and rulemaking
465 activities.

466 The NRC is an independent Federal agency established to
467 regulate commercial nuclear power plants, research and test
468 reactors, nuclear fuel cycle facilities, and radioactive
469 materials used in medicine, academia, and industry. The
470 agency also regulates the transportation, storage, and

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471 disposal of radioactive materials and waste, and the export
472 and import of radioactive materials, nuclear reactors, and
473 fuel cycle facilities, and, finally, the export of nuclear
474 facility components.

475 The NRC's fiscal year 2024 budget is right around \$1
476 billion, which is a 6.7 percent increase, or \$63 million,
477 over the NRC's enacted budget for fiscal year 2023. This
478 increase is primarily to support salaries and benefits in
479 accordance with U.S. Office of Management and Budget
480 Guidance.

481 The budget also this year proposes to use 27 million in
482 carryover to offset the nuclear reactor safety budget. The
483 NRC expects to recover 832 million of the fiscal year 2024
484 budget from fees assessed on NRC licensees. This will result
485 in a net appropriation of 156 million.

486 The NRC has realized several important accomplishments
487 over the past year. To highlight a few, the NRC authorized
488 the operation of Vogtle Unit 3 in Georgia. As Chairman
489 Duncan noted, Summer nuclear company projects Vogtle Unit 4
490 will be operational by late 2023 or early 2024.

491 Further, the NRC completed NuScale's design

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492 certification for its small modular reactor, and we also
493 renewed the license of Westinghouse's fuel fabrication
494 facility in Columbia, South Carolina for another 40 years.

495 Our progress in the advanced reactor space is
496 accelerating as the agency looks to the future while
497 addressing present needs. Indeed, we are currently
498 interacting with 15 companies. We have already dispositioned
499 51 technical reports and white papers while we currently have
500 33 under review. Vendors, utilities, and project sponsors
501 tell us to expect as many as 20 applications in the 2025 to
502 2027 timeframe.

503 The staff reports -- I have it here in my notes that the
504 staff reports that it is ahead of its 21-month review
505 schedule for the Kairos Hermes test reactor. In fact, Mr.
506 Chairman and Madam Ranking Member, I am pleased to announce
507 that we are going to issue the safety evaluation report for
508 the Kairos Hermes test reactor later today, three months
509 ahead of schedule and on budget for that construction permit.

510 We are also making progress on our 18-month review
511 schedule for the Abilene Christian construction permit for
512 their advanced test reactor at the university there in Texas.

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513 And we have the TRISO-X application for their fuel
514 fabrication facility in Tennessee for -- to manufacture high-
515 assay, low-enriched uranium fuel in Tennessee there for that
516 facility.

517 Resources will -- in the budget will continue to support
518 staff work on the technology-inclusive reactor licensing
519 framework for advanced reactors -- as a number of you have
520 already mentioned, part 53 -- ahead of the congressionally
521 mandated schedule in -- under NEIMA. It will also assist in
522 the development of alternative physical security requirement
523 for advanced reactors and a rulemaking for increased
524 enrichment to support accident-tolerant fuels and advanced
525 reactor fuel designs.

526 The Commission recently directed the staff to develop a
527 licensing framework for near-term fusion energy systems under
528 a product material framework and a major step forward, I
529 think, in fusion regulation.

530 The fiscal year 2024 budget request is anticipated to
531 encompass the regulation of 94 operating power reactors, 31
532 non-power production or utilization facilities, 23 power
533 reactor sites undergoing decommissioning, and numerous other

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534 facilities and materials that we regulate.

535 In addition, the budget request supports increased
536 international collaboration on SMRs and advanced reactor
537 technical reviews. We have had quite some success through
538 our Memorandum of Cooperation with the Canadian regulator in
539 joint technical reviews, finishing six topical reports in
540 highly complex areas of interest.

541 Funding will also allow NRC to provide critical
542 international assistance to countries with burgeoning
543 regulatory programs while we rise to the emerging challenges
544 around the world.

545 The budget request supports our goals to continuing
546 fostering a healthy organization and a hybrid work
547 environment. We will continue to maintain a highly-qualified
548 workforce through recruitment and retention of staff, with
549 greater emphasis on entry and mid-career-level hiring to
550 address projected attrition and prepare for anticipated
551 increasing workload in future years. In fiscal year 2022 we
552 successfully hired over 250 people, and we are exceeding 50
553 percent of our hiring goal for fiscal year 2023.

554 In closing, the fiscal year 2024 budget request allows

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555 the NRC to focus on conducting our mission activities and
556 recruiting and retaining a highly diverse and skilled
557 workforce to ensure the safety and security of nuclear power
558 facilities and nuclear materials.

559 On behalf of the Commission, I thank you for the
560 opportunity to discuss the important work we anticipate in
561 the year ahead, and for your support of the NRC's vital
562 mission, and I look forward to responding to your questions.

563 [The prepared statement of Mr. Hanson follows:]

564

565 *****COMMITTEE INSERT*****

566

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567 *Mr. Duncan. Thank you, Chairman Hanson.

568 Now we recognize Commissioner Baran for your five
569 minutes.

570

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571 STATEMENT OF JEFF BARAN

572

573 *Mr. Baran. Thank you, Chairman, Ranking Member
574 DeGette, and members of the subcommittee. Thank you for the
575 opportunity to testify today. It is always great to be back
576 with my colleagues to discuss NRC's important work.

577 I have been reflecting on the changes in the nuclear
578 energy landscape since I left the Energy and Commerce staff
579 and joined the Commission in 2014. A lot has changed. We
580 have seen major shifts in NRC's workload, budget, staff size,
581 hiring, and overall outlook for the future. When I arrived
582 on the Commission, these factors were all on a downward
583 slope. Our workload was shrinking, our staff and budget were
584 shrinking. We had the Project Aim effort to reduce costs,
585 narrowly avoided layoffs, and essentially had a hiring
586 freeze. Nuclear power plants were shutting down. Back then
587 there was little talk of new construction beyond Vogtle.
588 There was some interest in small modular reactors, but almost
589 no real discussion of advanced, non-light water reactors.

590 Today we are in a very different situation.
591 Policymakers and the public are increasingly focused on

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592 climate change and on energy security. The urgency and scale
593 of the challenge have led to a growing consensus that meeting
594 ambitious climate and energy security goals will involve
595 nuclear power, including new reactors. The bipartisan
596 infrastructure legislation and the Inflation Reduction Act
597 make large investments to drive this expansion, including
598 through the Clean Electricity Production Tax Credit and
599 funding for domestic high-assay, low-enriched uranium supply
600 chain. Few, if any, nuclear power plants are expected to
601 close anytime soon, with more potential applications for
602 advanced reactors, small modular reactors, subsequent license
603 renewal, new fuel designs, power uprates, and risk-informed
604 programs expected. NRC's overall workload is increasing. We
605 are hiring again, and our budget requests are stabilizing or
606 even growing a bit to allow us to do this new work.

607 The outlook for nuclear has markedly changed, and it is
608 an exciting time to be doing our important work. NRC has a
609 key role to play in addressing climate change and energy
610 security. It is our job to ensure the safety and security of
611 nuclear power in the U.S. energy mix. To accomplish our
612 mission, NRC needs an efficient, effective, and timely

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613 licensing process that can handle every application that
614 comes our way. This is an important NRC responsibility.

615 Based on pre-application interactions with potential
616 licensees, the NRC staff anticipates that at least 20
617 advanced reactor designs, reactor license applications, and
618 early site permit applications will be under review in the
619 next few years. The Department of Energy, Utilities, and
620 Vendors predict that applications for hundreds of additional
621 reactors may follow in the coming decades. NRC must,
622 therefore, be fully prepared for a surge in new reactor work.

623 Readiness is a multi-faceted challenge. NRC has
624 intensified its focus on having sufficient resources and the
625 right expertise to conduct these reviews. We are focused on
626 retaining our talented staff and on the significant external
627 hiring necessary to do the work in front of us now, and to be
628 ready for the work coming our way.

629 The agency is also working hard to establish a risk-
630 informed, performance-based, and technology-neutral
631 regulatory framework for new reactors.

632 At the same time, the staff is taking steps to make
633 individual licensing reviews more efficient and predictable.

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634 The NRC staff is employing core review teams with stable
635 staffing over time, doing more in-person checks of support
636 information, and fewer formal requests for information,
637 addressing more substantive technical issues during
638 pre-application engagement, elevating tough licensing issues
639 more quickly for senior leadership or commission direction,
640 using probabilistic risk assessments to focus reviews on
641 safety-significant items, and utilizing data analytics to
642 quickly identify schedule risks.

643 In addition, the staff has developed a generic -- has
644 developed a draft generic environmental impact statement for
645 advanced reactors.

646 As Chair Hanson noted, these efforts are already having
647 an impact with the Kairos application and the Abilene
648 Christian University application.

649 To sustain and build on this early progress, I believe
650 that the Commission must provide leadership and
651 accountability by communicating our expectations for new
652 reactor licensing reviews. Since NRC was established,
653 Commission policy statements have been used to share our
654 expectations for the staff or regulated community on high-

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655 priority issues facing the agency.

656 I think it makes sense for the Commission to issue a
657 policy statement on the effectiveness, efficiency, and
658 timeliness of new reactor licensing reviews. A Commission
659 policy statement could address several key aspects of the
660 agency's licensing work, including aggressive but achievable
661 target schedules for the safety and environmental reviews, a
662 first-of-a-kind applications and subsequent reactor
663 applications of the same design, the ability to apply
664 regulatory findings and analyses from first-of-a-kind reviews
665 to simplify subsequent reviews, innovative licensing
666 approaches and techniques that will evolve over time to
667 optimize reviews, and a risk-informed focus on safety and
668 security.

669 I think we all recognize that this is a critical moment
670 for the nuclear sector. I want to see NRC meet the moment.

671 Thank you, and I look forward to your questions.

672 [The prepared statement of Mr. Baran follows:]

673

674 *****COMMITTEE INSERT*****

675

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676 *Mr. Duncan. Thank you, Commissioner Baran. I now
677 recognize Commissioner Wright for five minutes for an opening
678 statement.
679

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680 STATEMENT OF DAVID A. WRIGHT

681

682 *Mr. Wright. Thank you, Chairman Duncan, Ranking Member
683 DeGette, and honorable members of the committee, and thank
684 you for the opportunity to appear before you today.

685 And Chairman, thank you for your personal comments. As
686 you know, we have been friends for a very long time. And if
687 you remember, I was the very -- you were the very first
688 person I called when I was diagnosed with stage three colon
689 cancer back in 2008. So you are very important to me in my
690 life. So thank you.

691 *Mr. Duncan. David, if you could, pull the mike a
692 little closer.

693 *Mr. Wright. Oh, sure, I am sorry. All right.

694 *Mr. Duncan. Thank you.

695 *Mr. Wright. So I would like to start by thanking my
696 colleagues on the Commission and their staffs for being
697 willing to work together on important issues before us such
698 as small modular reactors, advanced fuels, cleanup of legacy
699 uranium mines, and spent fuel storage, just to name a few.

700 I am also grateful for the NRC staff who are truly some

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701 of the smartest and most talented people I have been around.
702 And as I have said before, they do an outstanding job of
703 monitoring the day-to-day safety of our nuclear facilities,
704 and I want to take the moment to acknowledge them.

705 As you have heard, this is an exciting time for the
706 Commission. The policy decisions that we have in front of us
707 will play a pivotal role in shaping the energy future of this
708 country, as well as beyond our borders. And I am honored to
709 be a part of that process.

710 As I mentioned to you all the last time I was here, we
711 know what success at the NRC looks like. Success means that
712 we enable the safe use of nuclear technology and don't
713 disable it. It means that we continue to accomplish our
714 mission of reasonable assurance, of adequate protection of
715 public health and safety, and to promote the common defense
716 and security, and to protect the environment.

717 The challenge is deciding how to reach that goal in the
718 most effective, efficient, and reliable way. I believe the
719 NRC is up to the challenge. This is a unique and special
720 opportunity in time and, by working together, the five of us
721 can help meet this moment.

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722 For example, I am currently reviewing a brand new
723 proposal by one of my colleagues on efficiencies related to
724 advanced reactor reviews. I am also working together with
725 Commissioner Caputo on a new expedited proposal for
726 establishing metrics in key areas so the staff has tools to
727 show that they are meeting their goals with the urgency that
728 is required for us to meet this moment in time.

729 And by working together, we as a Commission can do our
730 part to help provide energy security, energy resilience, grid
731 security, and national security, not just here in the United
732 States, but for our allies around the world. So thank you
733 for the opportunity to appear before you, and I look forward
734 to your questions.

735 [The prepared statement of Mr. Wright follows:]

736

737 *****COMMITTEE INSERT*****

738

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739 *Mr. Duncan. I thank you, and I now go to Commissioner
740 Caputo for five minutes.
741

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742 STATEMENT OF ANNIE CAPUTO

743

744 *Ms. Caputo. Thank you, Chairman Duncan and Ranking
745 Member DeGette, and to the members of the committee for
746 holding this important hearing. Like Commissioner Baran, I
747 have fond memories of my time in service to the members of
748 this great committee, and I am pleased to come before you
749 today.

750 The primacy of the NRC's mission is indisputable, but we
751 must innovate how we accomplish that mission, and do so with
752 a sense of urgency in recognition of our national and global
753 clean energy needs. We must innovate how we regulate,
754 improve our performance, and cultivate results-driven
755 leadership. With advanced reactor technologies emerging, our
756 regulatory approach must keep pace.

757 Significant work remains to develop the regulatory
758 framework Congress envisioned in NEIMA, one that is truly
759 risk-informed, reflecting the inherent safety found in
760 advanced designs. It is imperative that the Commission focus
761 its collective effort to meet Congress's intent with a sense
762 of urgency to allow safe nuclear energy deployment on a scale

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763 warranted by our national and global clean energy needs.

764 Second, we must strive to improve our performance, not
765 simply measured by safety, but also by the efficient and
766 timely completion of our work. As the old saying goes, you
767 can't manage what you don't measure. If you weren't
768 measuring, you won't know if something is getting better or
769 worse. For over 20 years we have successfully used
770 performance indicators to objectively measure safety through
771 our reactor oversight process. However, there are few agency
772 performance measures that the Commission or the public see
773 beyond those reported to Congress with our budget, and those
774 are not designed to drive performance improvement.

775 Given the business intelligence tools the agency has
776 available today, I believe we should have meaningful, near-
777 real-time measures available to the Commission and the public
778 to track the duration and level of effort for our licensing
779 reviews. Gathering data on these reviews would allow us to
780 benchmark best practices, discover opportunities for process
781 improvements, and refine budget estimates.

782 Measuring the agency's performance would also enable
783 Congress and us at the Commission to hold ourselves

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784 accountable for improving. Releasing this information
785 publicly would also reduce perceptions of regulatory risk by
786 providing external stakeholders a window into our progress.

787 I am glad to see Commissioner Baran emphasized timely
788 decision-making by proposing that the Commission establish
789 its expectations for new reactor reviews. While I agree with
790 his intent, I am unconvinced it will achieve results without
791 a robust set of performance indicators. I am pleased to be
792 working with my colleague, Commissioner Wright, on a proposal
793 to do -- for the Commission to do just that.

794 Third, I believe we need results-driven leadership. We
795 must cultivate effective staff leaders who can innovate,
796 implement, and sustain change without falling prey to
797 groupthink. We need our leaders to cultivate a workforce
798 with the best talent and brightest minds, and instill a
799 culture of striving for the highest levels of performance.

800 We must also empower our leaders to use their deep
801 knowledge of agency processes to renew our focus on licensing
802 and oversight work. Staff leadership should engage the
803 agency in a back-to-basics effort to risk-inform and
804 streamline internal operations, thereby reducing unnecessary

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805 busywork and stress on the staff.

806 In 2008 and 2009 the NRC was rated the best place to
807 work at a time when the agency was executing a heavy new
808 reactors workload with challenging schedules and a sense of
809 urgency. I am confident our staff will strive to meet or
810 exceed the goals we set for them. Demonstrating that we can
811 achieve timely reviews and celebrating those successes is
812 vital to improving morale.

813 In conclusion, as the nation's safety and security
814 regulator, we are the gatekeepers to the deployment of
815 advanced reactors. The posture with which we approach our
816 mission will have a distinct impact on whether nuclear energy
817 will make a growing contribution to our energy needs.
818 Congress has made its expectation clear, and the drumbeat
819 from external stakeholders is unmistakable. Our regulatory
820 structure should be clear and straightforward to navigate,
821 and our decision-making should be timely, transparent, and
822 predictable. It is incumbent upon us as an agency to
823 innovate, improve our performance, and cultivate the results-
824 driven leadership capable of bringing it all together to meet
825 these expectations.

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826 Going forward, I hope the committee will continue its
827 oversight, and monitor our performance, and hold us
828 accountable. Thank you for the opportunity to provide my
829 comments, and I look forward to your questions. Thank you.

830 [The prepared statement of Ms. Caputo follows:]

831

832 *****COMMITTEE INSERT*****

833

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834 *Mr. Duncan. Thank you, Commissioner Caputo, and
835 welcome back.

836 I will now go and recognize Commissioner Crowell for
837 five minutes.

838

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839 STATEMENT OF BRADLEY R. CROWELL

840

841 *Mr. Crowell. Thank you, Chair Duncan, Ranking Member
842 DeGette, and members of the committee. Thank you for the
843 opportunity to testify today.

844 As the NRC's newest commissioner, I have had the
845 pleasure of building positive working relationships with my
846 fellow commissioners, and it has been readily apparent that a
847 genuine spirit of collegiality among the Commission forms the
848 foundation for successfully overseeing the execution of the
849 NRC's mission with maximum effectiveness and efficiency.

850 Indeed, the benefits of collegiality are most fully
851 realized when operating with the full complement of
852 commissioners. With five commissioners since last August,
853 the Commission has made progress on pivotal issues related to
854 the existing reactor fleet, while forging ahead on
855 establishing a responsible regulatory framework to support
856 the next generation of nuclear technologies.

857 Chair Hanson highlighted many of these topics in his
858 testimony, as well as other notable recent accomplishments by
859 the NRC, while also emphasizing the robust work schedule

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860 ahead for fiscal year 2024 and beyond.

861 The NRC plays a central role in the future viability of
862 nuclear energy, both in the U.S. and abroad. As our nation's
863 regulator for the safe and secure operation of civilian
864 nuclear technologies, the NRC is committed to fully meeting
865 this responsibility such that the public can have confidence
866 that all NRC licensees operate in a manner that minimizes
867 risk and maximizes safety.

868 The foundational mission of the NRC must always be the
869 uncompromising commitment to public health, safety, and the
870 environment, and to promote the common defense and security.
871 However, as we look to the future, this vital mission must be
872 achieved using a broader lens than has traditionally been
873 used at the NRC.

874 While the function of an independent commission-led
875 agency such as the NRC is intentionally distinct from
876 traditional Federal executive branch agencies, Congress did
877 not intend for independent agencies to operate in a vacuum or
878 be immune from the inherent collective responsibility of all
879 U.S. Government agencies to advance the common good. Based
880 on this bedrock principle, I believe the NRC must renew its

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881 commitment to safety and security by embracing the shared
882 responsibility of our nation's collective effort to address
883 climate change and energy security within the context of
884 executing the agency's statutorily-defined mission.

885 Nuclear energy provides over half of America's carbon-
886 free electricity, and avoids more than 470 million metric
887 tons of carbon dioxide emissions that would otherwise come
888 from fossil fuels. This is just in the United States.
889 Globally, the International Atomic Energy Agency estimates
890 that nuclear energy avoids two gigatons per year of carbon
891 emissions. This is roughly equivalent to displacing the
892 energy output and associated pollution of over 500 coal
893 plants. To achieve an equivalent reduction in emissions
894 without nuclear energy would require siting, building, and
895 operating over half a million new wind turbines.

896 Similarly, recent geopolitical events have brought back
897 into clear focus that energy security and national security
898 go hand in hand. Meanwhile, maintaining the current
899 operating fleet of nuclear reactors and deploying new and
900 advanced reactors is one of the very few options to achieve
901 meaningful, near-term reductions in carbon pollution, while

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902 serving as an important baseload power supply.

903 These benefits, combined with the anticipated
904 significantly-enhanced safety features of newer and advanced
905 reactors, creates the opportunity for advanced nuclear energy
906 to be truly game-changing technology in the U.S. and beyond.
907 However, while the potential for nuclear energy to make
908 meaningful and enduring contribution to reducing carbon
909 emissions and stabilizing our energy grid is real, time is of
910 the essence.

911 The NRC plays a critical role in our nation and, indeed,
912 our world's collective effort to meet this moment. But to be
913 successful, the NRC must embrace a contemporary sense of
914 purpose that embodies the challenges and opportunities before
915 us. Essential to this effort, the NRC must restore, build,
916 and maintain public trust through proactive and meaningful
917 interactions with the public, other governmental
918 organizations, and the full spectrum of stakeholders.

919 Likewise, we must not focus solely on the benefits of
920 nuclear energy and the power sector. The NRC must also
921 maintain a commitment to safely regulating the full fuel
922 cycle by asserting commensurate focus on issues from mining

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923 to waste in its regulatory decisions, oversight, and research
924 activities. Proactive engagement on used fuel management,
925 decommissioning, and waste disposal is critical to enhancing
926 public confidence, and failing to do so will have the
927 opposite effect.

928 I am excited by the challenges of what we can and must
929 accomplish by the end of this decade, but we must get to work
930 now to maintain this level of commitment -- and maintain this
931 level of commitment in subsequent years to succeed. With
932 adequate resources for the agency and under clear, consistent
933 leadership by the Commission, I believe we can achieve our
934 goals, and I am confident that the NRC staff is up to the
935 challenge.

936 The fiscal year 2024 budget request is an important next
937 step to ensure the NRC has the resources necessary to meet
938 this pivotal moment, and I look forward to discussing that
939 with you today and your questions. Thank you.

940 [The prepared statement of Mr. Crowell follows:]

941

942 *****COMMITTEE INSERT*****

943

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944 *Mr. Duncan. I thank you for that, and time is of the
945 essence, exactly.

