

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

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MEETING WITH THE ORGANIZATION OF AGREEMENT STATES (OAS)  
AND THE CONFERENCE OF RADIATION CONTROL PROGRAM  
DIRECTORS (CRCPD)

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THURSDAY,

MAY 18, 2023

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The Commission met in the Commissioners' Hearing Room,  
at 10:00 a.m. EDT, Christopher T. Hanson, Chair, presiding.

COMMISSION MEMBERS:

CHRISTOPHER T. HANSON, Chair

JEFF BARAN, Commissioner

DAVID A. WRIGHT, Commissioner

ANNIE CAPUTO, Commissioner

BRADLEY R. CROWELL, Commissioner

ALSO PRESENT:

BROOKE P. CLARK, Secretary of the Commission

MARY SPENCER, Acting General Counsel

OAS and CRCPD LEADERSHIP:

KEISHA CORNELIUS, Environmental Programs Specialist

IV, Radiation Management Section, Land

Protection Section, Oklahoma Department of

Environmental Quality (OAS Chair-Elect)

PATRICK MULLIGAN, Assistant Director, Radiation

Protection Element, Division of Climate, Clean

Energy, and Radiation Protection, New Jersey

Department of Environmental Protection (CRCPD

Past Chair)

AUGUSTINUS ONG, Administrator, Radiological Health

Section, Division of Public Health Services,

New Hampshire Department of Health and Human

Services (OAS Past Chair)

STEVE SEAGER, Manager, Chattanooga Field Office,

Division of Radiological Health, Tennessee

Department of Environment and Conservation

(OAS Chair)

JEFF SEMANCIK, Director, Connecticut Department of

Energy and Environmental Protection, Radiation

Division (CRCPD Past Chair)

RIKKI WALLER, Senior Radiation Physicist, Laboratory

Improvement Section, Idaho Bureau of

Laboratories, Division of Public Health

Laboratory Improvement, Idaho Department of

Health and Welfare (CRCPD Chair)

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## PROCEEDINGS

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10:01 a.m.

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CHAIR HANSON: Good morning, everyone. It's great to be with you. I'm convening the Commission's Public Meeting with the Organization of Agreement States, or OAS, and the Conference of Radiation Control Program Directors, or CRCPD. In this meeting, we'll hear from these two organizations on their views of materials policy and regulatory issues that are of interest to them and to the NRC.

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It's a great pleasure to have these meetings. The relationship that the NRC has with both organizations is really vitally important, and I hope that's demonstrated by our enthusiasm and willingness to attend OAS and CRCPD meetings every year. And I get a little bit of joy out of this. I think this is maybe Commissioner Wright's favorite meeting of the year, and it comes through, and I think you'll get to see that in his remarks. But I know we all also really appreciate you all being here.

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With that, I'll ask my colleagues if they have any comments they'd like to make. No. Okay.

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Well, we're going to get rolling. I understand we're going to start with you, Steve Seeger, who is the manager of the Chattanooga Field Office for the Division of Radiological Health at the State of Tennessee. And then I understand you all will just kind of proceed through. You'll make your remarks, and we'll talk about all the things you have to talk about, and then we'll have questions from the Commission.

24

So with that, Steve, off to you.

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MR. SEEGER: Thank you so much, Chairman. Can you hear me? Thank you so much, Chairman Hanson, and thank you,

1                    Commissioners, for inviting us today. On behalf of both OAS and the CRCPD, I  
2                    just want to open our presentation here and thank you for the opportunity to  
3                    speak with you on behalf of all of our interest shared across the National  
4                    Materials Program.

5                    The states' partnership with the NRC and the National  
6                    Materials Program is a critical piece to the effectiveness of our shared missions  
7                    of protecting the public, workers, and the environment across the many aspects  
8                    of radioactive material in the nation. OAS and the CRCPD share common  
9                    priorities in radiation protection and we work collaboratively to promote  
10                  coordinated messages, and we try to reflect each organization's perspective in  
11                  a shared platform. And you'll see that today our coordinated discussions of  
12                  topics is an example of these efforts, and so, as they share the discussions of  
13                  these topics from both the OAS and CRCPD, it will be presented by the Board  
14                  members and Board leadership from each organization but is a combined  
15                  presentation style.

16                  Today, you're going to hear from the chair, the past chair, and  
17                  the chair-elect from each organization. I'm going to start our first discussion  
18                  with updates and activities for the National Materials Program.

19                  I am Steve Seeger from the state of Tennessee, the  
20                  Radiological Health Program, and I'm also the current OAS chair. And do we  
21                  have slides or -- okay. And we can go to the next slide. And the next slide after  
22                  that. Okay. Thanks. And then the next after that.

23                  Well, currently Agreement State programs are responsible for  
24                  nearly 90 percent of the material licensees nationwide. This will only continue  
25                  to grow toward the states. The NMP is prepared to support further shifts in  
26                  regulatory responsibilities. There are challenges, namely the dedication of

1 state resources to support national activities. That said, the NMP has made  
2 progress over the years.

3                         The NRC provides opportunities through working groups,  
4 rulemaking, establishing priorities, and supporting frequent communications. I  
5 want to extend a special thanks to Kevin Williams for meeting and  
6 communicating with the OAS Board on a regular basis. We must continue to  
7 build on this progress to further strengthen the National Materials Program and  
8 our co-regulatory partnerships. Each of us bring unique expertise and lessons  
9 learned that can be shared for more effective regulation for our country's  
10 radioactive materials.

11                         Next slide. Pictured here is the current navigation page.  
12 NRC staff, contractors, and especially the co-champions are working towards  
13 an interactive platform for communication across the NMP. This will be a  
14 resource for historic information, guidance, upcoming events, and any other  
15 useful information for the NMP members.

16                         Next slide. Every year, NMP leadership meets to review our  
17 goals and priorities. Members from the NRC, OAS, and CRCPD discuss  
18 objectives, measure progress on past priorities, and ensure future tasks align  
19 with our overall mission. This includes innovation for IMPEP. We have an  
20 IMPEP working group which was formed and is currently meeting to better  
21 leverage technology and streamline our reviews.

22                         Next is technology enhancements. Technology can impact  
23 the entire NMP. Web-based licensing continues to evolve for those that are  
24 utilizing it, expanding NMP's licensing and inspection capabilities.

25                         Jeff will discuss workforce development and resources  
26 sharing later in his presentation, but we need to focus on recruiting, training,

1 and retention of our current NMP staff. The NMP relies almost exclusively on  
2 the training provided by the NRC, and we thank you for that ongoing  
3 commitment to the critical mission. Finally, we want to develop metrics on a  
4 broad scale that can demonstrate the NMP's capability in meeting its mission.

5 Next slide. As I began my presentation, the NMP is made up  
6 of over 40 different regulatory partners, and we are still expanding. Though  
7 each of our programs have unique strengths and weaknesses, through  
8 collaboration, we will improve in our roles as regulators.

9 This slide provides a few examples of how NMP members  
10 come together to support one another. First, communication sharing. This is  
11 necessary to discuss industry trends, new technologies, incidents, or lessons  
12 learned, and to request assistance. With regard to IMPEP, we work together to  
13 improve the NMP's overall performance. With NRC and state members serving  
14 on IMPEP reviews, we increase regulatory knowledge and consistency across  
15 our programs. Finally, by contributors. The NMP is vast and diverse and we  
16 thrive when everyone can contribute. We achieve this in ways already  
17 mentioned but specifically through working groups, centers of excellence,  
18 commenting on regulation and guidance documents, and by participation in  
19 meetings.