946 I want to thank everyone for their testimony. We will
947 now move into the question-and-answer portion of the hearing,
948 and I will begin by recognizing myself for five minutes of
949 questions.

950 Each of you talked about preparing the NRC for the
951 future while maintaining its mission to provide assurance of
952 adequate safety. I appreciate that. I support that, and
953 will support you in that mission.

954 However, the NRC seems to have been undergoing efforts
955 to transform itself to meet the future for over a decade.
956 The future is now. I am wondering how that is going. An
957 important example is license renewals for existing reactors.
958 This work may double over the next decade.

959 Chair Hanson, you and I talked about the staff review of
960 license renewals and subsequent license renewals that take
961 longer and cost more. The reviews doubled in cost and in
962 time from the first reviews in 2000 through 2015, and have
963 trended higher ever since. NRC is charging \$6 million per
964 review today versus \$2 million in 2000, including for

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965 previously-reviewed sites. This does not reflect an agency
966 learning, improving, or getting more efficient.

967 Now, we learned that applicants like Oconee, Turkey
968 Point, and North Anna, that their subsequent license renewals
969 will be delayed by months, failing to meet their published
970 deadlines. So how is that a sign of positive transformation
971 or efficient and predictable regulation, Chair Hanson?

972 *Mr. Hanson. Yes, thank you, Mr. Chairman, and I
973 appreciate the discussion on subsequent license renewals.

974 I agree we should be getting more efficient on these. I
975 don't have all the numbers about the dollars in front of me.
976 Since 2015, when we have really been tracking the specific
977 hours on these, we have had an average of about 21,000 hours.
978 We are a little above that right now on the subsequent ones,
979 for 25,000 hours. I have been digging into this. I am not
980 entirely satisfied with the answers I am getting, and I am
981 going to continue to explore this.

982 There are some more -- a few more areas we need to look
983 at when we go from 60 to 80 years, but there should be a lot
984 of things that are also the same. And I admit that our
985 review process isn't fully risk-informed, and we need to take

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986 a look at that, and see how we can achieve some efficiencies
987 there, and make sure we are focused on the most safety-
988 significant items. So that is an area that I am focused on
989 with the staff as we speak, and I am going to continue to do
990 so.

991 *Mr. Duncan. And I appreciate the 60 to 80 years. I
992 know my constituents would probably be concerned that we are
993 licensing nuclear reactor out to 80 years, but I appreciate
994 your efforts there, I will say that.

995 Commissioner Caputo, you make an important point about
996 being an innovative regulator. I am hopeful we will see more
997 of that. You also talk about measuring results and
998 references. You have referenced Congress's requirements for
999 metrics in the NEIMA. Have those metrics been implemented
1000 sufficiently to measure performance?

1001 *Ms. Caputo. Well, Congress has established
1002 expectations, but I have yet to see how we publicly track
1003 those with actual metrics.

1004 And when I refer to business intelligence software that
1005 is accessible to us, I believe it is possible for us to track
1006 progress of reviews in what I said in my statement, near real

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1007 time, to show progress in terms of a percentage of
1008 completion, but also to track hours and review. A lot of our
1009 reviews are done by chapters.

1010 So as discussions unfold and hours that are budgeted for
1011 the review are executed, it would be easy to tell in real
1012 time where the hours necessary to complete the review -- how
1013 far along we are in that review, so that people can actually
1014 see what progress we are making and where any sticking points
1015 might be in terms of actual schedule.

1016 *Mr. Duncan. In real time for all the commissioners to
1017 actually keep track of?

1018 *Ms. Caputo. And the public.

1019 *Mr. Duncan. Yes, good.

1020 Well, Chair Hanson, let me come back to you. You and I
1021 talked about measuring performance. What are you doing to
1022 improve the metrics so that staff leaders can manage better?

1023 *Mr. Hanson. Thank you, Mr. Chairman. We have -- we
1024 are implementing a couple of tools. One is called our
1025 Mission Analytics Portal, which we have been kind of piloting
1026 inside the agency, where project managers on specific reviews
1027 can track hours, and not only track hours, but actually

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1028 assign hours to resolve particular technical issues. So --

1029 *Mr. Duncan. These are regulators or industry folks?

1030 *Mr. Hanson. I am sorry?

1031 *Mr. Duncan. Are these regulators or industry folks
1032 that are working together on that?

1033 *Mr. Hanson. Well, it is -- we have piloted this
1034 largely internally, and then we have got an external version
1035 which we are just starting to roll out so that our licensees
1036 can then track our progress and know what to expect on our
1037 reviews.

1038 What we haven't done, I think, yet is then kind of set
1039 the benchmarks on that. We are tracking it, but, you know,
1040 setting those bright lines within that system, and fully
1041 understanding where we are approaching them or where we are
1042 crossing them, I think, is kind of the next step then in the
1043 management of that.

1044 *Mr. Duncan. Yes.

1045 *Mr. Hanson. So we are -- again, I don't think we are
1046 fully where we need to be. I think Commissioner Caputo makes
1047 a good point about needing to make progress in this area. I
1048 fully agree with that. But we have taken some, I think, some

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1049 important steps.

1050 *Mr. Duncan. Thank you for that. My time is expiring.
1051 I will say this, that there is a lot of industry folks in the
1052 room, and we engage -- all of us engage with industry folks,
1053 and they need to know certainty, timelines. And they have
1054 investors they have got to inform. I like the open portal
1055 for the public. So what I am hearing I appreciate.

1056 I will now go to the Ranking Member DeGette for five
1057 minutes.

1058 *Ms. DeGette. Thank you, Mr. Chairman.

1059 So as all of you know, in April we had a hearing with
1060 leaders from the nuclear industry to talk about the
1061 challenges that they are facing in their operations and their
1062 planning. And the question I asked, which I referred to in
1063 my opening statement, was how the panel -- how the lack of a
1064 comprehensive, long-term nuclear waste strategy impacts their
1065 planning and their industry.

1066 So now, here -- we have you all here today. I would
1067 like to ask a similar question, starting with you, Chairman
1068 Hanson. In your view, how has the lack of a comprehensive
1069 spent fuel strategy impacted the nuclear industry?

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1070 *Mr. Hanson. Thank you, Ranking Member DeGette, for
1071 that question.

1072 We are overseeing right now the safety and security of
1073 spent fuel at sites around the country, and that spent fuel
1074 is being safely stored.

1075 *Ms. DeGette. How has it impacted the industry that we
1076 don't have a long-term policy?

1077 *Mr. Hanson. I think I would say that it has probably
1078 increased the costs for the industry, but I think safety --
1079 we are able to assure the safety of that spent fuel on --

1080 *Ms. DeGette. Right.

1081 *Mr. Hanson. -- on site.

1082 *Ms. DeGette. Would it be a good idea to get a long-
1083 term policy about disposing of spent fuel? Maybe that is a
1084 better question.

1085 *Mr. Hanson. Undoubtedly.

1086 *Ms. DeGette. And would --

1087 *Mr. Hanson. I think it is -- it may be up to our
1088 colleagues at the Department of Energy to formulate that
1089 strategy, and then we are going to have the role --

1090 *Ms. DeGette. You will implement it.

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1091 *Mr. Hanson. Of, well, not implementing it, but
1092 assuring the safety of that. So for instance, in the interim
1093 storage facilities, whether that is at reactors or away from
1094 reactors, we license those and we evaluate the safety and the
1095 environmental impacts of that. And then the overall national
1096 strategy of that, the policy of that really kind of resides
1097 in other arms of the executive branch.

1098 *Ms. DeGette. Right, thank you.

1099 So the committee sent a series of letters to nuclear
1100 stakeholders soliciting feedback on the licensing process, as
1101 several of us have mentioned. And a lot of what we heard was
1102 that the process was burdensome, and would benefit from
1103 streamlining. But as I said in my opening, we can't
1104 sacrifice the public health and safety of Americans in the
1105 name of speeding up development of nuclear energy.

1106 So let me try this question, Mr. Chairman. Do you think
1107 that the NRC can make meaningful reforms to streamline the
1108 process without sacrificing public health and safety? Yes or
1109 no will work.

1110 *Mr. Hanson. Absolutely, I do.

1111 *Ms. DeGette. What about you, Commissioner Baran? You

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1112 are shaking your head.

1113 *Mr. Baran. I agree, yes.

1114 *Ms. DeGette. Commissioner Wright?

1115 *Mr. Wright. Yes, ma'am.

1116 *Ms. DeGette. Commissioner Caputo?

1117 *Ms. Caputo. Yes, ma'am.

1118 *Ms. DeGette. Commissioner Crowell.

1119 *Mr. Crowell. Yes.

1120 *Ms. DeGette. Great. I think it is an important point
1121 about not sacrificing public health and safety. And so, Mr.
1122 Chairman, not to keep you on the hot seat, but under your
1123 leadership has the NRC considered safety features of new
1124 nuclear technologies while ensuring the same standard of
1125 safety evaluations that we have come to expect from the
1126 agency in which it is performed?

1127 *Mr. Hanson. Yes, ma'am. We have a policy statement
1128 that says advanced reactors should achieve at least the same
1129 level of safety as the current operating fleet, and that is
1130 one of our guiding principles as we explore these new
1131 reactors.

1132 We have dived into the -- some of the unique aspects of

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1133 these reactors. I mentioned the 51 technical reports. A lot
1134 of those have been about the new technology that is being
1135 deployed, et cetera, so that we can get a head start on some
1136 of that, and evaluate some of that early.

1137 *Ms. DeGette. Great, thanks. Now, if we were to reform
1138 the licensing process, the amount of work required by the NRC
1139 would increase, and Congress would have to provide additional
1140 resources to ensure the safety that we have come to expect
1141 from the agency.

1142 And so, Commissioner Crowell, I was going to ask you
1143 what resources are most needed for the NRC to continue to
1144 ensure safety within our nuclear fleet?

1145 *Mr. Crowell. Thank you for the question. You know,
1146 the NRC is primarily a fee-based agency, so we derive most of
1147 our operating money from the licensees. But as that dynamic
1148 changes and fees may change over time, depending on the
1149 amount of applicants we have or the facilities we oversee, I
1150 think it is important to be able to do some independent
1151 evaluation on safety and security that isn't necessarily tied
1152 to the fees of licensees. And so having some appropriated
1153 dollars to focus on those areas in -- you know, generically

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1154 and generally, I think would be helpful.

1155 *Ms. DeGette. Commissioner Baran, do you have anything
1156 to add to that?

1157 *Mr. Baran. Sure, yes. I would just say that in the
1158 last few years Congress has been very supportive on the
1159 advanced reactor side, establishing the framework, right? So
1160 there is no one to bill for establishing the overall advanced
1161 reactor framework that we have been talking about, part 53
1162 and several of the key policies around that. That is not a
1163 specific licensing review, it is the -- a regulatory
1164 framework. And so that has been off the fee base, which is
1165 good. And Congress has been very supportive in that area,
1166 and that has really helped us build that out without
1167 affecting fees.

1168 *Ms. DeGette. Great, thank you.

1169 Thank you, Mr. Chairman. I yield back.

1170 *Mr. Duncan. The gentlelady yields back. I will now go
1171 and recognize Mr. Latta from Ohio for five minutes.

1172 *Mr. Latta. Thanks, Mr. Chairman, and thanks to the
1173 commissioners for being with us today. It is good to have
1174 you all here again. I am going to kind of revise some of the

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1175 questions that I had earlier.

1176 But let me start with this, Mr. Chairman. How much
1177 uranium do we get from Russia for reactors in this country?

1178 *Mr. Hanson. Yes, I believe it is about 20 to 30
1179 percent of our current needs are fulfilled by Russia.

1180 *Mr. Latta. And the second question is how much of that
1181 is being enriched by the Russians?

1182 *Mr. Hanson. I guess I thought that number was enriched
1183 uranium.

1184 *Mr. Latta. Enriched and receiving.

1185 *Mr. Hanson. Yes.

1186 *Mr. Latta. Okay. Let me ask this. If I could just
1187 get a yes or no question maybe from all the commissioners, is
1188 it a good idea that we are getting this much uranium from the
1189 Russians, or should we be getting it from the -- from
1190 ourselves or from other sources?

1191 *Mr. Hanson. I think I can say, as a matter of policy,
1192 no, it is not a good idea.

1193 *Mr. Baran. I agree, it is not a good idea.

1194 *Mr. Wright. No.

1195 *Ms. Caputo. Not at this point, given their recent

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1196 actions in the last few years.

1197 *Mr. Crowell. I agree with the chair's response.

1198 *Mr. Latta. Well, thank you. And I think it is
1199 important because the question that we were discussing when
1200 the Secretary of Energy was here not too long ago was this.
1201 And I was just following up with my friend from Colorado with
1202 her line of questions, especially when we are talking about
1203 -- with our spent nuclear rods and where they are being
1204 stored.

1205 France right now is about the only country in the world,
1206 if I am not mistaken, is the only one that is really
1207 recycling their rods. Is that correct?

1208 *Mr. Hanson. Correct.

1209 *Mr. Latta. And why isn't the United States not looking
1210 at trying to do the same thing? Because it is my
1211 understanding, if you can go out and with a spent rod, you
1212 might be able to get another usage out of it if you recycle
1213 it, which would then reduce our dependance on uranium from
1214 foreign sources, and then it would also have us take care of
1215 the situation as how we are, you know, we are restoring it.

1216 Because, you know, it has been several years ago that

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1217 several members of this committee have been out to Yucca
1218 mountain, which I have got to say is the most expensive hole
1219 I have ever been in, at over -- I think it was over \$18
1220 billion -- not being utilized, that we should be doing
1221 something in this country with our spent rods.

1222 But what is happening in this country that we are not
1223 doing it?

1224 *Mr. Hanson. Well, Congressman, I can tell you that we
1225 -- our regulations are certainly adequate to ensure the
1226 safety of any kind of recycling or reprocessing operation
1227 that might come down the pipe. I think in the history, there
1228 hasn't been a -- at least in the last 30 or so years, been
1229 any prohibition on recycling in the U.S. And so I think it
1230 has been a matter of policy on other parts of the government
1231 and the economics of that.

1232 *Mr. Latta. Commissioner Caputo?

1233 *Ms. Caputo. Congressman, the point that you make
1234 regarding domestic supply is very accurate, and that is in
1235 fact what drove both France and the UK to develop
1236 reprocessing, because estimates in the 1970s were that
1237 uranium was going to become extremely expensive. But it is a

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1238 cost-intensive process. And so the economics of reprocessed
1239 uranium versus natural uranium is an extreme cost difference.

1240 I think the question --

1241 *Mr. Latta. May I interrupt on that question?

1242 *Ms. Caputo. -- that we will be looking at --

1243 *Mr. Latta. When you say an extreme cost difference,
1244 could you tell me any kind of a percentage of what we are
1245 looking at there?

1246 *Ms. Caputo. When I graduated from school and took my
1247 first post working with nuclear fuel buyers, the difference
1248 was between 950 a pound for uranium and roughly 400.

1249 *Mr. Latta. Okay. And since that time, though, has the
1250 cost been able to be brought down from that level?

1251 *Ms. Caputo. Possibly. But I think one of the things -
1252 - one of the potentials for advancement here is with the
1253 advanced reactors that we are seeing. They can use --
1254 utilize reprocessed materials, I think, in different ways,
1255 just based on the reactor physics of how they operate. So I
1256 think there are opportunities perhaps for less cost-intensive
1257 separations, technologies that could then fuel some of these
1258 advanced reactors.

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1259 So I think there is room for progress in bundling those
1260 two --

1261 *Mr. Latta. And are those studies going on right now
1262 and -- or the analysis of being able to bring those costs
1263 down to make sure that we could be?

1264 Because again, what happens if that 20 percent of the
1265 Russian uranium that we are receiving right now all of a
1266 sudden dries up? What does that do to the cost of everything
1267 else, then, that would --

1268 *Ms. Caputo. Well, the difference between the 1970s and
1269 now is we have much better understanding of uranium reserves,
1270 and they are really prolific. And should the cost really
1271 rise, we can actually recover it from seawater, although
1272 that, I think, still remains in excess of \$200 a pound. So
1273 there are opportunities like that.

1274 The last time a serious cost estimate was done, I
1275 believe, was in 2006, and this was commissioned by energy and
1276 water appropriations. But that was looking at the -- a
1277 slightly modified version of historic technology. So there
1278 is probably room, I think, at this point to perhaps do
1279 another cost estimate looking at the advanced reactor

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1280 technologies and the separations technologies that might
1281 facilitate those reactors.

1282 *Mr. Latta. Well, thank you very much, and thanks to
1283 the commissioners for being here.

1284 Mr. Chairman, my time is expired, and I yield back.

1285 *Mr. Duncan. I thank the gentleman, and I now go to the
1286 ranking member of the full committee, Mr. Pallone, for five
1287 minutes.

1288 *Mr. Pallone. Thank you, Mr. Chairman. I want to start
1289 with a topic that is relevant to my state and many others
1290 with shut-down nuclear plants: NRC's decommissioning
1291 rulemaking.

1292 Unfortunately, the proposed rule before the Commission
1293 fails to properly expand the role of states and local
1294 governments in this process, one that has generated impacts
1295 on these communities. So with regard to the decommissioning
1296 rulemaking, let me ask Chairman Hanson.

1297 In 2021 I asked you to commit to taking a serious look
1298 at this, and you agreed, stating, and I quote, "I understand
1299 the importance of this for local communities.'" Can you
1300 update me on where things stand as it relates to the role of

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1301 states and local governments in this proposed rule?

1302 *Mr. Hanson. Yes, thank you, Congressman Pallone.

1303 We had an extensive public comment period on the draft
1304 rule that -- and had included a number of questions for the
1305 public, and got a lot of feedback on that. The staff is
1306 currently revising the draft rule, and we expect to have a
1307 final rule in front of the Commission, I believe, in October
1308 or November later this year. Then we will see what the
1309 changes have been, and how they have incorporated the
1310 public's comments.

1311 *Mr. Pallone. Now, let me ask Commissioners Baran and
1312 Crowell. Do you believe the proposed rule appropriately
1313 addresses the role of states and local governments in the
1314 decommissioning process?

1315 I will start with Commissioner Baran.

1316 *Mr. Baran. Well, at the stage of the proposed rule I
1317 didn't think it did. I shared your concerns about that. I
1318 think we should go further in making sure that states and
1319 local governments have a voice in the decommissioning
1320 process.

1321 I mean, a plant shutting down is a big deal for

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1322 everyone, right? It is a big deal for the company, it is a
1323 big deal for the workers, the state, the locality. And right
1324 now the rule there is really very limited.

1325 And one thing that could be done -- and there were a lot
1326 of comments we got on the proposed rule in this regard -- was
1327 to have a decommissioning plan that is approved by NRC. I
1328 would like to see that, before it is approved by NRC, go to
1329 the state as well for their feedback, and have that baked in
1330 before NRC even takes a look at it.

1331 But I think there is more that we can do, and I would
1332 like to see us do more on that rule to empower local
1333 communities more than they are now.

1334 *Mr. Pallone. Thank you.

1335 Commissioner Crowell?

1336 *Mr. Crowell. I would generally agree with those
1337 sentiments. I think, whether within the proposed rule or
1338 through other mechanisms, there is room for improvement for
1339 engaging local communities on decommissioning. You know, I
1340 think we could do a lot outside of the rule, just through
1341 good stakeholder engagement to help communities feel like
1342 they are -- their interests are being protected in the

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1343 decommissioning process. We could do those mechanisms
1344 formally through a rule, but I -- there is no reason why we
1345 can't do them in an informal fashion, as well, to make sure
1346 that the communities are getting what they need.

1347 *Mr. Pallone. Thank you. And I mentioned in my opening
1348 statement in 2021 the NRC created an environmental justice
1349 review team to review how the agency's programs, policies,
1350 and activities addressed environmental justice. The
1351 resulting assessment made six formal recommendations.

1352 And yesterday, at a subcommittee hearing with FERC
1353 commissioners, I discussed the newly established FERC Office
1354 of Public Participation, something I have advocated for a
1355 long time. And this office will assist the public with
1356 participating in often complex FERC proceedings. So let me
1357 ask Chairman Hanson.

1358 The FERC Office of Public Participation model seems like
1359 it would provide similar benefits if implemented at the NRC.
1360 Both commissions regulate complex topics that are often
1361 difficult for regular citizens to understand and participate
1362 in. Would you consider standing up an office of public
1363 participation at the NRC as part of the ongoing environmental

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1364 justice review?

1365 *Mr. Hanson. Thank you, Congressman Pallone. Yes, the
1366 paper that we got back from -- on environmental justice from
1367 the staff kind of -- really centered around two main things.
1368 One was about updating our strategy and policy, which are 20
1369 or 30 years old. The other part was really enhancing public
1370 engagement on that. And so the paper is still before the
1371 Commission for consideration, but should the opportunity
1372 arise in one of my colleagues' votes to establish such an
1373 office, I personally would welcome that.

1374 *Mr. Pallone. All right. And I don't know if there is
1375 only 45 seconds left, but Commissioners Baran or Crowell, do
1376 you have any comments on this idea?

1377 *Mr. Baran. Yes, I think --

1378 *Mr. Pallone. Thirty seconds.

1379 *Mr. Baran. I think it is a very good idea. I think it
1380 is important for NRC to establish a similar office. Other
1381 Federal agencies like FERC have done that, and we got that
1382 comment over and over and over in our environmental justice
1383 review comment period.

1384 I mean, just tons of stakeholders were saying it is very

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1385 difficult to navigate NRC's processes and procedures, and on
1386 top of a lot of technical information. And having an office
1387 that could help folks navigate all that, I think, would be
1388 really valuable.

1389 *Mr. Pallone. All right. Thank you so much.

1390 Thank you, Mr. Chairman.

1391 *Mr. Duncan. The gentleman's time has expired. I now
1392 recognize the gentleman from Virginia, Mr. Griffith, for five
1393 minutes.

1394 *Mr. Griffith. Thank you, Mr. Chairman, I appreciate
1395 it.

1396 As you all may be able to read from the plaque, I am
1397 from Virginia. I represent the southwest portion of
1398 Virginia, and I am excited about Governor Youngkin's energy
1399 plans, overall energy plans, and his aspirations to make the
1400 Commonwealth of Virginia a leader in nuclear power
1401 renaissance. We are looking at the viability of small
1402 modular reactors in my district, particularly the possibility
1403 of using an abandoned mine site, particularly a surface mine
1404 or a brownfield site.

1405 Now I would ask all of you, for early site permit

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1406 timelines, what would be your goal for applications --
1407 application review time, including pre-application meetings,
1408 and particularly for small modular reactors?

1409 Chairman Hanson, and then we will just go down the road.

1410 *Mr. Hanson. Okay, thank you.

1411 I believe the early site permit would include an
1412 environmental impact statement in there. And I think the new
1413 the debt ceiling bill includes some specific timelines in
1414 there for the completion of EISs. I believe that is 24
1415 months, so we would expect to meet that schedule.

1416 *Mr. Griffith. All right. Any difference of opinion?

1417 *Mr. Baran. No, not at all. In the proposal we were
1418 talking about earlier that I had, you know, presented to my
1419 colleagues just last week, I think one of the things we
1420 should be doing is looking at what are the aggressive but
1421 achievable schedules we should be thinking about for
1422 different types of applications like early site permits.

1423 *Mr. Wright. I absolutely think, Representative, that
1424 we can do better than 24 months. And that would be -- I
1425 mean, efficiency is something that is needed right now in
1426 order to meet this moment, and I think we have got -- we are

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1427 the ones that have to kind of model that.

1428 *Mr. Griffith. Yes, ma'am.

1429 *Ms. Caputo. I agree with that, but I also think that
1430 the Commission and the agency have been fairly quiet about
1431 these timeframes and the need to meet them and have a sense
1432 of urgency. And so I think there is room for us to sort of
1433 step up the message and create an expectation for staff that
1434 we are serious about meeting these goals.

1435 *Mr. Crowell. And I will just agree with most of what
1436 my colleagues have said, and just add that if an applicant
1437 chooses to pursue an early site permit, that should help
1438 facilitate the license review and approval process, not just
1439 add time to it. So we need to make sure that that is being
1440 taken into account as we review early site permits.

1441 *Mr. Griffith. Yes. And I am excited about it possibly
1442 coming into our region. The district is an energy region,
1443 historically. We are also -- the district is fairly large,
1444 so it does stretch out a little bit, but we are only a few
1445 miles from BWX in Lynchburg. We are maybe 30, 40 miles from
1446 BWX in Erwin, Tennessee. And the district also is only about
1447 75 miles from Oak Ridge. So we have got all the right

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1448 components close by that I think we need to make sure that we
1449 have a safe opportunity, and we are excited about those
1450 prospects.

1451 Commissioner Caputo, I understand that the NRC holds a
1452 so-called mandatory hearing for several license types. These
1453 hearings can be duplicative. By the time you all get around
1454 to the hearing, the license has been subject to an extensive
1455 NRC staff review, Advisory Committee on Reactor Safeguard
1456 reviews, and public challenges, and public comments. Could
1457 you talk some about the streamlining of the Nuclear
1458 Regulatory Commission's licensing hearings?

1459 *Ms. Caputo. Well, these hearings are currently
1460 mandated in the Atomic Energy Act, but they are separate from
1461 adjudications and adjudicatory processes that result from
1462 contentions that get filed. So these are the practices to
1463 conduct these at the Commission level.

1464 So I think there would be a fair amount of streamlining
1465 that would occur in terms of reducing the time to prepare and
1466 actually hold these hearings. The Commission is, hopefully
1467 in the fall, going to hold a mandatory hearing for,
1468 essentially, a research and test reactor. But the months

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1469 leading up to it are filled with preparation. And it is a
1470 full day of the Commission with numerous witnesses and, I
1471 think, probably in excess of 30 staff members committing
1472 their time.

1473 If the Commission were to find itself reviewing a
1474 significant number of applications, it would be pretty time
1475 intensive both for the Commission staff to prepare for these
1476 hearings and for the commissioners to put a lot of these on
1477 the calendar in addition to its regular duties.

1478 So I think there is room for a reform there to give the
1479 Commission discretion over situations where they might
1480 believe a mandatory hearing would be warranted versus
1481 opportunities to streamline the calendar by not conducting
1482 them.

1483 *Mr. Griffith. All right. Will you help us if we need
1484 to draft legislation to help you all do that?

1485 *Ms. Caputo. Happy to.

1486 *Mr. Griffith. Thank you.

1487 I yield back.

1488 *Mr. Duncan. The gentleman yields back. I now go to
1489 California, Mr. Peters, for five minutes.

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1490 *Mr. Peters. Thank you, Mr. Chairman, and thanks to the
1491 witnesses for being here.

1492 I want to start by congratulating you on what is really
1493 a remarkable safety record in this industry. I did a little
1494 looking, and was really surprised at how really safe nuclear
1495 power is in relation to other industries. If you want a fun
1496 listen I recommend the Freakonomics podcast about this, which
1497 I am -- you are all smiling, you have all heard. And -- but
1498 congratulations, and thank you for your work on that score.

1499 I do want to say also thank you for the continued
1500 interest in fusion and work on that. That is a -- clearly, a
1501 long bet that is worth making, and I continue to support the
1502 country's investment in that.

1503 But I am also interested, as my colleagues know, in
1504 making our climate goals. What I read is it is very
1505 difficult to imagine how we do that without really relying on
1506 nuclear, and nuclear is really a safe bet in terms of how to
1507 get there. So I thank you for your work, and look forward to
1508 working with you in the next generation of nuclear power.

1509 And I want to talk to you, Mr. Chairman, about my
1510 concerns about the time it takes to get permitted. NuScale

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1511 power is, so far, the only company to achieve an NRC license
1512 for their small modular reactor design. They chose to use
1513 the part 52 licensing pathway, pursue a design certification
1514 which could help ease future licensing reviews for their
1515 design. NuScale has publicly stated they have spent over 500
1516 million on application activities, 2 million labor hours
1517 obtaining their design certification. And according to the
1518 generic milestone schedule, a combined license under part 52
1519 could take anywhere from 30 to 42 months to reach a final
1520 safety evaluation. And this is not entirely unknown. This
1521 is a schedule we really want to compress.

1522 So as you work to develop the new part 53 pathway, one
1523 that will be specifically designed for advanced reactor
1524 licensing, can you explain how the NRC intends to create a
1525 framework that will lead to a more efficient and less costly
1526 licensing and permitting process that -- still guaranteeing
1527 safety?

1528 What is our goal here? What are -- where are we trying
1529 to get to?

1530 *Mr. Hanson. Yes, thank you, Congressman. It is a
1531 great question. If I could, I will make a couple of remarks

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1532 about NuScale, and then kind of what we learned, and how I
1533 think we are applying that then --

1534 *Mr. Peters. Right.

1535 *Mr. Hanson. -- to the part 53 process.

1536 We learned a lot through that NuScale design. It took
1537 41 months. I am not sure how much money NuScale spent. They
1538 paid us about \$67 million over the period -- that period of
1539 time to conduct that review. But the part 52 process was
1540 also a process where they needed to have, basically, a
1541 complete design. And then that design is codified in
1542 regulation that anybody can use to deploy anywhere, and so
1543 the idea being that the additional review would just be site-
1544 specific type things, emergency planning, external hazards,
1545 that kind of thing. So you make an upfront investment then
1546 to achieve efficiencies on the back end.

1547 *Mr. Peters. Right.

1548 *Mr. Hanson. For part 53, what we are really trying to
1549 do is make it much more technology inclusive. The
1550 regulations that we have now in part 52 -- as you noted, part
1551 50 -- are very specific to light water reactors. And so the
1552 folks who are pursuing maybe advanced reactor applications

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1553 under that have to go then and do a detailed analysis, we
1554 have to do a detailed analysis about which parts really
1555 apply.

1556 Well, if we take a lot of that -- maintain the safety
1557 standards, but take a lot of that light water reactor
1558 specificity --

1559 *Mr. Peters. Right.

1560 *Mr. Hanson. -- out of the regulation, then that
1561 provides, I think, an enormous potential to streamline the
1562 process.

1563 I can tell you that, even under part 52, our goal is to
1564 get down to 24 months --

1565 *Mr. Peters. Okay.

1566 *Mr. Hanson. -- for a design certification --

1567 *Mr. Peters. Thank you for that.

1568 *Mr. Hanson. -- approval.

1569 *Mr. Peters. I appreciate that.

1570 Is it Caputo, Commissioner? Is that how you say it?

1571 I would just like to point out on reprocessing -- so I
1572 have got a -- north of me I have got the San Onofre. I
1573 represent San Diego. North of me is the San Onofre, a

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1574 shuttered facility now, with a bunch of spent fuel sitting
1575 there, you know, near population centers, near faults, near a
1576 military base. I am counting on you to keep that safe. I
1577 believe you when you tell me that you will keep it safe.

1578 But it does seem like a waste in another way. And I
1579 understand that the added cost of reprocessing that you
1580 explained. But when we are thinking about the costs that we
1581 are talking about spending in terms of a permanent disposal,
1582 I think we ought to factor those in as sort of opportunity
1583 costs when we think about reprocessing. So I just favor us
1584 looking aggressively at reusing that fuel in a way that
1585 generates power, and to the extent that that requires a
1586 Federal effort.

1587 And I would love to have you answer that, but I am out
1588 of time, so someone else has got to ask the question or you
1589 could sneak it in on somebody.

1590 [Laughter.]

1591 *Mr. Peters. Thank you. I yield back.

1592 *Ms. Caputo. I am happy to take it for the record.

1593

1594 [The information follows:]

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1595

1596 *****COMMITTEE INSERT*****

1597

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1598 *Mr. Duncan. I thank the gentleman for yielding back.

1599 I now go to Mr. Walberg for five minutes.

1600 *Mr. Walberg. Thank you, Mr. Chairman, and thanks to
1601 the Commission for being here. We all have plenty of
1602 questions we would love you to answer even further. So
1603 thanks for taking the ones we do have.

1604 My district is home to two nuclear plants, Cook on Lake
1605 Michigan and Fermi on Lake Erie, both sides of the state. I
1606 am encouraged by the future of nuclear, but I also am
1607 concerned about some things that I read.

1608 NEI recently conducted a survey that found that over
1609 half of nuclear utilities are exploring power upgrades. But
1610 the problem is the NRC's review process has gotten longer and
1611 longer and longer, and consequently more and more expensive.
1612 For example, Palisades Nuclear Plant is located just a few
1613 miles north of my district, on Lake Michigan. While it is
1614 being -- currently being decommissioned, there are serious
1615 efforts to bring the plant back online, including through the
1616 Civil Nuclear Credit Program established by Congress.

1617 So, Chairman Hanson, there are a few hurdles the plant
1618 must clear before reaching the Commission. But if it does,

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1619 how can we ensure an expeditious approval process to bring it
1620 back online?

1621 *Mr. Hanson. Thank you, Congressman Walberg. I grew up
1622 right near Palisades, actually, and my family lives near
1623 Cook, so -- and I worked at the state park there right next
1624 to the plant during college.

1625 *Mr. Walberg. Warren Dunes, yes.

1626 *Mr. Hanson. I know that site well, and have taken a
1627 keen interest in it, too, obviously.

1628 We are in active discussions with Holtec, the current
1629 owner of that site, about how to -- they have gotten a series
1630 of exemptions when they shut down -- basically, how to undo
1631 those exemptions in a timely way, how they are going to
1632 physically bring the plant back into compliance, and how they
1633 are going to reestablish the programs.

1634 It is new ground for both Holtec and, I admit, for us.
1635 But I am confident that the staff can approach this with the
1636 appropriate sense of urgency and creativity, while
1637 maintaining safety, too, to -- if Holtec decides to proceed
1638 through that, and the economics work for them and so on and
1639 so forth, that we can work with them productively to get that

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1640 plant up and running.

1641 *Mr. Walberg. Well, that is encouraging to hear. The
1642 only discouragement that I potentially feel comes from
1643 concerns about Diablo, and what went on there in California.
1644 In that situation, as far as I know, the operator asked the
1645 NRC commissioners and staff to resume review of the previous
1646 licensing application, which had been 80 percent complete.
1647 And I know that is a bit different than what Palisades would
1648 have, but I think the principles are still there.

1649 It is my understanding that staff, not the Commission,
1650 rejected the request. This was a new and novel matter that
1651 would appear to fit the definition of a policy matter
1652 requiring Commission input, not as staff matter. But the
1653 staff does not appear to have consulted the Commission. And
1654 so when you say that you are confident of the staff in
1655 working with Palisades, that gives me a little bit of
1656 concern. Choices like these could cost taxpayers tens of
1657 millions of dollars more than necessary.

1658 Could you encourage me a bit more, Mr. Chairman -- and I
1659 offer to the Commission, as well, to respond -- on the
1660 Commission's role in Palisades and other similar entities in

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1661 the future?

1662 *Mr. Hanson. Thank you, Congressman. You know, I was
1663 out at Diablo just a couple of weeks ago, and I engaged in
1664 this conversation with the licensee.

1665 Because we didn't grant the request, essentially, the
1666 staff didn't grant the request to just restart, my question
1667 for them was how are interactions going with the -- you know,
1668 the idea here is that the licensee shouldn't have to start
1669 from zero, that a lot of the information in that previous
1670 application ought to be usable kind of going forward. And
1671 how are those interactions going? I wanted to hear directly
1672 from the licensee.

1673 And the feedback at least I got from Pacific Gas and
1674 Electric was that they were going well, that they didn't --
1675 that there weren't big areas that they were going to have to
1676 do, that they could rely on previous decisions that the NRC
1677 made in this new submittal, et cetera. So that is part of
1678 why I am feeling reasonably encouraged.

1679 You know, I am not Pollyannaish. You know, I don't want
1680 the staff to -- and we shouldn't regulate to, you know, eight
1681 decimal places when one or zero will do for a reasonable

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1682 assurance of adequate protection. So --

1683 *Mr. Walberg. Well, the regulated, of course, in
1684 responding to you, doesn't want any more upheaval --

1685 *Mr. Hanson. Right.

1686 *Mr. Walberg. -- and may temper what they say.

1687 But I guess I am asking more about future, how involved
1688 -- and I guess I could -- Mr. Wright, give me your thoughts
1689 on that so I feel more confident that the Commission will
1690 make sense of what should go forward, regardless of the good
1691 staff.

1692 *Mr. Wright. Right.

1693 *Mr. Walberg. What will you guys do?

1694 *Mr. Wright. Right. So I am -- quickly, on two issues.
1695 One, you are talking about Diablo. I think we missed a huge
1696 opportunity right there to be transformative, innovative,
1697 doing something new and novel, because it could happen that
1698 way, it could have happened, right? And we would have
1699 probably given the licensee a little bit more time, I guess,
1700 and -- to get things done. But we have kind of put them up
1701 against it a little bit. So things have got to go right,
1702 going forward. And I know they are engaged, and I think that

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1703 staff is on top of that, and I am following that not just
1704 with staff, but also with the licensee.

1705 And with Palisades, I think that approach has been
1706 different from the start. Holtec is -- I have talked with
1707 them. I have talked with staff, as well. The engagement
1708 process there was very early, and it has been going on. They
1709 have been very transparent with each other, and everybody now
1710 -- I get the sense that everybody knows what is required, who
1711 has got to do what, and by what time they have got to get it
1712 done. So I feel better about that.

1713 *Mr. Walberg. Well, my time has expired, but I think
1714 warp speed ideas need to take place. We know what we are
1715 doing. Continue upgrades, but let's get her done.

1716 I yield back.

1717 *Mr. Duncan. The gentleman yields back. I will go to
1718 Ms. Matsui for five minutes.

1719 *Ms. Matsui. Thank you very much, Mr. Chairman, and I
1720 want to welcome all the commissioners here today. It is
1721 great to see you all.

1722 You know, while many of my colleagues are focused on the
1723 future of nuclear power, my district encompassing the

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1724 Sacramento region continues to grapple with the past. The
1725 Rancho Seco Nuclear Power Plant in my district closed over 30
1726 years ago, but the site is still acting as a temporary
1727 storage site for spent nuclear fuel.

1728 More than 88,000 tons of spent nuclear fuel are
1729 currently stranded at current and former reactor sites around
1730 the country. This material is a burden on local utilities
1731 like the Sacramento Municipal Utility District, and it
1732 prevents long-closed nuclear plants from being redeveloped
1733 and used for other purposes.

1734 I support nuclear energy as an important source of zero-
1735 carbon energy, but we must address the waste question. I
1736 believe the first step is to build a consolidated interim
1737 storage site. According to a 2021 GAO report on spent
1738 nuclear fuel, nearly all of the experts interviewed cited the
1739 advantages of consolidated interim storage, including cost
1740 savings.

1741 Now, advanced nuclear reactor designs and small modular
1742 reactors have many potential advantages over the current
1743 nuclear fleet. However, new nuclear plants will continue to
1744 produce hazardous wastes. Chair Hanson, can you briefly

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1745 explain how spent fuel and other radioactive waste produced
1746 by these new reactors would differ from the current
1747 generation of reactors?

1748 *Mr. Hanson. Thank you, Congresswoman Matsui.

1749 It is really going to depend on the technology. So in
1750 some cases, we are talking about smaller light water
1751 reactors, in which case the fuel is going to be very similar
1752 to what we have seen so far. In other cases, there are some
1753 new ceramic fuel fabrications. Think of ping pong ball sized
1754 or billiard ball sized elements of nuclear fuel that will
1755 require, you know, different storage configurations or
1756 security configurations, as well.

1757 In many cases we are talking about high-assay, low-
1758 enriched uranium, and so we are talking about longer burn-up
1759 times, and so there may be some additional heat time that
1760 will potentially change the storage requirements.

1761 *Ms. Matsui. Okay. But we still have the waste
1762 question here, and especially if we are going to start
1763 building new nuclear power plants. And the status quo can't
1764 continue indefinitely.

1765 The NRC has reviewed at least 4 consolidated storage

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1766 sites over the last 30 years, and we are not any closer to
1767 actually building a consolidated storage facility. This is
1768 due in large part to the failure of Congress to pursue a
1769 consent-based siting process for consolidated storage
1770 facilities.

1771 Whether it is a Federal or private-sector use, community
1772 support will be essential to successfully building a
1773 consolidated storage site. That is why I am glad to see the
1774 Biden Administration's efforts to develop a consent-based
1775 approach to siting consolidated spent fuel storage. I have
1776 secured funding for these efforts in each of the last 3
1777 years, and look forward to working to secure funding for this
1778 crucial program in fiscal year 2024.

1779 Chair Hanson, my understanding is that there is
1780 currently no requirement for storage license applicants to
1781 have community support. But according to the standard review
1782 plan for dry storage facilities, applicants must demonstrate
1783 financial feasibility. Isn't that correct?

1784 *Mr. Hanson. That is correct. They must demonstrate
1785 the --

1786 *Ms. Matsui. Okay.

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1787 *Mr. Hanson. -- financial capability of --

1788 *Ms. Matsui. So applicants need to demonstrate this
1789 financial feasibility because otherwise, reviewing the
1790 application would be a waste of staff time. Similarly,
1791 community support is clearly a very important element in
1792 determining feasibility, is it not?

1793 *Mr. Hanson. We are focused fully on the safety
1794 aspects, and the financial capability is how that pertains to
1795 the safety of the facility.

1796 *Ms. Matsui. Okay. So community support is actually a
1797 very important element, right?

1798 *Mr. Hanson. It is important, but it is not an area in
1799 which we are directly involved.

1800 *Ms. Matsui. Okay. I want to make clear that I support
1801 the NRC's authority to license private-sector storage sites.
1802 These sites are safe and cost effective. But regardless of
1803 whether it is Federal or private-sector sites, we must pursue
1804 a consent-based siting process for spent fuel storage, and I
1805 believe it is time for Congress to authorize a consent-based
1806 siting process.

1807 Now, the NRC is also responsible for regulating the

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1808 transport of nuclear fuels, nuclear materials, and waste.

1809 One of the concerns that is commonly raised regarding the

1810 development of a consolidated storage site is that the

1811 transport of radioactive material poses new safety risks.

1812 Chair Hanson, to what degree is spent nuclear fuel

1813 already transported around the country?

1814 *Mr. Hanson. Yes, so spent nuclear fuel is already

1815 transported around the country by the Department of Energy,

1816 by the Navy, et cetera, has been safely for decades. We

1817 recently undertook a readiness review for the commercial --

1818 the transport of commercial spent fuel, and we believe our

1819 regulations and policies and procedures are are adequate to

1820 ensure the safety of those operations.

1821 *Ms. Matsui. So you are confident that we can safely

1822 transport spent fuel and other radioactive waste?

1823 *Mr. Hanson. Yes, ma'am.

1824 *Ms. Matsui. From reactor sites to the consolidated

1825 storage facility?

1826 *Mr. Hanson. Yes, ma'am.

1827 *Ms. Matsui. Okay, Mr. Chairman, I yield back. Thank

1828 you.

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1829 *Mr. Duncan. The gentlelady yields back. I now go to
1830 the chair of the environmental subcommittee, Mr. Johnson, for
1831 five minutes.

1832 *Mr. Johnson. Thank you, Mr. Chairman, and thanks to
1833 you folks, the NRC commissioners, for being with us today.
1834 This is an important hearing, and this is going to inform us.
1835 And I know I and others on this committee want to legislate
1836 in this space, so I am looking forward to getting some of
1837 your thoughts today as we go through this hearing.

1838 I am planning on reintroducing my Strengthening American
1839 Nuclear Competitiveness Act in the coming weeks, and the
1840 legislation will require the Nuclear Regulatory Commission,
1841 you folks, to present several reports to Congress. So first
1842 I want to go to Commissioner Caputo.