20 Next slide. I'd like to end by highlighting a few of our past and  
21 upcoming events. CRCPD just held our conference last week in Houston,  
22 Texas, and next year they will hold their conference in Jacksonville, Florida,  
23 and that will be May 20th through the 24th. For OAS, we met last August in  
24 Dallas, Texas. We will be holding our next meeting in Seattle, Washington  
25 August 7th through the 10th, and the weather should be really good that time of  
26 year. And the hotel is really nice for staying at. It is on the top of a hill, so

leaving to go walk around town is good but coming back is a challenge.

The co-champions, Duncan White and Santiago Rodriguez,  
have hosted a number of virtual meetings for NMP members. These are called  
Champion Chats, and participation levels are great. These chats provide an  
opportunity to engage on topics of interest between the NMP partners to allow  
participation from staff at any of our organizational levels. I want to extend a  
special thank you to Duncan and Santiago for organizing these chats.

8 The NMP also meets more formally through government-to-  
9 government meetings, usually to discuss a particular policy or regulatory matter.  
10 These have proven an effective means to disseminate information and to  
11 engage with our NMP partners.

That is all for my part, and thank you again for this opportunity. And next up, I'll turn it over to Pat Mulligan, the CRCPD past chair from New Jersey, and he will be speaking on CRCPD initiatives and accomplishments.

16 Thank you.

17 MR. MULLIGAN: Thanks, Steve. Good morning,  
18 Commissioners, and I want to echo Steve's comments. We really do  
19 appreciate the opportunity to be here and provide you with updates from our  
20 organizations and, clearly, the level of support that you've shown us throughout  
21 the day, taking time out of your busy schedules, demonstrates how important  
22 this is to you, and we really appreciate that.

23 So, again, I'm Pat Mulligan. I am the Program Director for  
24 Radiation Control in the state of New Jersey. I am the past chair for CRCPD; I  
25 rotated off last week. So I'll be providing you an update on some of the  
26 initiatives and projects we've been involved with over the past year to give you

1                   an idea of just the highlights of some of the progress we've made over the past  
2                   year.

3                   You can go to my first slide or second slide, I think.

4                   Each year, the Board identifies five of our goals and  
5                   objectives to become priorities for the year that we focus on. And last year, as  
6                   the chair, we picked out five, and I believe that we've made a lot of progress  
7                   towards completing those goals. First was be proactive in handling new issues,  
8                   and that's clearly demonstrated and I'll go through a few, but we've got a  
9                   number of new committees and tasks force to handle emerging issues and new  
10                  technologies within CRCPD, and we work collaboratively with all the federal  
11                  agencies in handling those new issues and get support from them.

12                  Promoting opportunities for participation and committee  
13                  activities. Again, we've got a number of new committees. We put calls out for  
14                  participation on those committees, and we get great responses. All of our  
15                  committees now are fully staffed and active, so it doesn't take long once we  
16                  spin up a new committee to get folks that are willing to volunteer to participate.

17                  Providing training opportunities. I know that we leverage  
18                  training opportunities significantly from NRC, and we appreciate the opportunity  
19                  to get our new staff trained. And so we look forward to making sure that that  
20                  process continues. But we also have a committee that is dedicated to  
21                  identifying training across all modalities and we're trying to put together like a  
22                  one-stop shop so that people can look through CRCPD and find the training  
23                  that they need to enhance their daily operations. And then continued enhanced  
24                  relationships between CRCPD and OAS. I know that, collaboratively, we  
25                  worked with OAS and with NRC on a number of issues. One of them over the  
26                  past year, the source security rulemaking and then, right now, we're got a new

1 committee that is addressing materials licensing, so we're looking to get some  
2 work done. So the collaborative effort remains strong between all of our  
3 organizations.

4 Next slide, please. We've done a lot in the international  
5 community, too. We've just, last year in October, extended our practical  
6 arrangement with the International Atomic Energy Agency, and we've been  
7 doing a lot of work with them. In the previous agreement, there were three  
8 areas that we focused on: NORM; radon; and radiation protection of patients,  
9 especially for new and emerging technologies. This year, we're focusing on two  
10 new areas, and that would be radiation protection for non-food commodities  
11 and then also radioactivity in normal food. So we're going to take a look at that  
12 with the international community, and so, hopefully, we can come up with some  
13 projects where we can get some outputs so that, internationally, we can get  
14 some consistency for those issues.