1843 You mentioned in your testimony that you want the NRC to
1844 innovate how it accomplishes its mission. My legislation
1845 would ask the NRC to issue a report on innovative non-
1846 electric uses of advanced nuclear technology, or small
1847 modular reactors in -- perhaps in energy-intensive
1848 manufacturing and other applications. Do you believe NRC is
1849 equipped to study these technologies for future licensing,

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1850 and do you support the NRC having a role here?

1851 *Ms. Caputo. I believe it is very appropriate for us to
1852 study the nature of how process heat, as it is generated in
1853 the plant, would ultimately be used within the bounds of how
1854 it impacts safety. So --

1855 *Mr. Johnson. But are you equipped to do that studying,
1856 do you think?

1857 *Ms. Caputo. For the safety review?

1858 *Mr. Johnson. Yes.

1859 *Ms. Caputo. Yes, indeed.

1860 *Mr. Johnson. Okay, all right. What about you,
1861 Chairman Hanson?

1862 *Mr. Hanson. Yes, I believe we are well equipped to
1863 evaluate the non-power applications of nuclear power and the
1864 safety on that.

1865 *Mr. Johnson. Okay, all right. Well, next I want to
1866 touch on another part of my legislation.

1867 I think we all can agree here today that we are not
1868 interested in inhibiting investment in nuclear technology
1869 here at home; we want and need to strengthen the fleet. My
1870 bill would lift the Atomic Energy Act's outdated ban on

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1871 foreign investment and control from entities in allied,
1872 friendly nations. This has at times proven to be a barrier
1873 to further nuclear development here in the United States.

1874 So, Chairman Hanson, do you and the NRC have a position
1875 on this?

1876 *Mr. Hanson. The Commission hasn't yet taken a position
1877 on this. I can tell you I have very close relationships with
1878 the regulators in a lot of the friendly countries that you
1879 identify in your bill, Congressman, and I think there is a
1880 real opportunity there to work more closely together.

1881 *Mr. Johnson. Do you think it is appropriate to
1882 continue this ban? Do you have an opinion on that, or should
1883 we consider changes?

1884 *Mr. Hanson. The Commission hasn't really taken a
1885 position on this, as you know. But I can tell you certainly
1886 that, since the invasion of Ukraine, I have -- my
1887 interactions with my friendly, like-minded countries on all
1888 aspects of the nuclear fuel cycle have increased
1889 significantly about how we can cooperatively work together,
1890 reduce international regulatory barriers, et cetera, to
1891 integration of the global nuclear supply chain along the

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1892 lines that you propose.

1893 *Mr. Johnson. Okay, all right. Next I want to pivot to
1894 keeping our American innovators competitive overseas.

1895 You mentioned the war in Ukraine. You know, we have
1896 seen an increased interest overseas in the security and
1897 reliability of nuclear energy. Ideally, these new reactors
1898 are U.S. designs. I am encouraged by recent announcements in
1899 Poland and Romania. Importantly, the designs that these
1900 countries are interested in building are either licensed and
1901 operating or certified by the NRC. We are talking about
1902 Westinghouse, AP1000, or Nuscale.

1903 Chairman Hanson, how can the NRC help other regulators
1904 understand U.S. technologies and licensing decisions to spur
1905 global deployments?

1906 *Mr. Hanson. Yes, thank you. We are doing this
1907 literally as we speak, Congressman.

1908 We have been -- we have had a 10-year relationship with
1909 our Polish regulatory counterparts. We have ramped up those
1910 interactions in the last two or three years. I know there
1911 were a lot of decisions -- a lot of factors that went into
1912 the decision to pick U.S. technology in Poland, but I think,

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1913 you know, the commitment on the part of the NRC to walk
1914 alongside and to help prepare that Polish regulator was
1915 certainly a factor.

1916 I think Commissioner Wright's visit to Romania last year
1917 helped cement that relationship, as well. Our work with the
1918 Canadians on the GE, Hitachi, BWX in the joint review we are
1919 performing there -- and also, the GE is looking at exporting
1920 that to Poland and other parts around the world also.

1921 *Mr. Johnson. Okay.

1922 *Mr. Hanson. I can tell you we have established now a
1923 civil nuclear cooperation agreement with Ghana, and I am
1924 headed there to work with their regulator here in just a few
1925 weeks.

1926 *Mr. Johnson. Okay, all right. Well, thank you very
1927 much, Mr. Chairman. I yield back.

1928 *Mr. Duncan. The gentleman yields back. We will now go
1929 to the Granite State, Mr. Tonko, for five minutes.

1930 *Mr. Tonko. Empire State, sir.

1931 *Mr. Duncan. Empire State.

1932 [Laughter.]

1933 *Mr. Duncan. Somebody mentioned granite to me the other

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1934 day about --

1935 [Laughter.]

1936 *Mr. Duncan. And that was just in my mind. My
1937 apologies to the State of New York, Mr. Tonko.

1938 *Mr. Tonko. Okay, New York appreciates you. Well,
1939 thank you, Chair, and thank you to Chair Hanson and the
1940 commissioners. I appreciate you being here this morning.

1941 Let me do a special shout out to Commissioner Baran:
1942 Welcome back to the committee.

1943 I have immense respect for the Navy's role in helping to
1944 develop the workforce that our civilian nuclear industry
1945 relies upon. Many of those sailors are trained on reactors
1946 in my district. But I believe our nation's engineering
1947 schools also have an important role to play -- RPI,
1948 Rensselaer Polytechnic Institute in Troy, in the 20th
1949 congressional district, is one such university. RPI and its
1950 students have been the beneficiaries of grants under the
1951 Commission's University Nuclear Leadership Program.

1952 So, Chair Hanson, can you discuss this program and its
1953 role in supporting nuclear engineering programs at our
1954 nation's research universities?

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1955 *Mr. Hanson. Thank you, Congressman.

1956 I think I am an enthusiastic supporter of the University
1957 Nuclear Leadership Program. We have supported over 2,900
1958 students since 2014. Almost 50 percent of those students
1959 have then gone on to pursue and obtain nuclear-related
1960 employment, where another 25 percent are still working on
1961 their Ph.D.s or their master's degrees. Part of that is our
1962 research grants that kind of support graduate students and
1963 professorships and so forth, and some of them are just direct
1964 fellowships and scholarships to students that then establish
1965 that relationship with the NRC.

1966 I have visited probably half-a-dozen universities so far
1967 in my tenure. I try and include those when I go and visit
1968 plants, and encourage students both in the nuclear field, but
1969 also in public service. And I think we are seeing some
1970 results there.

1971 *Mr. Tonko. That is great.

1972 And Mr. Chair, I noticed this program was zeroed-out in
1973 the President's budget request. Can you shed any light on
1974 that decision, and what you expect the future might look like
1975 for the program?

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1976 *Mr. Hanson. Yes. We are -- we usually have about a
1977 year of funding kind of ahead of where we are in any given
1978 year, historically, in order to meet the budget targets that
1979 we are given. We have not requested funding. Congress will
1980 then give us that funding in advance, and we are happy to
1981 receive it, and happy to move forward in implementing that
1982 program.

1983 *Mr. Tonko. Okay. I believe every commissioner
1984 recognizes nuclear energy's role in addressing climate
1985 change, but we know these reactors exist in environments that
1986 are increasingly stressed by the impacts of climate change,
1987 including increasing numbers of extreme weather events and
1988 severe droughts.

1989 Mr. Chair, how is the Commission working to ensure that
1990 the existing fleet is more resilient to the impacts of
1991 climate change?

1992 *Mr. Hanson. Yes, thank you.

1993 We have a -- within the NRC we have a program on the
1994 assessment of natural hazards information that, basically, is
1995 an ongoing evaluation of information surrounding the entire
1996 fleet about the environment, about the impacts of climate,

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1997 you know, changing climate, wildfires, et cetera, and the
1998 resilience.

1999 I would say that our plants, as we see, I think every
2000 year in hurricane season in this country -- and due to both
2001 operator, you know, cautious operator action, as well as NRC
2002 oversight are -- have been incredibly resilient to weather-
2003 related impacts.

2004 *Mr. Tonko. Do any other commissioners choose to weigh
2005 in on that whole concept? Are our reactors adequately
2006 updating their operations and response plans to reflect
2007 climate change concerns?

2008 *Mr. Baran. Yes, I would just add, you know, one of the
2009 steps we took post-Fukushima was this program that the chair
2010 talked about. You know, there was a time when NRC was much
2011 more reactive. You know, there would be new studies out
2012 there, whether it be on earthquakes or flooding or climate-
2013 related changes. And unless someone kind of brought that to
2014 us, we weren't -- the staff wasn't necessarily conducting
2015 those kinds of reviews.

2016 Now we have something that is much more proactive. We
2017 are going out there, the staff is making sure they are up on

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2018 the latest science in these areas. They are attending
2019 academic conferences. They are talking to the Federal
2020 agencies with responsibilities so that we are keeping a much
2021 closer eye on that, I think, than historically the agency
2022 has.

2023 *Mr. Tonko. All right, thank you.

2024 And as Congress debates and continues to debate
2025 permitting reform, it has become even more clear that
2026 successful energy projects must be built based on early and
2027 robust community engagement. So, Mr. Chair, what do you see
2028 as the role for engagement with communities that host
2029 reactors, and how does the Commission help to ensure license
2030 holders are good partners with their hosts?

2031 *Mr. Hanson. Thank you.

2032 For all of our -- the reactor applications, as well as
2033 the pre-application engagement activities, the vast majority
2034 of those meetings are held in public. They are available for
2035 folks to watch online. And then, when we actually get into
2036 the application stage, and we need to perform the
2037 environmental review, we will hold numerous public meetings,
2038 opportunities for the public to come and understand the

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2039 technology, how we are approaching that review, and also then
2040 the -- how we are approaching the environmental assessment
2041 for that.

2042 I know we can always do better in terms of explaining
2043 our processes, how we are reaching our decisions, et cetera,
2044 but we have got the basic -- I think the bones, I think, are
2045 good and -- on the processes that we have.

2046 *Mr. Tonko. Thank you.

2047 With that, Mr. Chair, I yield back.

2048 *Mr. Duncan. The Empire State yields back.

2049 [Laughter.]

2050 *Mr. Duncan. And I will now go to the crossroads of
2051 America, Mr. Bucshon for five minutes.

2052 *Mr. Bucshon. You got that right. It is the crossroads
2053 of America, Indiana. So thank you, Mr. Chairman, thanks to
2054 the commissioners for being here.

2055 And recently the State of Indiana shared its intent to
2056 join the NRC's Agreement State Program. This program
2057 empowers individual states to assume NRC regulatory authority
2058 for specific categories of nuclear materials, relinquishing
2059 some of the regulatory load off of the NRC. So maybe I will

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2060 start with Mr. Crowell here.

2061 Commissioner Crowell, could you discuss the benefits of
2062 this program for both the NRC and for the agreement states?

2063 *Mr. Crowell. Thank you for the question. So I think
2064 the more states that become agreement states, the more robust
2065 that Agreement State Program overall becomes, and the burden
2066 somewhat lessens on the NRC from having to do that directly.
2067 We can do it through oversight, and it should lower costs
2068 over time, as well.

2069 I also think the benefit of the Agreement State Program
2070 is that it helps create an understanding and familiarity with
2071 various aspects of nuclear power in those states, and that
2072 can help with broader public engagement and support.

2073 *Mr. Bucshon. And can you maybe briefly discuss the
2074 timeline and process for a state like Indiana to join the
2075 program?

2076 *Mr. Crowell. I would actually defer to the chair on
2077 that.

2078 *Mr. Bucshon. All right, Chairman Hanson.

2079 *Mr. Hanson. Sure, Congressman, I would be happy to.
2080 Typically, it is about a four-year process.

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2081 *Mr. Bucshon. Okay.

2082 *Mr. Hanson. We work closely with them. There is a lot
2083 of training, and a lot of back and forth. We really walk
2084 alongside the state to get them ready to take over that
2085 responsibility.

2086 *Mr. Bucshon. Great, and anyone can add. Do you think
2087 that the Agreement State Program plays a role in supporting
2088 public engagement efforts that foster public support for the
2089 safe and responsible deployment of nuclear technologies?

2090 *Mr. Hanson. I certainly do. I agree with Commissioner
2091 Crowell. Having folks -- you know, government often works
2092 best at the level closest to the populace, and I think this
2093 is a good example of that.

2094 *Mr. Bucshon. Yes, I think you are right. I mean, we
2095 need that. It is very important, right, for all the work
2096 that we are -- all of us are trying to do here to have public
2097 sentiment behind us. As Members of the Congress, of course,
2098 that is the most critical piece of this equation.

2099 Yes, Commissioner Wright.

2100 *Mr. Wright. Congressman, just -- I am a big fan of the
2101 Agreement State Program, and I have been in the presence of

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2102 the people from Indiana at some of the meetings, the
2103 Organization of Agreement States. We are willing to engage,
2104 so if we need to come and meet with somebody, we are willing
2105 to do that. And I would commit that I would go myself if you
2106 need me to.

2107 *Mr. Bucshon. Sure, thank you very much.

2108 The Nuclear Energy Innovation and Modernization Act
2109 directs the Commission to develop a risk-informed,
2110 technology-neutral framework for advanced reactors. And I
2111 had another hearing in Health, so I may have missed some of
2112 this. We have already heard some comments on that, of
2113 course, but NRC is supposed to provide reasonable assurance
2114 of adequate safety of nuclear reactors.

2115 Commissioner Caputo, can you speak to what risk-informed
2116 means, and how that works in the context of reasonable
2117 assurance of adequate safety standard?

2118 *Ms. Caputo. Risk informing fundamentally means using
2119 risk insights together with other considerations to focus
2120 safety reviews on the items that are the most significant to
2121 safety. So it is an attempt to sort of narrow what our focus
2122 is to the areas where safety regulation creates the biggest

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2123 safety benefits. So by narrowing that, it is a hope of
2124 limiting the regulatory burden to where things are truly
2125 safety significant.

2126 *Mr. Bucshon. Yes. I also want to say I was recently
2127 in Poland also with the chairwoman, and we were talking about
2128 this issue, and we do have competition. They are talking
2129 with the French, as you know. So it is very important for
2130 the United States and North America to make sure that we are
2131 the -- we don't have things, processes in place that limit
2132 our ability to effectively compete. And part of that is
2133 cost, part of that is time, part of that is safety, other
2134 issues. So I just wanted -- I wanted to say that.

2135 And then, in closing, I -- the NRC doesn't regulate
2136 nuclear submarines, is that correct?

2137 *Mr. Hanson. That is correct, Congressman.

2138 *Mr. Bucshon. So I do find it -- and somebody mentioned
2139 this to me the other day, that -- if you have ever been on a
2140 nuclear submarine -- which I have, the USS Kentucky -- when
2141 it refueled and went out into the Pacific Ocean, it struck me
2142 that the person that dove the boat under the water was about
2143 22 years old. And the entire ship, including the commanding

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2144 officer -- the commanding officer, I think was about 33. So
2145 we have this big nuclear reactor in a nuclear submarine in
2146 the middle of the ocean, and we have -- literally, we have
2147 very strong, young people that are in charge.

2148 And so I just say that because I think we need to put
2149 that in context of the overall situation that we are in here,
2150 and that this can be done. I know it is different, but it
2151 can be done if there are strong programs in place, and we
2152 don't need all these barriers all the time.

2153 *Mr. Hanson. Yes.

2154 *Mr. Bucshon. Yes, Chairman, briefly.

2155 *Mr. Hanson. We are great beneficiaries of our Nuclear
2156 Navy program. About 25 percent of our workers are military
2157 veterans, and the vast majority of them from the Navy. And
2158 so that kind of experience and that kind of a strong
2159 experience, including our executive director of operations
2160 here behind me, Dan Dorman, in operating and working on
2161 nuclear submarines.

2162 *Mr. Bucshon. Yes. I yield back, Chairman.

2163 *Mr. Duncan. Not a single mishap in the United States
2164 Navy with regard to nuclear.

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2165 So I now go to the Granite State for real.

2166 [Laughter.]

2167 *Mr. Duncan. Ms. Kuster is recognized for five minutes.

2168 *Ms. Kuster. Thank you, Chairman Duncan and Ranking
2169 Member DeGette, for holding this important hearing. And I
2170 want to thank all five NRC commissioners for taking the time
2171 to join us.

2172 There are 54 nuclear power plants in the United States,
2173 and these power plants provide, as you have heard today,
2174 nearly 20 percent of the electricity generated and 50 percent
2175 of the non-carbon electricity. The nuclear power generated
2176 in the United States displaces the equivalent of roughly 500
2177 coal plants. But unlike coal or natural gas, nuclear energy
2178 is carbon free.

2179 Given the significant role nuclear energy plays in our
2180 energy system and our energy future, the footprint of nuclear
2181 power plants across the nation, most Americans would be
2182 reassured to learn about the Nuclear Regulatory Commission,
2183 or NRC. The NRC exists for one purpose: to ensure nuclear
2184 power plants in the United States operate safely. And I want
2185 to underscore that this is an incredibly important

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2186 responsibility.

2187 Chairman Hanson, the NRC currently has a full contingent
2188 of five commissioners. Can you explain how a full contingent
2189 of five commissioners helps the NRC function properly?

2190 *Mr. Hanson. Thank you, Congresswoman.

2191 I think, fundamentally, having five people with
2192 differing views but who have very professional and collegial
2193 relationships actually results in stronger decision-making
2194 and policy-making on the part of the agency.

2195 It really -- because of, I think, as the chairman
2196 mentioned, the urgency of the issues in front of us, we are
2197 able to kind of divide and conquer on a number of things,
2198 whether it is Commissioner Caputo focusing on effective
2199 performance measures, or Commissioner Baran on policy
2200 statements, or other things that I have the opportunity to
2201 lead on. I think, given the amount of work in front of us,
2202 it is more important than ever that we have a fully -- a full
2203 complement of commissioners.

2204 *Ms. Kuster. Well, thank you. And I might note
2205 Commissioner Baran's term expires at the end of the month,
2206 and his renomination is currently pending before the Senate.

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2207 I am very supportive of Commissioner Baran, and I hope that
2208 the Senate acts quickly to confirm him.

2209 I want to zero in on the impact of nuclear energy in my
2210 state, New Hampshire, the Granite State. Nuclear energy is
2211 the largest power generation source in New Hampshire. All
2212 the nuclear electricity generated in New Hampshire comes from
2213 the Seabrook Nuclear Power Station. And while Seabrook is a
2214 key piece of infrastructure in my state, it also faces some
2215 significant challenges.

2216 There is an ongoing Alkali Silica Reaction, ASR, at
2217 Seabrook that is slowly causing cracking throughout the
2218 facility. Monitoring the ongoing ASR is critical to ensuring
2219 the integrity and the safety of Seabrook and my constituents,
2220 my colleague Chris Pappas, and our colleagues in Maine, Jared
2221 Golden and Chellie Pingree.

2222 Thankfully, the NRC has two resident inspectors at
2223 Seabrook, whose full-time job is to walk the plant and ensure
2224 its operating safety. The two resident inspectors, Chris
2225 Newport and Travis Daun, are unsung heroes, and I want to
2226 acknowledge how important their work is for keeping the
2227 public safe. They literally have spent thousands of hours

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2228 per year inspecting the plant and ensuring that it is safe.

2229 Chairman Hanson and Commissioner Baran, both of you have
2230 visited Seabrook. Can you briefly describe the role that
2231 Chris and Travis play, and the benefits of having NRC
2232 personnel on site at our nuclear power plants around the
2233 country?

2234 *Mr. Hanson. Thank you, Congresswoman. Well,
2235 hopefully, after this hearing they are not completely unsung.

2236 [Laughter.]

2237 *Mr. Hanson. I think very highly of both Chris and
2238 Travis, as well as the rest of our resident inspectors who
2239 walk around these plants every day.

2240 And with regard to the Alkali Silica Reaction, that is
2241 actually a phenomenon that NRC staff discovered at Seabrook,
2242 and we have been keeping track of that ever since, and
2243 bringing the expertise of the agency, and working with the
2244 licensee to bear on that.

2245 And I make it a point -- and I know my colleagues do,
2246 too -- to meet and spend some quality time with our resident
2247 inspectors when we go visit plants, understand both in more
2248 depth the situation at that plant, but also how our program

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2249 is working for them. It involves maybe more moves for them
2250 around the country because of the rotations that we require,
2251 often in kind of far-flung places. Seabrook isn't
2252 particularly far flung --

2253 *Ms. Kuster. It happens to be beautiful, the sea coast
2254 of New Hampshire.

2255 *Mr. Hanson. It is beautiful, but we do have plants in
2256 some far-flung places that can make that more difficult.

2257 So, I don't know, Commissioner Baran, if you want to add
2258 anything.

2259 *Mr. Baran. Well, thanks. I agree. I think our
2260 resident inspectors at Seabrook are terrific. And, you know,
2261 they are closely tracking the Alkali Silica Reaction issues,
2262 but all the more traditional safety and security issues, as
2263 well.

2264 I think one of the things that is so great about that
2265 team is they are focused on being transparent about sharing
2266 their findings with the community so that folks understand
2267 what is going on and what NRC is doing there. And when I
2268 visited in the run-up to that visit to Seabrook, I talked to
2269 C10, one of the community organizations that is very engaged,

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2270 and I heard from them that our residents are really building,
2271 you know, trust and confidence. And that is really good to
2272 hear. And in some ways, I think that team at Seabrook is
2273 really the model for what that relationship should look like
2274 between --

2275 *Ms. Kuster. I hate to cut you off, my time is up. But
2276 thank you. We will leave it at there, the model.

2277 *Mr. Baran. Thank you.

2278 *Ms. Kuster. Thank you very much, and I yield back.

2279 *Mr. Duncan. I thank the gentlelady, and I will now go
2280 to the vice chair of the Subcommittee on Energy, Mr. Curtis,
2281 for five minutes.

2282 *Mr. Curtis. Thank you, Mr. Chairman. I was hoping you
2283 would call Utah the crossroads of the West.

2284 *Mr. Duncan. You are the crossroads of the West.

2285 [Laughter.]

2286 *Mr. Curtis. Listen, I am really delighted to be here,
2287 and I have stayed here through this whole hearing. I think
2288 this is incredibly important. I am not sure in recent time
2289 that we have had any more five important people in front of
2290 us for the future of our energy security and our climate and

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2291 energy goals here in the United States and around the world.

2292 I want to begin by giving a shout out to a couple of
2293 Utah projects. The PacifiCorp project is very exciting,
2294 although that will ultimately be in Wyoming. I am hoping
2295 their additional plans will expand in Utah, and I am just
2296 really pleased to see the progress that they are making.

2297 Also, a shout out to Utah Municipal Power Authority --
2298 UAMPS, excuse me, UAMPS -- and you well know the amount of
2299 time and the work that they have put into that small nuclear
2300 reactor.

2301 I think that, as I look at 2050, I see our energy
2302 sources being affordable, reliable, and clean, and nuclear,
2303 you know, hits it out of the park on reliability and on
2304 clean. But currently, affordable is problematic, and a lot
2305 of that has to do, of course, with the delay in time period,
2306 and uncertainty in licensing.

2307 And we have talked a lot today with my colleagues about
2308 speed, and I have heard a lot of positive things from you
2309 about speed and innovation. But I want to make sure that we
2310 are all kind of on the same page, because I am thinking we
2311 are not talking about doubling speed, we are not talking

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2312 about tripling speed. I am thinking we are talking about,
2313 between now and 2050, hundreds of nuclear facilities here in
2314 the United States, maybe thousands of nuclear facilities here
2315 in the United States. And I just want to get your reaction.

2316 Are there behind-closed-door conversations of, like, no,
2317 this isn't a little bit faster, this is not necessarily even
2318 faster, this is figuring out how to permit hundreds and
2319 thousands of these facilities in the next couple of decades?

2320 *Mr. Hanson. Yes.

2321 *Mr. Curtis. Mr. --

2322 *Mr. Hanson. No, it -- thank you Mr. Vice Chairman. It
2323 is a great question, and it is a completely fair question.

2324 The key to a lot of this, I think, is going to be the
2325 standardization of the design. And I think for us, then, if
2326 we have a standardized design that is getting cranked out of
2327 a factory, we can go to that factory and say, "Yes, quality
2328 assurance is what it needs to be." Then all we are really
2329 doing is looking at site-specific requirements. And I think
2330 that -- you know, external hazards and --

2331 *Mr. Curtis. Sure.

2332 *Mr. Hanson. -- and some emergency planning and that

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2333 kind of thing, I think that review can be -- my thought --
2334 and again, I haven't consulted my colleagues -- I think it
2335 can be less than a year when we get those standardized
2336 designs that are going to -- kind of getting pushed out --

2337 *Mr. Curtis. I am really pleased to hear that, and I
2338 think that is a good message for the industry, as well.

2339 And yet, at the same time, the industry is in this
2340 interesting place where SMRs are getting standardized, but,
2341 like, the Pacificorp project, there are also a lot of other
2342 tentacles trying out new things, which we want to encourage,
2343 as well.

2344 Let me pivot just to -- a minute to the concept of
2345 investor confidence. I know it is not your job to promote
2346 technology, but many in the industry, investors, are watching
2347 what is happening. What would you say, Mr. Hanson, as the
2348 chair?

2349 I know you would all do so well, but you are the chair
2350 for the group. What would you say to industry about how we
2351 can give them the confidence they need to make the
2352 investments that they are going to need to this, and not be
2353 scared about the process?

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2354 *Mr. Hanson. Yes, certainly, I agree that there is a
2355 need to kind of demystify the regulatory process here, in
2356 part for the regulatory community. And I have had some
2357 conversations where I have volunteered to do that where
2358 necessary.

2359 But I think we can point to some things in terms of what
2360 we have done. That is, the lessons we have learned from
2361 previous reviews, and whether that is Vogtle or NuScale, but
2362 also then, you know, what we did on Kairos, that advanced
2363 reactor technology, and also then the Commission's efforts to
2364 really roll up its sleeves and focus in on this advanced
2365 reactor rulemaking to make sure that that is predictable,
2366 efficient, et cetera, while upholding our safety standards.

2367 *Mr. Curtis. Sure. I am a little concerned, too, that
2368 if we don't have the type of domestic program that we want to
2369 have, we won't have the influence internationally that we
2370 would like to have with international standards and safety
2371 standards. Can you speak to what you are doing, and what the
2372 Commission is doing to make sure we have influence overseas?

2373 *Mr. Hanson. Yes, thank you.

2374 Well, first of all, we are heavily engaged at the IAEA

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2375 to make sure that our interests are advanced and protected in
2376 that international multi-lateral forum, but then also
2377 engaging, you know, with our bilateral partners, whether that
2378 is in Poland, or Romania, the Czech Republic. I have had
2379 numerous discussions with -- and they are a very close ally.

2380 But also then, even some folks that we are competing
2381 with, in terms of the French, that we make sure that the
2382 standards are high, you know, but that we are approaching it
2383 with the right kind of flexibility.

2384 *Mr. Curtis. And I am, unfortunately, out of time. I
2385 would like to just thank you and all five of you for being
2386 here today, and for the chair and the ranking member for this
2387 very, very important conversation.

2388 *Mr. Duncan. I appreciate the gentleman. I now go to
2389 Ms. Schrier for five minutes.

2390 *Ms. Schrier. Thank you, Mr. Chairman, and thank you to
2391 all of our witnesses for being here today.

2392 And I would say thank you to Mr. Curtis, as well. I
2393 thought that question line was really excellent.

2394 In my home state of Washington we have adopted a very
2395 ambitious goal to completely eliminate carbon emissions from

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2396 our energy portfolio by 2045, which means we need to
2397 construct new, emissions-free capacity resources like
2398 advanced nuclear with haste. And this is in addition to wind
2399 and solar and the abundant hydropower that we enjoy now as
2400 base load. And by expanding our nuclear portfolio, we will
2401 be able to better and more smoothly integrate other
2402 renewables like wind and solar into our grid, and reduce
2403 emissions.

2404 Commissioner Caputo, I was struck by your testimony when
2405 you acknowledged the need for NRC to "innovate with an eye
2406 toward the future," because that is what we are looking for
2407 in Washington State. And you acknowledge that NRC must
2408 follow congressional intent to develop -- again, quote -- "a
2409 framework that is truly risk-informed, reflecting the
2410 inherent safety found in advanced designs.'" And I think
2411 that is critical, and I think it also pertains to Mr.
2412 Curtis's line of questioning about how much more quickly we
2413 should be able to do this.

2414 I was wondering if you could expand a little bit on this
2415 point, and how you are taking into account the difference in
2416 risk, maybe what are your -- some of your challenges, how can

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2417 we help?

2418 *Ms. Caputo. Well, when the Commission directed the
2419 staff to proceed with the rulemaking, one of the elements of
2420 that direction was to direct the staff to apply the same
2421 safety standards as the existing fleet. By having advanced
2422 reactors meet that same level of safety, it allows those
2423 reactors through the technology to take credit for aspects of
2424 their design that may provide inherent safety, just based on
2425 the technology itself. And I think that is perhaps the most
2426 important aspect that we need to focus on in part 53.

2427 *Ms. Schrier. Okay, thank you. I am going to pivot to
2428 another question also about Washington State, which is
2429 Hanford.

2430 And I know that this is primarily a Department of Energy
2431 issue, but since I have your expertise in front of me, I
2432 would love to know if any of you have reservations, technical
2433 reservations, about the Department of Energy reclassifying
2434 some of its low-activity waste to something other than high-
2435 level waste, because it would change how we can dispose of
2436 that. If it is a low level, it can be disposed of in a
2437 grouting process, and a high level needs to be -- it needs to

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2438 go through vitrification, which is far more complex. I am
2439 just wondering if any of you have any comments about that
2440 safety.

2441 *Mr. Hanson. I admit, Congresswoman, I am loathe to
2442 wade into those waters, but I will note that --

2443 *Ms. Schrier. So am I.

2444 *Mr. Hanson. But the classification system that we have
2445 in this country is largely based on origin and not based on
2446 radioactivity. So sometimes high-level waste, regardless of
2447 the activity level, is high-level waste because it is spent
2448 nuclear fuel or originates from reprocessing operations.

2449 *Ms. Schrier. Okay. Thank you for that clarification.
2450 Does anybody else want to wade into this?

2451 *Ms. Caputo. I agree with the chair. It is primarily
2452 classified by the origin. So the characteristics of the
2453 waste itself may be substantially different, based on where
2454 it is -- not based on where it is classified. So if there is
2455 a reclassification done to more reflect the nature of the
2456 waste itself, then there may be a scientific basis for doing
2457 that, rather than hewing to the historical classification
2458 based on origin.

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2459 *Ms. Schrier. Thank you. That is really interesting
2460 and really reassuring. And that is why I asked you that
2461 question. Thank you very much.

2462 And I will yield back.

2463 *Mr. Duncan. The gentlelady yields back. We will stay
2464 in the Evergreen State, and it is my distinct pleasure to
2465 recognize the chairwoman of the full committee, Mrs. McMorris
2466 Rodgers, for five minutes.

2467 *The Chair. Thank you, Mr. Chairman.

2468 Chairman Duncan and I, along with Ranking Members
2469 DeGette and Pallone, wrote together to a range of nuclear
2470 stakeholders in April seeking information about NRC licensing
2471 and oversight activities. And we wanted to "identify what
2472 makes sense for a modern regulator to assure efficient,
2473 predictable regulation that provides for a robust and growing
2474 nuclear industry.'" And this is keeping with the goals of
2475 the Atomic Energy Act.

2476 Chairman Hanson and Commissioners, an indisputable part
2477 of your mission is to protect public health and safety.
2478 However, your authorities derive from the Atomic Energy Act,
2479 which has broader goals. I would like to ask each of you,

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2480 beginning with the chairman, to describe how you would define
2481 NRC success as a regulator in the context of the policy to
2482 provide for a robust and growing industry.

2483 Mr. Chairman.

2484 *Mr. Hanson. Thank you, Chairwoman Rodgers, for that
2485 question.

2486 Our success, I think -- I met with a utility executive
2487 recently that described the NRC as a tough regulator, but a
2488 fair regulator. I took that as a point of pride. And I
2489 think we can always be improving the efficiency of that, and
2490 the predictability of our regulations. And I think that is
2491 -- I think you are seeing an emphasis on that across the
2492 Commission as we move forward, and an adaptability and
2493 creativity in achieving those aims while protecting public
2494 health and safety.

2495 *The Chair. Okay.

2496 *Mr. Baran. Yes, I think we need to do two things at
2497 the same time: one, maintain our focus on public health and
2498 safety; and two, have an effective, efficient, and timely
2499 licensing process. Both of those things.

2500 *The Chair. Thank you.

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2501 *Mr. Wright. Thank you for the question, and I agree
2502 with what my colleagues are saying here. And I was present
2503 when I heard the comment, as well, about being a tough but
2504 fair regulator.

2505 But also I would say that we do a pretty poor job of
2506 talking about our successes, and how -- maybe the good things
2507 that we do, because -- and -- because I am a believer, if you
2508 don't tout your successes, you are going to be defined by
2509 your failures. So there are a lot of good things that are
2510 going on, but we certainly can do better.

2511 *Ms. Caputo. I think I will get passed back to a
2512 comment that Mr. Bucshon made which relates to naval
2513 submarines. When the Navy approves a submarine, it really is
2514 a dual mission, which is safety, but also to enable the
2515 mission. And our mission as a regulator is purely safety.

2516 So I think there is room there to consider a little more
2517 balanced approach because we are, as I said in my opening
2518 statement, gatekeepers to a nuclear future, and we need to, I
2519 think, focus on the fact that, while safety is our preeminent
2520 role, we do have a responsibility to ensure timely decision-
2521 making so that we can actually enable the safe development of

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2522 nuclear power.

2523 *The Chair. Thank you.

2524 *Mr. Crowell. And Congresswoman, I will just add that
2525 if -- while protecting public health and safety are the --
2526 you know, the primary goals and responsibility of the NRC, if
2527 we are meeting that mission but we are not doing so on a
2528 timeline that is commensurate with addressing reducing carbon
2529 emissions and enhancing energy security, then I don't think
2530 we are succeeding. I think we need to be doing both.

2531 *The Chair. Okay, thank you.

2532 To help set the Commission up for success, Congress
2533 enacted reforms in 2019 to update its fee schedule, and
2534 directed NRC to issue risk-informed regulations appropriate
2535 for advanced reactors.

2536 My understanding is the staff spent about two years
2537 putting together a proposal, the part 53 proposal, yet they
2538 have been informed time and time again that the new
2539 regulations that they were putting together ignored
2540 stakeholder input, and future applicants would not use the
2541 rule as it was proposed. And then staff chose to send a rule
2542 that they knew wouldn't work to the Commission to fix.

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2543 Something isn't right with that whole situation.

2544 Why is -- so I wanted to start with the chairman, and
2545 however time we have -- why is staff putting together rules
2546 that fail to comply with congressional direction?

2547 And what does this say about the staff working in
2548 service to the Atomic Energy Act?

2549 Mr. Chairman.

2550 *Mr. Hanson. Thank you. While I am certainly not going
2551 to endorse or agree with all the things that the staff sent,
2552 we asked them to put together that rule very quickly. And I
2553 think, as a result, it -- there is a high level of what I
2554 would call adjacency to our existing frameworks that are not
2555 necessarily conducive to the new technologies that are coming
2556 down the road --

2557 *The Chair. So quickly, two years and they ignored
2558 stakeholder input.

2559 *Mr. Hanson. Well, I think in some cases both the
2560 framework A and framework B were included and structured that
2561 way at the behest of stakeholders.

2562 *The Chair. Okay. More to follow.

2563 I yield back.

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2564 *Mr. Hanson. Happy to.

2565 *Mr. Duncan. You could add some extra time. You are
2566 the chairwoman.

2567 [Laughter.]

2568 *Mr. Duncan. I will now go to Florida, Ms. Castor, the
2569 Sunshine State, for five minutes.

2570 *Ms. Castor. Yes. Well, thank you, Mr. Chairman, for
2571 calling this hearing. It has been a good, bipartisan
2572 collaboration here.

2573 And I want to thank the NRC commissioners for your
2574 public service and being here today.

2575 If we are going to slash climate pollution with the
2576 urgency that is needed to avoid the worsening impacts and the
2577 escalating costs, we have got to rely more on this carbon-
2578 free energy source, nuclear power, that is consistent in its
2579 output over long periods of time.

2580 We have learned a lot over the past few years. There
2581 has been a shift in thinking because of the climate crisis.
2582 In fact, when I had the pleasure of chairing the House Select
2583 Committee on the Climate Crisis, we invited nuclear energy
2584 industry experts in to advise us and to help craft policies.

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2585 And it resulted in our action plan report that had a number
2586 of recommendations relating to nuclear power that were
2587 subsequently incorporated into the Bipartisan Infrastructure
2588 Law, the IRA, the CHIPS and Science Act.

2589 The Bipartisan Infrastructure Law provided \$6 billion
2590 for the Civil Nuclear Credit Program, funds that will help
2591 ensure that our already-existing fleet of nuclear reactors
2592 stays safe and competitive, and it also will save thousands
2593 of jobs over time.

2594 The Inflation Reduction Act created a tax credit of up
2595 to 1.8 cents per kilowatt hour for zero-emission nuclear
2596 energy, and provided the Department of Energy with \$700
2597 million to invest in increasing the availability of next-
2598 generation nuclear fuel for advanced reactors.

2599 And the President's proposed budget this year includes a
2600 \$1 billion investment in the NRC, including an 8 percent
2601 increase in nuclear reactor safety.

2602 Commissioner Baran, you highlighted this in your
2603 testimony. You said the urgency and scale of the challenge
2604 have led to a growing consensus that meeting ambitious
2605 climate and energy security goals will involve nuclear power,

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2606 including new reactors. The bipartisan infrastructure
2607 legislation and the IRA make large investments to drive this
2608 expansion, including the Clean Energy Production Tax Credit
2609 and funding for a domestic high-assay, low-enriched uranium
2610 supply chain. Few, if any, nuclear power plants are expected
2611 to close anytime soon.

2612 So when you think of life before these new Federal laws,
2613 if they hadn't happened, what would the picture look at --
2614 look like, Mr. Chairman, if you compare life before the
2615 infrastructure law, the IRA, CHIPS and Science, where would
2616 we be today?

2617 *Mr. Hanson. There are a lot of issues -- I call it a
2618 series of chicken-and-egg problems -- associated with the
2619 deployment of new nuclear. And certainly, the financing and
2620 the policy around those can be one of them. And certainly,
2621 NRC regulation, I recognize, is one, as well.

2622 For us, as regulators, we see a renewed interest in the
2623 continued operation of the existing fleet. So we are
2624 expecting both subsequent license renewal applications as a
2625 result of the law, as well as power uprate applications, and
2626 then also requests for evaluation of perhaps new fuel forms

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2627 so that these reactors can operate at potentially higher
2628 output levels, et cetera, to take full advantage of that and
2629 deliver more clean energy to the grid.

2630 *Ms. Castor. Commissioner Baran?

2631 *Mr. Baran. Yes, I think, in talking with our
2632 licensees, the utilities, you really see an almost immediate
2633 transformation in the way they were thinking about things.
2634 The price signals sent by the legislation were really
2635 significant.

2636 There were very few people talking about power uprates,
2637 those kinds of investments in the plant to get more
2638 electricity out of them, prior to the legislation; now there
2639 is a lot of talk about that.

2640 There was talk, obviously, about subsequent license
2641 renewal going from 60 to 80 at a lot of plants. Now it is,
2642 like, kind of near universal. I mean, the whole value
2643 proposition has changed enough that it was almost like a
2644 switch. I mean, you could just see the effect of it.

2645 When I was talking with Tennessee Valley Authority, you
2646 know, not that long ago, they were talking about one small
2647 modular reactor at the Clinch River site in Tennessee, then

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2648 it was four identical ones there. Then it was four and maybe
2649 they do four more at other sites, if that goes well. So it
2650 is -- it has really ramped up the interest. I mean, there is
2651 a real surge in interest now.

2652 *Ms. Castor. And Commissioner Wright?

2653 *Mr. Wright. I do not disagree with anything that my
2654 colleagues have said.

2655 I would also add that there is something else that could
2656 be taken advantage of, and that is through -- I believe it is
2657 NICA, where you could use monies that are funded through DoE
2658 that would come back to the Commission to help some of these
2659 small vendors that are trying to get moving, because they
2660 don't have deep pockets, right? And you could help identify
2661 issues that are maybe barriers that could be solved early and
2662 that would -- you know, again, it would save money on the
2663 licensee -- or the applicant's part, as well.

2664 *Ms. Castor. Great. Thank you very much.

2665 I am out of time. I yield back.

2666 *Mr. Duncan. The gentlelady's time has expired. I will
2667 go to Mrs. Lesko, who has the Palo Verde Nuclear Power Plant
2668 in her district.

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2669 You are recognized for five minutes.

2670 *Mrs. Lesko. Thank you, Mr. Chairman.

2671 Yesterday we had a hearing here discussing -- we
2672 discussed grid reliability and all of the different concerns
2673 there are from different government organizations about grid
2674 reliability, and that we are retiring baseload energy plants
2675 too fast and replacing them with intermittent energy. And so
2676 I do believe nuclear is part of the solution, so I thank you
2677 for your work in making sure our nuclear plants and plants are
2678 safe. My questions are for anyone that wants to weigh in.

2679 My first question regards -- says the NRC sends
2680 inspectors to the nuclear plants to inspect machinery and for
2681 safeguards. Nuclear plants like the one in Arizona have
2682 full-time government inspectors that stay on site. I have
2683 been told that, in addition to these on-site inspectors, NRC
2684 sends out additional inspectors that the nuclear plants pay
2685 for, and that these inspectors may be duplicating some of the
2686 work that the on-site inspectors do.

2687 In addition, I have been told that during COVID, remote
2688 technology was used to conduct -- you know, sometimes used --
2689 to conduct the inspections.

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2690 And so my question is do you think it would make sense
2691 to better utilize the on-site inspectors, and use remote
2692 technology for some of the inspections?

2693 *Mr. Hanson. Yes, thank you, Congresswoman. We learned
2694 a lot during COVID about how to better use technology, and
2695 everything from laptops and, you know, iPads, and this sort
2696 of thing to help conduct inspections. I hope that there is
2697 not a lot of duplication. I will dive into that for you, and
2698 be happy to get back to you about the duplication that our
2699 on-site resident inspectors are conducting, and then our
2700 engineering inspectors.

2701 We recently made a change at the Commission to reduce
2702 the frequency of engineering inspections, actually, from
2703 three years to four years to kind of account for the reduced
2704 -- I would say kind of the reduced need to do a deep dive
2705 with some of these visiting inspectors that you mentioned.

2706 *Mrs. Lesko. Yes, Ms. Caputo?

2707 *Ms. Caputo. Some of that virtual technology that
2708 resident inspectors were able to use was to conduct routine
2709 monitoring of plant parameters. And by, I think, making
2710 their time more efficient, it frees them up to pursue other

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2711 activities that are more safety significant. So I believe
2712 there are probably opportunities to do some of that and
2713 upskill our resident inspectors so we rely less on regional
2714 inspectors and help our residents to cover more ground. So I
2715 think there is room for efficiency there.

2716 But yes, all of these inspections are paid by licensees.

2717 *Mrs. Lesko. Yes. Anyone else?

2718 Yes, Mr. Wright.

2719 *Mr. Wright. So this is an area that we really listen
2720 to our residents. So when I go into plants -- and I know my
2721 colleagues do, as well -- we meet with them. And one of the
2722 questions that we ask them is, "What is it that you are doing
2723 on site in your inspections that you think could be done
2724 better or done differently?" Because they are the boots on
2725 the ground. They need to be there, but they can also help us
2726 -- you know, we can't -- from the top, that is not where we
2727 should be doing it.

2728 *Mrs. Lesko. Yes.

2729 *Mr. Wright. It needs to bubble up from the bottom,
2730 where the boots are on the ground, so --

2731 *Mrs. Lesko. Okay, great, thank you.

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2732 Oh, yes.