15 Next slide, please. We've also participated in the IAEA on the  
16 safety standards report. I know that Ruth McBurney, our executive director,  
17 and Dave Allard participated in revising the Safety Report Series Number 34,  
18 which covers sealed and unsealed sources. And we've also worked with the  
19 IAEA on the topical session for radiation safety in non-food commodities. Lisa  
20 Bruedigan from our program and Kevin Williams, on Thanksgiving Day,  
21 attended that meeting last year in Vienna, so we appreciate them giving up their  
22 holiday to represent us.

23 Next slide, please. We've also recently participated in a  
24 series of three basic safety standards workshops. We had representation,  
25 there was one in South America, there was one in Europe, and then there was  
26 one recently in Africa, and CRCPD had representation at those workshops.

1       And those workshops were to address issues for existing radiation exposure  
2       issues nationwide or worldwide, including radon, NORM, and others. So they're  
3       working towards coming up with some consistent guidance internationally for  
4       basic radiation safety standards.

5                     Next slide, please. I'll go through some of the committee  
6       work. One committee that we're particularly proud of is our ROSS program, the  
7       Radiological Operations Support Specialist. And that's to promote a cadre of  
8       subject matter experts in health physics to share in the event of response to a  
9       radiological emergency. We know that no state or area or region is going to  
10      have a sufficient number of people, so we're trying to get a cadre of people that  
11      we can pull from to supplement our response efforts. And so they've been  
12      doing a lot of work to try to help the ROSS program become more state-run.  
13      We recognize that we can't continue to operate as an organization and hold it in  
14      one place, so we're putting more of the responsibility for developing those  
15      programs in each state. We've identified state ROSS coordinators that are  
16      going to help grow and maintain the number of ROSS's in each of those states.  
17      And we expect that, by the end of this year, we'll probably, nationwide, have  
18      between 300 and 400 ROSS specialists that can assist, so that will be a  
19      significant resources in the event that there's a response required or any type of  
20      radiation emergency.

21                     Next slide, please. We've been working diligently on our  
22      exemption process for DOT. We've revised both of our forms, one for  
23      radioactivity in scrap and the other for radioactivity in solid waste. Those forms  
24      are now fillable. We got input from the Department of Transportation. We also  
25      got input from the industry, as well. So now we're all on board with the  
26      standard form that we can use online that makes life a lot easier. And both of

1       those renewals are due this year, and we are on track for getting special  
2       permits renewed with the Department of Transportation, so there won't be any  
3       gaps in transportation of materials.

4                     Next slide, please. We've done a lot of work in the past year  
5       on our Suggested State Regulations Council. They've really been doing some  
6       great work to get all of our suggested state regulations up to speed. We  
7       recognize that Part C, licensing of radioactive materials, needs a major  
8       overhaul, and we're starting to work on that. We're developing a guidance  
9       document on Part N, which is for TENORM. Rather than providing suggested  
10      state regulations, since states are so different on TENORM issues, we're going  
11      to try to provide a high-level overview of TENORM so that states can follow that  
12      and adapt to their own specific needs.

13                   On Part X, we just finished a major overhaul which was long  
14      overdue, and that's now finished. The interesting thing about Part X was it was  
15      the first time that the CRCPD used a public input process to get feedback from  
16      our constituents, colleagues, and the industry on that document, which we used  
17      the NRC as a model for that and I think it worked pretty well so we're going to  
18      try to incorporate that into our future updates of suggested state regulations.

19                   And then Part G, we're in the process of updating that to  
20      incorporate all the NRC changes to 10 CFR 35 since it was last updated in  
21      2003. So we're getting there. We're getting all of our suggested state  
22      regulations up to date.

23                   Some of the other things that they've accomplished is now  
24      they've got all of their forms for the suggested state regulations online, so that's  
25      good for us. And I think one thing that's beneficial to both organizations is they  
26      developed a document to crosswalk our suggested state regulations with the

1 NRC rules so that it's easily referenced when we get into our suggested state  
2 regulations back to the NRC's regulations, so I think everybody is finding that  
3 really helpful and it was a great tool that was developed in the past year.

4 We've also got a full cadre of people for our RATS  
5 Compatibility Tracking Workshop, and what that does is just make sure that our  
6 suggested state regulations are compatible with the NRC regulations. So that  
7 committee is working to make sure that we're aligned. And we've developed  
8 and implemented a system for consistent review so that we don't fall behind on  
9 updating any of our suggested state regulations. So that was a major  
10 accomplishment.

11 And I do want to mention kudos to the NRC for the way that  
12 the SLO conference was handled this year. I think that, you know, it originally  
13 came out that there wasn't going to be one and some folks spoke up, and there  
14 was an immediate response. And I think that says a lot about how well the  
15 NRC listens to the stakeholders, and there was immediately a public meeting  
16 and a decision made, and that all happened within a couple of weeks. I was  
17 really impressed with the way that that was handled, so excellent job. Thank  
18 you.

19 And that concludes my comments, so I'm going to turn it over  
20 to our next presenter, Auggie Ong from New Hampshire.

21 MR. ONG: Hi. Good morning, Commissioners, and thank  
22 you for the opportunity for us and for myself to come to this meeting to provide  
23 you with the emerging technologies, especially in the area of fusion where, in  
24 fact, the Agreement State members, for those who do the preliminary licensing,  
25 not having the license already in place for the emerging technology of fusion.

26 And that being said, I have volunteered to provide you with

1 the understanding coming from the Agreement State members that the kinds of  
2 trials and tribulations that they have gone through in order to begin the licensing  
3 of this new kind of a technology and, so far, is only simply proof in concept.  
4 That being said, the potential for the future energy protection in this country is  
5 so great that we cannot simply ignore the fact that there are numerous  
6 challenges facing both in terms of scientific understanding of fusion, how to  
7 generate that amount of plasma confinement, which certainly is not the topic of  
8 discussion. But that being said, there are so many challenges right now that  
9 still have to be overcome in order to make that technology available in a  
10 commercial environment.

11                   That being said, please, the first slide. And that's my topic.  
12                   And moving on to the second slide, please.

13                   So if you take a look at the diagram illustration, that's almost  
14 like a very simple pictorial description of what the facility using the fusion  
15 technology is able to do in order to generate the electricity. Simple illustration  
16 but the engineering problem is associated with the middle portion, and that is  
17 how you're, in fact, able to confine the plasma in such a way as it can be an  
18 ongoing commercialization of that aspect of it. And there are so many  
19 engineering challenges in order to make that happen. And this is simply the  
20 way of demonstrating, in fact, instead of a nuclear reactor using fission of  
21 materials, we are using deuterium and tritium in this case. So that being said,  
22 there are other illustrations, part of the illustration that shows you that it can be  
23 made self sufficient, meaning the input of critical materials, such as tritium,  
24 which is offhand right now, only 25 kilograms available. And the large  
25 consumer of that world inventory is the ITER reactor right now at this point.

26                   So moving on, next slide, please. And this simply, just for

1           those who have understanding of nuclear fission process, this is simply an  
2           illustration of using deuterium, which is on the left side -- I mean, the deuterium  
3           is on the right side and the tritium -- sorry. I'm looking with my glasses. I see  
4           three and two look very similar. My apology, folks, all right.