2733 *Mr. Baran. Sure. I would just add, you know, I think
2734 a lot of the work that the resident inspectors do, and then
2735 the regional inspection team, it is very complementary. You
2736 know, the residents are there day to day, walking down the
2737 plant, ensuring the safety day to day, you know, but then we
2738 have specialized teams, maybe cybersecurity or a particular
2739 type of engineering inspection. And those folks are real
2740 specialists in those areas. And those -- that is why we
2741 deploy the teams, as well.

2742 But one of the things we learned -- we learned a couple
2743 of things, I think, during the COVID period. One, the value
2744 of having boots on the ground and really seeing things
2745 firsthand, that there is, you know, in-person inspection, the
2746 actual inspection part of looking at equipment was really
2747 better than remote. But there was stuff that we could do
2748 remotely. You know, there was -- there is a certain amount
2749 of -- it is not trivial, but, like, paperwork review, looking
2750 through the licensing documents ahead to prepare the
2751 inspectors before they go. That stuff we don't have to have
2752 the folks there on site doing, and it saves time and money to

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2753 have people do that back at headquarters.

2754 So I think there are lessons learned --

2755 *Mrs. Lesko. I am glad you are looking into this. I
2756 only have a few seconds left.

2757 The Nuclear Energy Institute has suggested the following
2758 additions to your mission statement: Ensure that the
2759 regulation of nuclear activities is efficient, and does not
2760 unnecessarily limit the potential of nuclear technology to
2761 maximize its contribution to the benefit of society. Do you
2762 agree with their recommendation, anyone?

2763 *Mr. Hanson. We have principles of good regulation, and
2764 efficiency is one of those, along with openness, reliability,
2765 independence, and clarity. And so every day we strive to
2766 live up to our principles of good regulation, and efficiency
2767 is a key one of those.

2768 *Mrs. Lesko. Yes, Mr. Wright.

2769 *Mr. Wright. I would just like to add, if we are going
2770 to start talking about putting it in policy, and we have got
2771 it in our principles of good regulation, then it ought to be
2772 in the other areas, too, to be consistent.

2773 *Mrs. Lesko. Okay, thank you, and my time has run out.

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2774 Thank you, and I yield back.

2775 *Mr. Duncan. The gentlelady's time has expired. I now
2776 go to Mr. Cardenas for five minutes.

2777 *Mr. Cardenas. Thank you very much, Chairman Duncan and
2778 Ranking Member DeGette, for holding today's hearing. And I
2779 appreciate the chairman and commissioners of the Nuclear
2780 Regulatory Commission for being here today and sharing your
2781 thoughts.

2782 As it stands, 79 percent of our electricity comes from
2783 fossil fuels, making the power sector the second largest
2784 share of greenhouse gas emissions nationwide. If we are
2785 going to be -- significantly cut carbon pollution, it is
2786 undeniable that we will need to utilize carbon-free and
2787 reliable energy sources.

2788 On the front end, nuclear seems like an ideal zero-
2789 carbon electricity source, and I appreciate the committee's
2790 ongoing discussion about its role in building out a clean
2791 energy economy. However, as I have mentioned in previous
2792 hearings, I have concerns about the legacy of toxic waste
2793 associated with nuclear energy, and believe that to ensure
2794 the long-term health and safety of communities, we must find

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2795 more permanent storage solutions.

2796 As the commission overseeing the safety and licensing of
2797 our nation's nuclear reactors and interim storage facilities,
2798 I am pleased to have the opportunity to speak with you about
2799 these concerns today. Chairman Hanson, can you describe the
2800 Federal standards and processes in place that ensure safety
2801 when storing low-level and high-level waste in interim
2802 storage facilities, and how are environmental impacts and
2803 community input considered during the licensing process of
2804 interim storage facilities?

2805 *Mr. Hanson. Yes. Thank you, Congressman, for that
2806 question.

2807 We have standards for storage facilities, as you
2808 mentioned, and they are focused on containing the radioactive
2809 material; providing radiation shielding for the people who
2810 work around those spent fuel canisters, preventing nuclear
2811 criticality, so making sure that we have got the right kind
2812 of materials in those casks that prevents a nuclear chain
2813 reaction; and also maintaining retrievability. That is, if
2814 something goes in a concrete cask, that you can pull that out
2815 again, should you -- should the need arise, essentially.

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2816 Post-Fukushima, we also required additional
2817 instrumentation on spent fuel pools to maintain water levels.
2818 So we have got a -- and we have a robust inspection protocol
2819 for those spent fuel storage systems, as well.

2820 *Mr. Cardenas. So everything you just described
2821 somebody can't get at a Container Store.

2822 *Mr. Hanson. I am sorry?

2823 *Mr. Cardenas. Somebody can't get what you just
2824 described at a Container Store. These are very --

2825 *Mr. Hanson. No, no.

2826 [Laughter.]

2827 *Mr. Cardenas. -- specialized, highly engineered,
2828 proven techniques, thank God, that we have available to us
2829 today.

2830 *Mr. Hanson. Correct.

2831 *Mr. Cardenas. And that is part of the process of
2832 properly storing spent fuels.

2833 *Mr. Hanson. Absolutely, highly engineered barriers.

2834 *Mr. Cardenas. Okay, thank you. How long are interim
2835 storage facilities intended to hold nuclear waste?

2836 And how common is it for these facilities to hold

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2837 nuclear waste for longer than the agreed-upon time?

2838 *Mr. Hanson. Well, most of the spent fuel storage
2839 facilities at operating reactors are licensed along with the
2840 reactor. So it would be as long as that reactor has its
2841 operating license, the spent fuel storage facility will, as
2842 well. When that reactor shuts down, there are some
2843 regulatory boxes to check there that then transitions that to
2844 a standalone facility.

2845 We license storage casks for an initial period of 40
2846 years, and then up to an additional 40 years.

2847 *Mr. Cardenas. But this spent fuel, these byproducts,
2848 they are dangerous for 10 years, 20 years, 30 years, 50
2849 years, 1,000 years? About how long?

2850 *Mr. Hanson. The initial fission products, the real
2851 heat off of that, the heat declines really reasonably
2852 precipitously, the thermal heat. But the radioactivity then,
2853 the high amounts, probably 500-ish years, and then some of
2854 the long-lived radioisotopes can be much longer than --

2855 *Mr. Cardenas. Five hundred years. So a lot longer
2856 than any of us may be in Congress or you might be a
2857 commissioner, right?

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2858 *Mr. Hanson. I --

2859 *Mr. Cardenas. Multiple times longer.

2860 *Mr. Hanson. Yes, yes, sir.

2861 *Mr. Cardenas. Okay. No, I just wanted to get -- for
2862 the average American to understand what we are talking about
2863 here. We are not talking about, okay, storing things for 5
2864 or 10 or 15, 20 years. We are talking about super-duper-
2865 long-term.

2866 *Mr. Hanson. Well, in the near term we can assure -- we
2867 have reasonable assurance that the systems that we use to
2868 store spent fuel are safe and protective of the public.

2869 *Mr. Cardenas. But also, as a society, we need to make
2870 sure that longer than tens of years -- that there is a way to
2871 make sure that people don't just say, well, I am done, it has
2872 been 20, 30 years, we can just leave it alone and stop
2873 monitoring it. And so this is a process that is -- that
2874 takes -- it is going to be around for a long time.

2875 *Mr. Hanson. Yes, Congressman, you have identified a
2876 key policy issue about the -- about spent fuel storage and
2877 its connection to ultimate disposal.

2878 *Mr. Cardenas. Okay, thank you. My time expiring, I

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2879 just wanted to remind everybody that we really appreciate you
2880 very much, and any recommendations you can make to us, we
2881 look forward to it.

2882 Thank you so much, Mr. Chairman. I yield back.

2883 *Mr. Duncan. The gentleman yields back. I will now go
2884 to Mr. Pence from Indiana.

2885 *Mr. Pence. Thank you, Mr. Chairman, and thank you to
2886 the commissioners for being here today.

2887 The Nuclear Regulatory Commission is critical to
2888 deploying innovative nuclear resources for our grid to
2889 provide zero-emission baseload power, as my colleague next to
2890 me talked about a minute ago.

2891 I am encouraged that, under Chairman Duncan's
2892 leadership, this committee can advance important reforms to
2893 streamline licensing for nuclear assets and lay the
2894 groundwork to deploy next-generation reactors.

2895 In the Hoosier State, my state, innovators are leading
2896 the way to power the next generation of nuclear energy.
2897 Purdue University is a national leader in nuclear engineering
2898 programs, and home to the country's first and only fully
2899 digitalized nuclear reactor used to train students and

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2900 research cyber-physical protection. Recently, the university
2901 released a completed feasibility study with Duke Energy to
2902 bring a small modular reactor to power their campus.

2903 Similarly, Rolls Royce, with facilities in Indianapolis,
2904 is advancing their designs for transportable small modular
2905 reactors to provide 470 megawatts of baseload power.

2906 Chairman Hanson, SMRs have been defined as generating
2907 300 megawatts of power or less. Rolls Royce has developed an
2908 innovative design that produces 470. Given these innovative
2909 designs, how do you view SMRs above the 300-megawatt
2910 threshold?

2911 *Mr. Hanson. Thank you, Congressman. I don't think
2912 that there is anything particularly magical about the 300-
2913 megawatt threshold, and a lot of the safety issues, I think,
2914 would be very similar between 300 megawatts and 470. So it -
2915 - from a regulatory standpoint, there shouldn't be any
2916 additional -- you know, depending on the design and a lot of
2917 other things being equal --

2918 *Mr. Pence. Yes, super.

2919 *Mr. Hanson. -- should be relatively straightforward.

2920 *Mr. Pence. So do designs such as those from Rolls

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2921 Royce present different challenges from a licensing
2922 perspective?

2923 *Mr. Hanson. I would have to understand a little bit
2924 more about the specifics. It can, but often times -- and we
2925 encourage this -- with pre-application engagements, where
2926 people are coming to us and talking about maybe the unique
2927 aspects of their design, and getting kind of a pre-sign-off,
2928 we can sign off on that stuff in advance of them getting that
2929 application in. That often works very well to resolve those
2930 issues.

2931 *Mr. Pence. I think your colleague would like to
2932 comment on this, as well.

2933 *Ms. Caputo. One difference I would like to point out
2934 is indemnification under the Price-Anderson Act. I believe
2935 the threshold is 300 megawatts. So the insurance required
2936 and the participation under that indemnification framework
2937 would probably be slightly different for the reactor at 470,
2938 because it would be treated more akin to the larger operating
2939 units that exist today. So below that 300-megawatt
2940 threshold, small modular reactors operate under a different
2941 price structure.

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2942 *Mr. Pence. Okay, thank you. Kind of changing horses
2943 here a little bit, last month Purdue University and Duke
2944 Energy's feasibility study included important policy
2945 recommendations to advance nuclear energy for our state and
2946 nation. As part of their findings, the report detailed the
2947 need for a highly-skilled workforce to design, build, and
2948 operate the fleet of next-generation reactors. And all of
2949 you talked about training and hiring and looking forward with
2950 personnel.

2951 To help maintain and build this workforce, the NRC has
2952 supported critical nuclear science and engineering
2953 initiatives through the University Leadership Program.
2954 However, the NRC's fiscal year 2024 budget request did not
2955 include any funding for this program, which I hope is
2956 corrected, and is included in some way.

2957 What gaps, Chairman, do you see in the current workforce
2958 for next-generation reactors, and could the University
2959 Leadership Program be helpful to meet these needs?

2960 *Mr. Hanson. Thank you, Congressman. The University
2961 Nuclear Leadership Program is already helping meet these
2962 needs.

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2963 We are getting graduates out of these programs with
2964 expertise in material science, nuclear engineering, fuels, et
2965 cetera. It has been a real asset --

2966 *Mr. Pence. Sure. Is the program robust enough?

2967 *Mr. Hanson. It is. I believe it is robust enough,
2968 and --

2969 *Mr. Pence. It is providing you a lot of options?

2970 *Mr. Hanson. It is. Because we are both funding
2971 research activities at places like Purdue and other big
2972 programs, but also then we are just funding fellowships and
2973 scholarships for students, as well, but just academic
2974 support.

2975 *Mr. Pence. Okay. How can the NRC leverage expertise
2976 of leading universities like Purdue to meet the challenges
2977 posed by SMRs, in particular, and other transportable
2978 reactors of the future?

2979 Anyone? With 15 seconds left.

2980 [Laughter.]

2981 *Mr. Hanson. I think universities play a really
2982 important role, in part by building some of these new,
2983 innovative designs at a small scale. So Abilene Christian,

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2984 University of Illinois, Purdue, et cetera, I think, have a
2985 real --

2986 *Mr. Pence. So there will probably be something in the
2987 budget as we go forward then, I would assume. Thank you.

2988 *Mr. Hanson. Thank you.

2989 *Mr. Pence. I am out of time and I yield back, Mr.
2990 Chairman.

2991 *Mr. Duncan. I thank the gentleman. And she has been
2992 patiently waiting, so I will go to Texas, the Lone Star
2993 State, to Mrs. Fletcher for five minutes.

2994 *Mrs. Fletcher. I was waiting for that Lone Star State.
2995 Thank you so much, Mr. Chairman, and thanks to Ranking Member
2996 DeGette for having this hearing. Thank you to the chairman
2997 and all the commissioners for being here and spending your
2998 time with us this morning.

2999 I think we have seen from today's hearing that there is
3000 wide, bipartisan agreement that nuclear energy plays an
3001 essential role in our system of generating reliable, carbon-
3002 free baseload power. And advances in next-generation nuclear
3003 technologies, including SMRs that we were just talking about
3004 and have talked about a lot today, offer real potential

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3005 advancements that could increase efficiency, can improve
3006 cost, safety, and versatility for our electric grid. These
3007 are very important issues to those of us in Texas, and
3008 something that we are working on, not surprisingly, as well.

3009 Chairman Duncan mentioned in his opening that NEIMA
3010 required NRC to create a new regulatory framework for
3011 advanced nuclear reactors to speed up the development of
3012 next-generation technology. And as Ranking member DeGette
3013 noted, we have heard from a lot of stakeholders, especially
3014 at our hearing in April, that the proposed rule is overly
3015 complicated, that it needs to change to provide
3016 functionality, and really to make it possible for this
3017 advanced nuclear reactor sector to grow.

3018 So as I said, Mr. Pence was just asking about SMRs and,
3019 really, they have a great potential to lower emissions in a
3020 variety of industries. And that is something that we are
3021 focused on, which I expect my colleague, Mr. Weber, who
3022 represents the Texas Gulf Coast, may mention next. But I
3023 want to raise that X-energy, in partnership with Dow
3024 Chemical, recently announced that they would be deploying
3025 first grid scale advanced reactor at a site along the Texas

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3026 Gulf Coast. The project, once deployed, could open a new
3027 frontier for advanced nuclear applications in the industrial
3028 sector, creating an effective pathway to help energy-
3029 intensive industries lower their carbon emissions, while at
3030 the same time providing reliable power to support our
3031 domestic supply chains.

3032 While many of these reactors in development haven't
3033 shared if they plan to use part 53, it is important that the
3034 NRC issue a rule that allows these innovative technologies to
3035 be developed. And as we have discussed, I think some of the
3036 considerations that Congress intended in NEIMA don't seem to
3037 be included in this rule to develop a technology-inclusive
3038 regulatory framework that is risk-informed and performance-
3039 based.

3040 So like I said, we have heard from a variety of
3041 stakeholders. I would love to get your input on part 53.
3042 And maybe, if each of you could, share your thoughts. As the
3043 NRC continues to revise the proposed rule, how can a risk-
3044 informed approach be better incorporated to recognize risk
3045 significance when it comes to advanced nuclear technology?

3046 And Chairman Hanson, I would love to start with you and

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3047 then just go down the line.

3048 *Mr. Hanson. Thank you. The staff did tee up, I think,
3049 a number of key policy issues about part 53: whether or not
3050 there should be one framework or two; the appropriate role of
3051 of as-low-as-reasonably-achievable; the role of risk
3052 assessment and probabilistic risk assessments; and the role
3053 of the design. And along with my colleagues, I think our
3054 staffs are meeting on a weekly basis to basically work our
3055 way through these policy issues, understand the entire
3056 picture of what that rule should look like, and, I think, to
3057 achieve some potential simplification on that.

3058 I think we are all sensitive to the concern that folks
3059 perceive it to be complicated, et cetera. So we are diving
3060 into that, trying to understand the technical basis for that,
3061 and then diving into what our options might be around that to
3062 have something that is technology-inclusive, risk-informed,
3063 et cetera.

3064 *Mrs. Fletcher. Great. Thanks.

3065 *Mr. Baran. It is hard to add much to that. I mean, I
3066 agree with everything that the chair said.

3067 I guess I would just say I think we are all focused on

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3068 getting the substance of the rule right. You know, there is
3069 a lot to digest. We are digesting it, we are talking about
3070 it, our staffs are looking at it. I think we have identified
3071 the key issues, some of which the chair just talked about.
3072 And we want to make sure, in the end, at least speaking for
3073 myself, that we have an efficient and effective framework.
3074 And so that is the goal. And there is some more work still
3075 to do there.

3076 And then, you know, not to take us off part 53, there
3077 are other pieces we have got to get in place, too, for the
3078 whole overall framework.

3079 *Mrs. Fletcher. Great, thank you.

3080 Commissioner Wright?

3081 *Mr. Wright. Thank you so much.

3082 *Mrs. Fletcher. Anything to add?

3083 *Mr. Wright. First off, it has got to be used and
3084 useful, right, for the people that are going to use it. And
3085 we have heard from stakeholders out there that they haven't
3086 been listened to. I can tell you that is one of the things
3087 that we are doing. My team, my staff, is -- we are talking
3088 to everybody who said they weren't paid attention to. So we

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3089 want to hear from them, and see if they are -- and if they
3090 have got suggestions that make sense, we are going to put it
3091 in. We are going to talk about it.

3092 *Mrs. Fletcher. Great, thanks.

3093 And I just have a few seconds left, Commissioner Caputo.

3094 *Ms. Caputo. I agree with most of what has been said.
3095 I think I also agree with a comment made earlier. I am a bit
3096 struggling with the nature of the staff having sent us a
3097 draft proposed rule that the vast majority of the industry
3098 considers unworkable.

3099 So what I have done is tasked my reactor aide with
3100 proceeding through the rule on a line by line basis to ensure
3101 that we can -- that at least the vote that I cast is the best
3102 framework possible to be issued as a proposed rule, and that
3103 we are sending something forward that will meet the intent of
3104 NEIMA, and be workable and even beneficial over the existing
3105 frameworks.

3106 *Mrs. Fletcher. Okay, and Commissioner Crowell, in two
3107 seconds, I am way over time.

3108 *Mr. Crowell. I will be very --

3109 *Mrs. Fletcher. Or you can add it for the record.

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3110 *Mr. Crowell. I will add it for the record.

3111 [The information follows:]

3112

3113 *****COMMITTEE INSERT*****

3114

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3115 *Mrs. Fletcher. Wonderful, that would be great.

3116 *Mr. Crowell. I generally agree with my colleagues
3117 that --

3118 *Mrs. Fletcher. Thank you.

3119 Mr. Chairman, thank you so much, and I yield back.

3120 *Mr. Duncan. You are welcome, thank you. And I will
3121 now go to Mr. Weber, also from Texas.

3122 *Mr. Weber. Thank you, and I appreciate you all being
3123 here.

3124 I had the South Texas Nuclear Project in my -- when I
3125 was in the state legislature, and we got to go there in 2010
3126 and watch them change out spent fuel rods. It is absolutely
3127 fascinating. They can do it cleanly, they can do it safely.

3128 Do you all have a periodic schedule, where you go to the
3129 different plants and watch those kinds of activities?

3130 Mr. Chairman, I will start with you.

3131 *Mr. Hanson. Oh, yes, absolutely. I am headed out to
3132 the Midwest next week to go to LaSalle and to the new medical
3133 isotope facility in Wisconsin. I was in California a couple
3134 of weeks ago, so I try to hit as many as I can.

3135 *Mr. Weber. Do all the commissioners have a similar

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3136 format of checking, you know, seeing that process take place?

3137 You all do?

3138 *Mr. Wright. I am going to add a little bit more to it.

3139 I actually go and spend a day, what I call an inspector-for-

3140 a-day. I go and spend a whole day with the resident

3141 inspectors doing the walk downs, and doing what they do.

3142 *Mr. Weber. Okay. Well, if you come to South Texas

3143 Nuclear Plant, they have alligators in their water pond,

3144 cooling pond, and they taste like chicken. Just so you know.

3145 [Laughter.]

3146 *Mr. Wright. I was going to say they taste like

3147 chicken.

3148 *Mr. Weber. Yes, sure.

3149 Ma'am?

3150 *Ms. Caputo. South Texas is one of the plants that I

3151 have seen. And yes, it is a very impressive facility.

3152 I think one of the things that gives me a little pause

3153 going forward is the Commission budget has operated at the

3154 same level since 2014, with the exception of a couple of

3155 years. So I think we are getting to a point where there are

3156 potentially some constraints on staffing, and perhaps travel.

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3157 *Mr. Weber. Okay.

3158 *Ms. Caputo. So I think we are trying to work our way
3159 through that.

3160 *Mr. Weber. Commissioner?

3161 *Mr. Crowell. I would just say it is, you know, it is
3162 an incredibly important part of the role as a commissioner,
3163 is to visit sites that we regulate, not just for the benefit
3164 of the site, but also so you can be an ambassador for -- and
3165 reassuring the public about the safety case at the NRC, be it
3166 at a particular site or anywhere in the country.

3167 *Mr. Weber. Yes.

3168 Commissioner, did we skip you?

3169 *Mr. Baran. Yes. No, I have been to about, I think,
3170 about maybe 40 of the operating sites at this point.

3171 *Mr. Weber. Okay.

3172 *Mr. Baran. And I learn a lot every time, and it is
3173 very valuable.

3174 *Mr. Weber. To my colleague that said that he was
3175 concerned about waste being handled safely, they had a video
3176 that showed them with a really super big steel container that
3177 they put waste in. They put it on the flatbed of a railcar,

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3178 chained it all down, and then they rammed it into a concrete
3179 barrier at 60 miles an hour. And of course, the chains
3180 break, and the container goes spinning off, but it doesn't
3181 fail.

3182 And so, if we could somehow get that word out to the
3183 American public that we can handle waste cleanly and safely
3184 -- have any of you all been to -- I am sure you know about
3185 Andrews County, Texas, waste control specials, low-level, and
3186 -- have any of you all been there?

3187 *Mr. Crowell. I was just there last week, and I think
3188 they do an admirable job and could do more.

3189 And I do agree with your point that the -- I don't think
3190 the public appreciates the robustness of waste packaging and
3191 transport, and it is really -- it is impressive, it is world-
3192 class.

3193 *Mr. Weber. Yes. So how do we get that -- how do we
3194 get a high-level waste facility like that? That is up to us,
3195 isn't it? Yes. Well, what we ought to do is aim at
3196 someplace in Nevada, in the mountains. See how that works
3197 for us.

3198 So, Winter Storm Uri two years ago February, the water

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3199 cooling system on South Texas Nuclear Project, one of them,
3200 failed. Now, we have unit one and unit two. When I was in
3201 the state house, they used to brag that unit one produced
3202 more electricity than -- for households than any other unit
3203 in the country, and unit two was number three. I don't know
3204 who it snuck in there between us, because in Texas we like
3205 being in the lead. They produce household electricity.

3206 So did you all get to see the set-up? Have you been --
3207 you have been there to Waste Control, especially. Have you
3208 been to South Texas lately? Did I miss that? Who has been
3209 there the most lately?

3210 Has anybody been in South Texas Nuclear Project?

3211 You have. When was that?

3212 *Ms. Caputo. I think it was shortly before that storm.

3213 *Mr. Weber. Winter Storm Uri in February.

3214 *Ms. Caputo. Yes.

3215 *Mr. Weber. Two years ago. Anybody else?

3216 *Ms. Caputo. But I was able, having been there, to talk
3217 with folks from the plant about the nature of what caused
3218 that one outage to go down.

3219 *Mr. Weber. Right.

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3220 *Ms. Caputo. Because both of those plants are more or
3221 less, you know, required to be prepared and protect against
3222 extreme weather events. And as it turns out, I think it was
3223 a six-foot piece of insulation that had not been put back
3224 after some recent work.

3225 *Mr. Weber. Right.

3226 *Ms. Caputo. So it was an oversight on -- in terms of
3227 not following procedures.

3228 *Mr. Weber. Right.

3229 *Ms. Caputo. But --

3230 *Mr. Weber. Funny how that happens.

3231 *Ms. Caputo. -- otherwise, they were in good shape.

3232 *Mr. Weber. Just take the -- 50 percent of the
3233 capacity. They got 18 degrees on the Gulf Coast of Texas. I
3234 have grown up in a 20-mile radius, 70 years. I have never
3235 seen 18 degrees on Galveston Island. Have you all been to
3236 Galveston Island?

3237 We do want you to come down there and spend lots of
3238 money. But thank you all for what you do. I just want to
3239 make sure that you all are watching, and paying attention,
3240 and getting out there in the field because there is a lot of

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3241 jobs involved. There is a lot of energy and electricity
3242 involved in it. So I just -- I appreciate what you all do.
3243 Thank you.

3244 I yield back.

3245 *Mr. Duncan. The gentleman yields back. We will stay
3246 in Texas, go to Mr. Veasey for five minutes.

3247 *Mr. Veasey. Thank you very much. I want to thank
3248 Chairman Hanson and the commissioners for coming here today.

3249 Nuclear technology has been in use for decades now in
3250 the U.S., and it still produces about a fifth of U.S.
3251 electricity with little or no carbon emissions. We use it in
3252 Texas on ERCOT, and it has been a good, reliable source of
3253 energy for a lot of Texans.

3254 And from Germany to California, places planning to
3255 retire their reactors have now really started to have second
3256 thoughts on that. I know as Germany, in particular, they are
3257 burning a record amount of coal because of -- partly because
3258 of Ukraine's unlawful invasion of -- Russia's unlawful
3259 invasion of Ukraine. And as you know, we in Texas are in
3260 similar situation where the Comanche Peak Nuclear Power Plant
3261 is currently seeking re-licensing just outside of my district

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3262 there in Johnson County.

3263 And it is just not the re-licensing of existing plants.
3264 The Department of Energy released a report in March that
3265 estimated U.S. domestic nuclear capacity has the potential to
3266 scale from approximately 100 gigawatts in 2023 to about 300
3267 gigawatts in -- by 2050, driven by deployment of advanced
3268 nuclear technologies.

3269 One of these new technologies is being led by Natura
3270 Resources and sponsored at Abilene Christian University,
3271 which I have had really great interaction with that group
3272 from Abilene Christian there to my west. And I know that
3273 potential new additions of safe, reliable, affordable, and
3274 clean nuclear power, like those being developed and
3275 demonstrated at places like Abilene Christian are going to be
3276 essential to U.S. security, U.S. energy security, and the
3277 deployment of new advanced reactor technology that is going
3278 to be crucial for us to be able to compete with Russia and
3279 China in the global nuclear industry. For new nuclear
3280 technology to get us to these goals, these reactors need to
3281 be licensed at a quick pace by NRC at scale.

3282 And my question is that I understand last week

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3283 Commissioner Baran submitted a memo to the chair and
3284 colleagues calling for the development of a policy statement
3285 on effectiveness and efficiency for new reactor reviews. I
3286 would like to know from each of the commissioners and the
3287 chairman, do you support Commission action to address the
3288 elements outlined in Commissioner Baran's memo?

3289 And what -- and where do you think current efforts may
3290 need redoubling to meet the expectations ahead?

3291 *Mr. Hanson. Thank you, Congressman. I certainly
3292 support the objectives of Commissioner Baran's memo.

3293 *Mr. Veasey. Thank you.

3294 *Mr. Baran. Well, having authored the memo, I would
3295 just say I look forward to my colleagues' thoughts about it,
3296 their ideas and suggestions, and I wanted to get the
3297 conversation started.

3298 *Mr. Wright. So, yes, I spoke with Commissioner Baran
3299 about it on Friday, I believe it was, when he brought it to
3300 us. But I am also working with my colleague, Commissioner
3301 Caputo, on another approach, as well, that brings some
3302 urgency to the situation, as well.

3303 *Ms. Caputo. I am thrilled to see him interested in

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3304 timely licensing, and I fully expect to vote yes on the
3305 process.

3306 My concern is that, by the time a policy statement goes
3307 through notice and comment, it could be quite some time
3308 before it is in place, perhaps as long as three years or
3309 more. So I think a very important complement to his
3310 memorandum would be the one that Commissioner Wright and I
3311 are working on to try and put metrics in place in the near
3312 term.

3313 *Mr. Crowell. I think Commissioner Baran's proposal is
3314 both timely and appropriate, and I do support it.

3315 *Mr. Veasey. Yes, thank you very much. So what
3316 additional support does the NRC need from Congress to aid the
3317 effective and efficient review of advanced reactor
3318 technologies? And anyone can answer that.

3319 *Mr. Hanson. Congressman, I guess I would kind of focus
3320 on two things.

3321 One is just additional hiring authorities so we have got
3322 that flexibility in the way we bring people on. It is not to
3323 say that we need a lot more people, necessarily. I have -- I
3324 think I have been pretty consistent in saying that we both

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3325 need to bring new people into the agency and also change the
3326 way we work.

3327 And I guess the other thing, then, is that some off-fee
3328 money, where we don't -- we are not relying on folks to come
3329 to us with a specific product in order to get up to speed on
3330 some of these reactors and some of the technologies and the
3331 novel approaches that people are using.

3332 I would kind of maybe focus on those two things to
3333 start.

3334 *Ms. Caputo. As I mentioned earlier, I think Congress
3335 giving us statutory relief or discretion, at least, in the
3336 conduct of mandatory hearings, I think, would be very
3337 helpful.

3338 I think certain amount of discretion with regard to the
3339 reviews that are conducted by our advisory committee on
3340 reactor safeguards would also create some efficiencies.

3341 And beyond that, there is a question about whether
3342 companies that manufacture micro-reactors or even small
3343 reactors have the authority to manufacture fully and do some
3344 limited testing before shipping to the end user. So there
3345 might be a benefit to creating some clarity in that area to

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3346 enable reactor manufacturers to do limited testing in-house
3347 before shipping to the final user.

3348 *Mr. Veasey. Yes, thank you very much. My time is
3349 expired.

3350 *Mr. Duncan. I thank the gentleman for yielding back.
3351 I will go to Mr. Palmer from Alabama for five minutes.

3352 *Mr. Palmer. Thank you, Mr. Chairman.

3353 Nuclear energy has the potential to transform our energy
3354 production. We need affordable energy, but we also need
3355 clean energy, but we desperately need reliable energy. And I
3356 think nuclear energy can provide that.

3357 And one of the things that I try to point out to people,
3358 particularly with next-generation nuclear, you could site one
3359 next-gen nuclear facility on 640 acres of land to generate
3360 the same amount of power -- or to have the same power
3361 generation from a wind farm would take 77,000 acres. That
3362 doesn't even take into account the enormous impact that it
3363 will have in terms of mining, and the extraction of the
3364 various elements and components that you have to have to even
3365 begin to think about building a wind or solar farm.

3366 So Commissioner Caputo, today the NRC -- and it is along

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3367 the lines of what you were just talking about, I think --
3368 requires an environmental impact statement for every new
3369 reactor, even for reactors that are 1/100 or 1/1,000 the size
3370 of traditional reactors. Now that seems like that is overly
3371 burdensome.

3372 So would -- and I guess I would direct this to all of
3373 you. Do you commit to supporting changes to the NRC's
3374 regulations to allow the use of different types of
3375 environmental review, such as environmental assessments or
3376 categorical exclusions based on the actual environmental
3377 impact of a reactor?

3378 *Ms. Caputo. Without seeing specifics or a specific
3379 proposal, I would generally look favorably on those types of
3380 activities --

3381 *Mr. Palmer. Okay --

3382 *Ms. Caputo. -- to streamline our environmental
3383 reviews. These reviews are -- given that licensing is a
3384 major Federal action subject to NEPA. But within the bound
3385 of our authorities under NEPA, I would be interested in those
3386 kinds of proposals.

3387 *Mr. Palmer. Well, in your testimony you mentioned the

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3388 importance of agency innovating with an eye to the future.

3389 *Ms. Caputo. Yes, sir.

3390 *Mr. Palmer. And this is where I am on this, is looking
3391 at -- and I know it has been mentioned by a couple of my
3392 colleagues who have already raised this point about the fact
3393 that next-gen nuclear can recycle spent fuel rods. You can
3394 recover 96 percent of the recoverable usable material, and
3395 what is left can be used for other purposes. For instance,
3396 nuclear medicine.

3397 One of the things that I want to point out, we had a
3398 hearing in here and we had the director of the National
3399 Nuclear Laboratory. And I asked, if we went in this
3400 direction, considering that there is 39 states where we have
3401 -- we are -- we have spent nuclear fuel in storage, I asked
3402 had he run the calculations to determine how long we could
3403 operate our -- power our country with the spent fuel rod,
3404 spent fuel. And he said that he had actually run the
3405 numbers.

3406 Do any of you have a -- hazard a guess how long we could
3407 do that?

3408 *Ms. Caputo. I think it is pretty hard to put a number

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3409 on it. It depends on the type of reactor, as well. The
3410 numbers that you are using, 96 percent, 96 percent of it is
3411 reusable. But of that 96, there is only a couple percent
3412 that actually generates fuel --

3413 *Mr. Palmer. Right.

3414 *Ms. Caputo. -- in a conventional reactor. So it
3415 actually has to be topped up with a little bit of fresh.

3416 But advanced reactors or fast reactors are able to
3417 harness the energy in the rest of the 96, and to even perhaps
3418 get rid of some of that 4 percent. So there is a higher
3419 efficiency. It would take a significant number of fast
3420 reactors to work through the spent fuel that we have
3421 currently, but that opportunity, I think, is there to work
3422 that off over a long period of time.

3423 *Mr. Palmer. His response was he thought it would last
3424 100 years, which -- I think that is part of what we need to
3425 take into account.

3426 And your point, too, you would have to have additional
3427 fresh fuel into the mix to make this work properly. But the
3428 point is that we can build these. They will have an
3429 operational life cycle of a minimum 40 years, and could

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3430 operate much longer than that. And they operate 24/7,
3431 providing reliable fuel. And they are only shut down when
3432 you are doing maintenance on a reactor.

3433 *Ms. Caputo. If this was Dr. Gehin from Idaho National
3434 Lab, he might have talked about technologies that Idaho
3435 National Lab pioneered, which actually, through using a fast
3436 reactor, would consume most of the long-lived products in the
3437 fuel, generating a waste product which would decay below the
3438 level of natural uranium over a span of about 400 years. So
3439 the life span of the waste product itself that would come at
3440 the end of that process would be much, much shorter-lived
3441 than what we currently face.

3442 *Mr. Palmer. Yes.

3443 Well, Mr. Chairman, my time is expired. I yield back.

3444 *Mr. Duncan. I thank the gentleman. I now go to Mr.
3445 Sarbanes for five minutes.

3446 *Mr. Sarbanes. Thanks very much, Mr. Chairman. Thank
3447 you all.

3448 Chairman Hanson, I just wondered, before I get to my
3449 main question, if you could speak, if you are able to, to the
3450 safety activities that NRC has undertaken recently in

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3451 Maryland around the safety of the Calvert Cliffs Plant, and I
3452 would just be curious how that is going, in your view.

3453 *Mr. Hanson. Congressman, I am sorry, I don't have a
3454 lot of the details in front of me on the specifics on Calvert
3455 Cliffs. I am happy to get back to you.

3456 *Mr. Sarbanes. That would be great.

3457 *Mr. Hanson. Or reach out to your office.

3458 *Mr. Sarbanes. I appreciate it very much.

3459 *Mr. Hanson. Yes.

3460 *Mr. Sarbanes. So we have had a lot of discussion of
3461 the part 53 draft, and there is some concerns about the input
3462 and so forth that has happened around that. Could you just,
3463 for my benefit, because I think it has been assumed a lot in
3464 the conversation, describe what the -- I think it is two
3465 frameworks are that are contained within the draft A and B?
3466 What are they? What are the differences between the two?
3467 What are the implications of that for the process, going
3468 forward?

3469 *Mr. Hanson. Yes, I would be happy to. I will -- and I
3470 will do it as briefly as I can.

3471 *Mr. Sarbanes. Great, yes.

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3472 *Mr. Hanson. Framework A is based on -- the industry
3473 developed what they call the Licensing Modernization Project,
3474 which is really where risk information takes kind of a
3475 leading role. You have got -- you know, if you are a vendor,
3476 you have got a sufficient information about your design, you
3477 can conduct those risk analyzes to identify the most safety
3478 significant aspects, and then present those to the NRC.

3479 In framework B it is a more traditional approach, like
3480 what we have in 50 and 52, but with a lot of the light water
3481 reactor-specific elements kind of stripped out. It is more
3482 deterministic. It recognizes that, you know, maybe you don't
3483 have that super-detailed design, or you don't have a lot of
3484 that extra scientific information, so we are going to build
3485 some extra either operational requirements or physical
3486 envelope around that reactor to ensure safety.

3487 There is a third little piece of that. It is kind of
3488 framework B light, which is really for micro-reactors, as
3489 well, in there.

3490 *Mr. Sarbanes. Okay. And can you describe where you
3491 think, ultimately, to the extent you can, this whole new
3492 frontier around advanced reactors is taking us?

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3493 What is the portfolio going to look like between the
3494 more kind of traditional approach that we have seen in terms
3495 of nuclear capacity, and the space that will now be occupied?
3496 And I assume it will be a growing space occupied by these
3497 advanced reactors. What does that look like, assuming, you
3498 know, all the regulations go the way they should, or you hope
3499 they do, and the trajectory rolls out over the next few years
3500 -- 10, 15, 20 years?

3501 If you could look forward, what does the broad portfolio
3502 look like in terms of the relative, you know, participation
3503 of those two things?

3504 *Mr. Hanson. Yes, with the caveat that predicting the
3505 future is hard, as Yogi Berra said, I would say that we are
3506 likely to have a kind of a broad portfolio of different -- of
3507 very different technologies -- so a pressurized water
3508 reactor, a boiling water reactor, a high temperature gas
3509 reactor, molten salt, et cetera, and then standardized
3510 designs in each of those fields that allows for kind of
3511 broader deployment.

3512 What we have in the -- in this country right now with
3513 the initial fleet was we have a lot of pressurized water

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3514 reactors, we have a lot of boiling water reactors, and every
3515 one of them is a little bit different, either in the aspects
3516 of the design or on the secondary side -- the secondary side
3517 being, really, the electricity generation side.

3518 So I would see a real move to standardization, and
3519 that --

3520 *Mr. Sarbanes. Right.

3521 *Mr. Hanson. That, I think, makes the regulatory
3522 process substantially easier and more efficient, as well.

3523 *Mr. Sarbanes. Okay. One other question. How does our
3524 progress in this regard compare to what is happening with
3525 peer nations around the globe? Do you see us moving in a way
3526 that demonstrates leadership here? Just describe the larger
3527 ecosystem in which you operate.

3528 *Mr. Hanson. I think we do have some leadership,
3529 particularly in our partnership with Canada and the UK. I
3530 think the three of us are moving very closely together,
3531 deploying and evaluating similar kinds of technology.

3532 I think other countries are coming along, other allies:
3533 France, Korea, Japan, et cetera. They are taking their time
3534 a little bit more, and certainly engaging in some technology

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3535 development efforts, but maybe are a little bit behind that.
3536 But I would say that the U.S. and these three key nations are
3537 in a leading role.

3538 *Mr. Sarbanes. Great. Thanks very much.

3539 I yield back.

3540 *Mr. Duncan. I thank the gentleman. And I will now go
3541 to the Bluegrass State, Mr. Guthrie, for five minutes.

3542 *Mr. Guthrie. Thank you, I appreciate that for
3543 recognizing the Bluegrass State. We are also an energy
3544 state, and so I wanted to ask a couple of questions -- one
3545 for Commissioner Caputo and, Commissioner Wright, if you
3546 would add, as well.

3547 So power providers in my district, you know, we are
3548 famous for coal, Kentucky has been, Kentucky coal. They have
3549 started establishing nuclear energy generation. We are
3550 interested in -- and now that there is some switching to --
3551 or making some changes.

3552 But we are being quoted at -- our providers -- a 10-year
3553 timeline to get reactors online, including, like, small
3554 modular reactors. So, Commissioner Caputo, do you have any
3555 suggestions for cutting down the time it takes to get a new

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3556 reactor online without compromising public safety? And it
3557 would be helpful if you could outline some of the key steps
3558 in the licensing process.

3559 And then, Commissioner Wright, if you would add to that,
3560 as well --

3561 *Ms. Caputo. Sure.

3562 *Mr. Guthrie. -- it would be helpful.

3563 *Ms. Caputo. One of the comments that staff and the
3564 Commission make prolifically is we really need to see
3565 complete, high-quality applications. To the extent that a
3566 licensee really strikes a balance between ensuring that we
3567 have all the information that we know, and that there is
3568 enough information for us to reach decisions, I think, is an
3569 important way to start.

3570 We also encourage pre-application engagement to more or
3571 less -- particularly with novel technologies -- acquaint us
3572 with the nature of what is going to be in the application
3573 when it comes forward, and ensure that the design is well
3574 developed. This, I think, is a process that can be very
3575 beneficial. I think, in the case of the NuScale review that
3576 was mentioned earlier, this pre-application phase went on for

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3577 eight years. So I think it is incumbent upon us to ensure
3578 that the pre-application engagement that is going on is
3579 efficient and effective, but also on the applicant to ensure
3580 that they are well developed.

3581 From there we go into a review process which, while we
3582 are aspiring to achieve 24 months, this would be a new mark
3583 for us. And so I think, once again, it is incumbent upon us
3584 to ensure that whichever process or whichever framework a
3585 licensee chooses, that the staff is operating with a sense of
3586 urgency, limiting any requests for additional information to
3587 the actual safety findings that need to be made, not just
3588 questions based on curiosity about furthering their
3589 understanding of a design, that we limit the nature of the
3590 work that we are doing to actually making a decision based on
3591 safety.

3592 *Mr. Guthrie. Thanks.

3593 And Commissioner Wright, anything to add to that?

3594 *Mr. Wright. Well, it is very important that, on our
3595 side, that we stay within that safety strike zone over home
3596 plate, that we don't go beyond reasonable assurance. Once it
3597 is established, it is established.

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3598 I mean, there is some reviews that have to take place:
3599 aging management, you know, certain structures, components,
3600 safety systems, all that kind of stuff, and siting. There is
3601 ways that we have to do certain things. But early engagement
3602 is critical. And all of this, the more we get done ahead of
3603 time and the more we get to resolution, the quicker it
3604 happens.

3605 *Mr. Guthrie. Okay, thank you.

3606 And Chairman Hanson, you know, as I talked about us
3607 being a leading energy state, particularly in coal
3608 production, we have a lot of coal-fired plants, power
3609 generation. Some are transitioning. And so one of the --
3610 some of my folks in my area are talking about transitioning
3611 our coal power to particularly small nuclear, small modular
3612 reactors or to nuclear plants. Could you talk about some of
3613 the barriers in the NRC licensing process to converting old
3614 coal-fired plants into nuclear power plants?

3615 *Mr. Hanson. Congressman, thank you. I am not sure I
3616 am aware of specific barriers. If you have got a site that
3617 has some infrastructure on it and is, you know, reasonably
3618 well characterized, I would expect that the environmental

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3619 review and some other things can be actually more efficient
3620 than if you were doing something on a greenfield site. So I
3621 am not aware of specific barriers on that.

3622 *Mr. Guthrie. So they are not treated different, a
3623 greenfield site and an existing power plant wouldn't be
3624 treated differently. It is -- whatever the application is --
3625 and the safety that we talked -- the steps we talked about is
3626 what is --

3627 *Mr. Hanson. Yes.

3628 *Mr. Guthrie. -- important. Okay. Thanks for that.

3629 So Commissioner Caputo, you highlighted the importance
3630 of staff leaders who can innovate and cultivate a workforce
3631 and culture striving to ensure the mission of the NRC is
3632 carried out. What is the role of the Commission and the role
3633 of Congress to support this effort?

3634 And any other commissioners could add in. So what is
3635 the role of yourself and ourselves to make sure you have the
3636 workforce you need?

3637 *Ms. Caputo. I think part of it rests with the
3638 Commission in terms of the leaders within the agency that the
3639 Commission is responsible for selecting. But then, below

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3640 that, I think it is incumbent upon the senior leaders in the
3641 agency to cultivate mid-career folks and give them, I think,
3642 particular leadership training to prepare them to move into
3643 senior roles.

3644 *Mr. Guthrie. Okay. Anybody else? I have a couple of
3645 seconds.

3646 Commissioner Crowell?

3647 *Mr. Crowell. This is an incredibly competitive field
3648 right now. And so it is difficult for a government agency to
3649 necessarily compete with the private sector for a limited
3650 pool of high-quality candidates.

3651 That being said, the mission of the NRC and the
3652 relevance of it to our -- to, you know, solving contemporary
3653 issues today, I think, should be a draw for particularly a
3654 younger set of students.

3655 *Mr. Guthrie. Thank you. And sorry, my interest here
3656 is absolutely here. I just want to say that there is another
3657 committee going on, as well, and I have to go back to that.
3658 So thank you for your time and effort.

3659 Thank you.

3660 *Mr. Duncan. I thank the gentleman. And as an honorary

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3661 Texan, I start to realize how many Texans we have on this
3662 committee. I will go to one now. Mr. Pfluger is recognized.

3663 *Mr. Pfluger. Thank you, Mr. Chairman. I appreciate
3664 you holding this hearing in the, you know, the spirit of
3665 energy security.

3666 And the ability to have affordable, reliable,
3667 dispatchable power is so important for us. And I will use an
3668 example. We recently took a trip where we looked at the
3669 ability of our European partners to have affordable, reliable
3670 energy, and they are split. You know, the further west you
3671 get, with the exception of France, they are turning away from
3672 nuclear power. The further east you get, closer to Ukraine,
3673 closer to the reality that geopolitically, countries like
3674 Russia, Vladimir Putin, have used energy as leverage in
3675 conflict. The Czech Republic, Poland, and these types of
3676 countries are completely turning towards nuclear because they
3677 understand it.

3678 And you know, my concern -- by the way, let me give a
3679 shout out to Abilene Christian University. The research that
3680 they are doing is just phenomenal. I am not too far away
3681 from them. Although not in my district, 90 miles south is my

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3682 hometown, and I am very proud of the work that they are
3683 doing.

3684 I am worried about keeping up with technology. And
3685 Commissioner Caputo, you put it very nicely, and you stated
3686 some hurdles that we have, and the emerging technologies, and
3687 the ability for the NRC to keep up with those technologies.
3688 Do you think we are up for the challenge? Are we going to
3689 meet the speed of relevancy to compete worldwide?

3690 *Ms. Caputo. I think, with increased innovation in our
3691 procedures and processes, with strong leadership, and
3692 benchmarking and metrics to track our progress, I think those
3693 are key tools to doing exactly what you have asked.

3694 I think the expectations that Congress has put on us are
3695 very important. I certainly feel a sense of urgency for
3696 meeting that. I think one of the most compelling numbers
3697 that I have seen lately was just this week, where China and
3698 Russia together comprise 70 percent of the new reactor
3699 business happening in the world, and I think that is a very
3700 sobering statistic. And a lot of the attractiveness for
3701 doing business with those countries lies outside the
3702 regulatory realm and in financing, et cetera.

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3703 So our piece of helping America be competitive strongly
3704 rests in safety, solely rests in safety. But the more we can
3705 do to create timely reviews and ensure that the world can see
3706 that the technologies we have have been approved by the
3707 regulator and put into operation, I think, builds confidence
3708 in countries that would do business with us that we really do
3709 have the best options in terms of technology, and that they
3710 are proven by construction and operation here in the U.S.

3711 *Mr. Pfluger. Well, I couldn't agree with you more. We
3712 need to export our technology, and we do it better, we do it
3713 more efficient. We just know this better than anybody else.
3714 And you do play a very important -- not the entire role, but
3715 a very important role in this, and this committee under
3716 Chairwoman Rodgers' leadership is going to tackle the rest of
3717 those issues that are preventing us from delivering it here,
3718 and having that affordable, reliable baseload power, but also
3719 getting it to our allies and partners like Poland, like the
3720 Czech Republic, like people who are right next to conflict
3721 zones or who know this business.

3722 Commissioner Crowell, you mentioned something that has
3723 me very concerned about the waste management site, WCS, doing

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3724 more in Andrews County. And actually, I disagree with that.
3725 And I heard discussions about safety, and I have heard
3726 discussions about stakeholders.

3727 And Chairman Hanson, I am going to ask you a question
3728 here in a second, but I don't think that the process that we
3729 went through in Andrews County actually took into account
3730 stakeholder community interaction to the degree that it
3731 should have.

3732 We have low-level waste that has been there for a while,
3733 but the community there -- and the fact that we have the most
3734 prolific oil and gas production region in the entire country,
3735 probably in the world, I think, deserves a permanent
3736 solution. We don't need an interim solution. And I know
3737 this committee has been asked about that here.

3738 Chairman Hanson, do we have a permanent solution in
3739 mind? Because that part of the world, we have to be very
3740 careful about where we are putting high-level nuclear waste.
3741 And I personally am not in agreement with doing more, as was
3742 suggested. We need a permanent solution.

3743 *Mr. Hanson. Yes. Thank you, Congressman. I certainly
3744 understand the concern of communities who may be hosting

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3745 interim storage facilities about those being de facto
3746 permanent facilities. And so part of the overall policy need
3747 in the U.S. and for Congress and other parts of the executive
3748 branch is to formulate that policy, that permanent solution
3749 that then the NRC can come in and evaluate the safety merits
3750 of that particular solution.

3751 *Mr. Pfluger. We would like to see that. It is very
3752 important to my district. It is very important to that area
3753 of Texas, that -- the State of Texas has spoken loud and
3754 clear about its view on not having that as a permanent site.
3755 And a 99-year lease is not interim, in my opinion. That is
3756 very much a permanent thing.

3757 Mr. Chairman, I yield back.

3758 *Mr. Duncan. I appreciate the gentleman. I now go to
3759 Mr. Fulcher from Idaho.

3760 *Mr. Fulcher. Thank you, Mr. Chairman.

3761 And to the committee, this has been an educational
3762 hearing for me. And something kind of impressed me a few
3763 minutes ago. And I looked up the mission statement that you
3764 operate on, and I am abbreviating, but basically it says to
3765 license, to regulate, to protect public health and safety.

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3766 There is nothing in there about -- anything about efficient
3767 development or use.

3768 Mr. Hanson, you said a few minutes ago it is part of
3769 your principles. It is not part of your mission. So if I
3770 got to ask a question, is any kind of efficiency or
3771 development important to you? Is that part of what you do?
3772 And if so, give me an example.

3773 *Mr. Hanson. Yes, it really is. I mean, we -- you
3774 know, on offices all over the building we have posted our
3775 principles of good regulation, and not only what the words
3776 are, but what they mean underneath. I think a good example
3777 of efficiency is the Kairos construction permit that we just
3778 issued -- that we are issuing today, the safety evaluation on
3779 that. We did that three months ahead of schedule. We were
3780 able to track our progress on that, and identify and resolve
3781 the safety-relevant issues very efficiently.

3782 *Mr. Fulcher. Okay. So in my state of Idaho, we have
3783 got the Idaho National Lab. Ms. Caputo, I understand you
3784 spent some time, or you worked there at some point in time.
3785 In discussions with them and stakeholders, there was three
3786 suggestions that were brought forth that we attempt to try to

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3787 promote, and I will just summarize them. I can go into
3788 detail if you like, but you will probably recognize them all.

3789 Number one is the removal of mandatory, uncontested --
3790 the mandatory, uncontested hearing requirement, which
3791 believes -- they believe would save up to about six months.

3792 Number two would be removal of a contested hearing on
3793 environmental topics. The specific one has to do with the
3794 NEPA review, which turns into a series of lawsuits, lawsuits,
3795 lawsuits, the analyze-paralyze point of things, or at least
3796 restructure that so that the contested hearing on the
3797 environmental is at least different. But that is the second
3798 recommendation.

3799 And I am going to ask Ms. Caputo to comment on this, and
3800 then the chairman or anybody else afterwards, as well. But
3801 Ms. Caputo, because of your connection with INL.

3802 The third one was simplify the contested hearing
3803 process, which currently, as described by the AEA, goes into
3804 great detail, and potentially the restructure to where it was
3805 more like a legislative hearing process than its current
3806 structure.

3807 Those are the things which, quite frankly, doesn't do a

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3808 lot of -- change the responsibility of your Commission, as I
3809 understand it. This is all stuff that can be done, process-
3810 wise.

3811 Could I ask you, Ms. Caputo? What do you think of those
3812 recommendations? Are they good, are they not? And if so,
3813 why or why not?

3814 *Ms. Caputo. Well, I definitely agree with the first
3815 one. I think the devil is in the details on the second two.
3816 I think there is probably opportunity there, but the details
3817 matter. And as long as we are meeting our statutory
3818 requirements under NEPA, to the extent that we can reduce the
3819 timeframe through streamlining our processes, I would
3820 certainly be interested in that.

3821 I would also like to respond to your initial question.
3822 I think, you know, the chair -- I agree with the chairman
3823 about the principles of good regulation. I quote those
3824 frequently. I think they are really important guideposts for
3825 the agency. But I also think that we need to do more within
3826 the agency in terms of creating an expectation and setting
3827 objectives to achieve more efficient business processes.

3828 *Mr. Fulcher. Okay, thank you for that. I have only

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3829 got a minute left, and I want to give Mr. Hanson at least an
3830 opportunity to talk to this, too.

3831 But in 2008, the state senate -- I remember INL coming
3832 in, and the state -- and the contractor saying, "We are just
3833 around the corner on the SMR, we are just around the
3834 corner.'" It was 2023, and we are just around the corner.
3835 So we are not making a lot of progress.

3836 I look at your mission, and I see the best thing you can
3837 do to fulfill your mission is to make sure that we are not
3838 efficiently developing or using. Mr. Hanson, your comments?

3839 *Mr. Hanson. You are talking about back in 2008?

3840 *Mr. Fulcher. I am talking about we are not making
3841 progress, at least at the rate where we could be. And I
3842 think part of it could be the mission that you are carrying
3843 out, which is the best way to protect public health and
3844 safety is not to develop and not to use. So we are not. And
3845 I would like your comment on it.

3846 *Mr. Hanson. Yes, I --

3847 *Mr. Fulcher. How about those recommendations? We have
3848 only got a few seconds.

3849 *Mr. Hanson. Yes, I don't think we should be -- and I

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3850 have said multiple times -- we shouldn't be an impediment to
3851 the deployment of new nuclear. There are other factors out
3852 there, economic supply chain and other kinds of issues that
3853 impact the marketplace in the U.S.

3854 *Mr. Fulcher. Mr. Chairman, it appears to me the
3855 Commission is doing exactly what their mission says they
3856 should do, and that doesn't include any kind of efficient
3857 development or use.

3858 I yield back.

3859 *Mr. Duncan. The gentleman yields back. I now go to
3860 Mr. Dunn for five minutes.

3861 *Mr. Dunn. Thank you very much, Mr. Chair. I also want
3862 to thank you for the opportunity to waive on to this hearing
3863 today.

3864 As my colleagues have mentioned, nuclear energy plays a
3865 critical role in American energy security and reliable
3866 generation of power. This subcommittee is conducting
3867 extremely important work, and I appreciate the opportunity to
3868 join you.

3869 As you know, Turkey Point is located on the southern tip
3870 of the Florida peninsula. This is a facility that is

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3871 critical for electrical generation grid stability in southern
3872 Florida. The geography of the area surrounded by water on
3873 three sides affords limited connectivity with the national
3874 electric grid. There really aren't any redundant sources of
3875 electricity available locally.

3876 The continued operation of Turkey Point is critical to
3877 protect -- to powering South Florida families and businesses
3878 and maintaining the electric grid in Florida. While other
3879 sites in the United States may have other options, South
3880 Florida simply doesn't have one they can turn to. So
3881 continued delays in reviewing and processing the Turkey Point
3882 license renewal -- renewal -- is creating significant
3883 uncertainty with no readily available alternatives for power
3884 generation.

3885 There is no doubt that Turkey Point is crucial to
3886 ensuring energy reliability for Florida. However, in 2022,
3887 the NRCC [sic], under then-Chairman Boran, upended the NRCC
3888 [sic] regulatory process, forcing Turkey point into a new
3889 subsequent license renewal process.

3890 This is not a new plant. It has been operating for over
3891 50 years in Florida, providing clean and reliable power. And

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3892 keeping it running is incredibly important to Floridians.
3893 Last week, the NRCC [sic] again changed the process for
3894 Turkey Point, delaying it by at least four months.

3895 Gentleman, this is unacceptable. It is imperative that
3896 we have regulatory certainty, especially when it comes to our
3897 grid security and reliability.

3898 Chairman Hanson, has the NRCC [sic] considered the
3899 impact this delay will have to grid reliability in Florida?

3900 *Mr. Hanson. Congressman, the license renewal for the
3901 plant, I believe, is -- the current license is out into the
3902 2030s at this point. So we are talking about the renewal
3903 now. The plant continues to operate. There is no immediate
3904 impact to the grid in South Florida. And I would expect that
3905 review to -- I am not sure of the specific delays. I would
3906 be happy to get back to you --

3907 *Mr. Dunn. Yes, I -- it is not the impression that I am
3908 getting from our power generators in Florida.

3909 So another question. What actions do you think you can
3910 take going forward to make sure the relicensing decisions get
3911 back on schedule, since you don't know they are off schedule?

3912 We need to follow up with each other on this, because

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3913 this is a point of some pain and contention.

3914 *Mr. Hanson. Thank you. No, I think we should -- we
3915 can and we should get more efficient on subsequent license
3916 renewals as we go through these. And I do agree that we need
3917 to risk-inform that license renewal review process.

3918 *Mr. Dunn. Did you have some input?

3919 *Ms. Caputo. Yes. I won't comment on Turkey Point in
3920 particular, because it is a subject of an ongoing
3921 adjudication. But in general, when it comes to subsequent
3922 license renewal, the process at Turkey Point is in, license
3923 extensions fundamentally hinge on aging management, and the
3924 aging management programs have been established and in place
3925 for decades, and we have significant experience with them.
3926 So --

3927 *Mr. Dunn. We are under the impression you keep
3928 changing the rules of the game.

3929 *Ms. Caputo. That was on the environmental review side.
3930 I believe personally that going forward with subsequent
3931 license review, given this experience and the established
3932 timeframe that these aging management programs have been in
3933 place, we should be able to achieve significant efficiencies

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3934 in subsequent license renewals.

3935 *Mr. Dunn. Well, I would certainly like to see that
3936 happen.

3937 Mr. Chairman, what I am looking for is a commitment that
3938 -- no more delays in relicensing this plant as long as it is
3939 performing as per specs.

3940 *Mr. Hanson. I am happy to commit to no additional
3941 delays.

3942 *Mr. Dunn. Thank you, sir. You may expect to be
3943 hearing from other members of the Florida delegation, I am
3944 sure.

3945 With that, Mr. Chairman, I yield back.

3946 *Mr. Duncan. The gentleman yields back now. Now I will
3947 go to Mr. Carter from Georgia.

3948 *Mr. Carter. Thank you, Mr. Chairman, and thank you for
3949 allowing me to waive on, and thank all of you for being here.
3950 This is extremely important.

3951 Full disclosure, I am a big advocate of nuclear energy.
3952 As all of you know, the State of Georgia just started up two
3953 reactors -- started up one and about to start up another one.
3954 We are very proud of that. We feel like it is safe, it is

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3955 secure, it is reliable, it is clean. It just -- we are just
3956 very proud of that. And I am very, very happy that my state
3957 continued on with that, albeit through, obviously, as you
3958 are aware, very -- a lot of obstacles. But nevertheless, we
3959 got there.

3960 I am also encouraged by recent steps that the NRC has
3961 approved, and that is the first advanced SMR nuclear design
3962 and breakthroughs in fusion. All of those are encouraging to
3963 me. So I am excited, to be quite honest with you, about what
3964 the future holds.

3965 And I see Europe, and I have been to Europe, and I have
3966 been with the Conservative Climate Caucus, and witnessed what
3967 I have seen over there. Unfortunately, they have -- to me,
3968 they have made some serious errors in that they have allowed
3969 their policies to get ahead of their technology. And a lot
3970 of the countries over there -- not all of them, but a lot of
3971 them -- have closed down their nuclear plants, and now they
3972 are having to revert back to coal and to other forms of
3973 energy that they didn't want to have to use as a result of
3974 letting their policies get ahead of their technology.

3975 But France is a leader in the space. We know that.

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3976 France is committed to nuclear. So I am excited about that.
3977 And Finland just finished Europe's largest nuclear reactor.
3978 So -- giving them some independence from Russia, and that is
3979 certainly something that we have got to be aware of on the
3980 world stage, is our reliance on Russia and China.

3981 One of the things I wanted to talk about is a bill that
3982 Representative Scott Peters, a Democrat, and I, a Republican,
3983 have, a bipartisan bill, obviously, and it is called the
3984 Global Nuclear Energy Assessment and Cooperation Act. And
3985 this is a bill that will take a multi-pronged approach to
3986 promoting nuclear energy around the world.

3987 First of all, it will prohibit the import of fuels from
3988 adversarial nations like Russia and China. And we do need to
3989 have energy independence. And I am -- I think this is a good
3990 move on our part.

3991 Secondly, introduces a program, the International
3992 Nuclear Reactor Export and Innovation Branch, that the NRC
3993 Commission to -- would have to focus on international nuclear
3994 efforts, including training and sharing expertise with our
3995 allies. We need our allies in this area, and I think you all
3996 -- I hope you all -- recognize that and agree with that. It

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3997 would inspire coordination, research, and development of the
3998 U.S. and our allies, so we can create a safe and secure world
3999 and have energy independence without having to depend on our
4000 adversaries.

4001 So I wanted to ask you, Commissioner Hanson, there is a
4002 growing appetite for nuclear power around the world. And
4003 clearly, we would much rather help provide our allies than
4004 Russia and China, who will use them as leverage. And we have
4005 witnessed that with Russia already. How does having a robust
4006 international market for nuclear technologies benefit the
4007 American nuclear industry?

4008 *Mr. Hanson. Yes, thank you, Congressman. Let me just
4009 say we are working closely with our allies on this. My phone
4010 is quite literally ringing off the hook for folks who want to
4011 come and interact with the NRC on U.S. technology. And we
4012 are providing the kind of training and assistance that you
4013 mentioned in our [sic] bill.

4014 I think, as we think about the market pull for
4015 standardized designs in reactors, having multiple areas of
4016 deployment, whether that is, you know, you combine -- if you
4017 think about the GE BWX 300, that being deployed both in the

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4018 U.S. and in Canada, well, that contributes to the economy of
4019 scale that makes that deployment very economical.

4020 Well, you combine that then with what the polls are
4021 looking at -- I am going to meet with my -- and sign an
4022 agreement with my Polish counterpart tomorrow morning,
4023 actually, to continue our cooperation there. Then that is an
4024 additional market pull that, again, increases the economics
4025 of that, makes the reactors ultimately, I think, cheaper for
4026 us domestically, but also then extends our influence.

4027 We know that deploying reactors around the world is a
4028 100-year relationship. I think it is important to the --

4029 *Mr. Carter. So I don't want to put words in your
4030 mouth, but it sounds to me like you feel like the NRC plays
4031 an important role in facilitating this.

4032 *Mr. Hanson. I have advocated that the NRC should be
4033 part of the value proposition in U.S. nuclear --

4034 *Mr. Carter. Commissioner Wright, do you want to
4035 comment on that?

4036 *Mr. Wright. I mentioned earlier I was in Romania when
4037 the NuScale announcement was made, and was visiting with
4038 them, and they need our help. And we have got to be timely

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4039 and --

4040 *Mr. Carter. We need them.

4041 *Mr. Wright. We do.

4042 *Mr. Carter. We need each other.

4043 *Mr. Wright. Yes, we do. And in fact, there was talk
4044 that NuScale might be done there before it was built here,
4045 and that we would be learning from each other --

4046 *Mr. Carter. Good, good. Well, thank you all. And
4047 please, look at this legislation because it is with the best
4048 of intentions -- and of course, I know about intentions.

4049 But nevertheless, we need to have energy independence.
4050 And nuclear energy is one of the ways that we can have that.
4051 And again, I couldn't be prouder of the State of Georgia for
4052 what we have done with our nuclear reactors.

4053 Thank you, Mr. Chairman, and I yield back.

4054 *Mr. Duncan. The gentleman yields back. And seeing
4055 there is no further members wishing to ask questions, I want
4056 to thank all the witnesses and the commissioners for being
4057 here today for your answers, your comments, your statements.

4058 As you see, on both sides of the aisle we are very
4059 interested in the propagation of nuclear power across the

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4060 country to meet Americans' energy needs. We are going to
4061 continue to press forward, continue the oversight, but
4062 continue to work with NRC for the future of nuclear power in
4063 this country.

4064 And so, pursuant to committee rules, I will remind
4065 members that they have 10 business days to submit additional
4066 questions for the record. And I ask that witnesses submit
4067 their responses within 10 business days upon receipt of the
4068 questions.

4069 And with that, thank you once again, and we will stand
4070 adjourned.

4071 [Whereupon, at 1:22 p.m., the subcommittee was
4072 adjourned.]