5                         So  ${}^2\text{H}$ , the superscript  ${}^2\text{H}$  is obviously the deuterium, and the  
6           subscript  ${}^3\text{H}$  is tritium. That being said, then how do you, in fact, causing these  
7           two isotopes of hydrogen to come together in that space such that then it could  
8           interact and form a new radionuclide, I mean not radio but another element,  
9           which, in this case, is helium and, of course, the production of neutron that  
10          would be also part of the product interaction.

11                         So one thing to keep in mind, though, all right, why deuterium  
12          and tritium are being used because these are the two isotopes of hydrogen that  
13          could interact in a confined pressurized environment at the lowest temperature  
14          possible, and that is a hundred million degrees Celsius. There are other  
15          potential radionuclides, a little bit heavier, to come together, but then we are  
16          talking about the temperature necessary for that interaction to take place could  
17          read the two million all the way to a billion Celsius. All right. So that's why the  
18          engineering possibly in these two isotopes is much easier.

19                         All right. That being said, then let's move on to the next slide,  
20          please.

21                         All right. So here is one of the pictures of Tokamak reactor.  
22          And I just want to say that, for the Agreement State members, we would not  
23          want the word reactor to be used or associated with the fusion devices. The  
24          reason why, you have to understand, too, a lot of our constituents are very  
25          concerned with fission nuclear plant, nuclear reactors. So in order to avoid that  
26          kind of confusion for our general public, we'd rather use the word devices so

1           that then there's no negative association with the term itself that would generate  
2           that worrisome radioactive material uncontrolled release into the general  
3           environment, thereby causing damages, economic damages, and also extreme  
4           public exposure from the uncontrolled release. So by using the word device,  
5           then simply we would do away somewhat from the negativity associated with  
6           the fusion technology.

7                         But in any case, so the whole point about this slide is that, for  
8                         the technology to be practical, all right, or doable is that the Q, which is the  
9                         physics letter to designate the net input, the energy that is required to put into  
10                  the system and generally able to get excessive energy out of the system, all  
11                  right, the Q will have to be equal to one or greater. Just the whole point about  
12                  the Q. And right now, for practicality of doing anything like that, we have  
13                  reached Q equals to one, so that's why it's a proven concept. So far, we have  
14                  reached that milestone, but to make it practical, so to speak, but not  
15                  economically practical but practical in terms of able to persist with that  
16                  technology, Q has to be equal to five. And then for commercialization, all right,  
17                  which is, so far, is somewhat beyond what our capabilities are able to do, Q has  
18                  to equal to ten to make it commercially viable. You have to put in the money.  
19                  You have to capitalize all the money put into installing the plant and making it  
20                  workable, Q has to reach ten in order for people to start making money, for the  
21                  companies to make money.

22                         All right. Let's move on then to the next slide. So, so far, as  
23                         you know, back in December, the news that came out that got everybody  
24                         excited, all right, and that is the National Ignition Lab in Lawrence Livermore  
25                         Laboratory able to demonstrate that their device, which is not intended to use  
26                         really for commercialization but the proof of concept that, in fact, they're able to

1 achieve a series of high-energy lasers into a confined space to generate the  
2 pressure and temperature to cause the DT reaction, and they're able to  
3 generate the Q equals 1.5. All right. That's what the newspapers said and  
4 that's what their website said.

5                   But what's not being said, and we have to understand the  
6 problem with this, is that, for those who want to, before moving on to the next  
7 slide, I just want to point out the amount of -- back to the previous slide.  
8 Forward one slide. Yes, stay there for a little bit because I just want to mention  
9 to you what's the equivalent the layman person can understand is the amount  
10 of energy that was produced by that laser, all right, for the fusion is 3.15  
11 megajoules. And what is that equivalent? That is equivalent to four 100-watt  
12 incandescent lamp on for one hour. That's how much energy that was able to  
13 be produced, 3.15 megajoules. But that being said, it's only four light bulbs for  
14 one hour.

15                   All right. Move on to the next slide, please. Thank you.

16                   And so here are some of the points are somewhat ignored,  
17 and that is the overall total amount of electricity that was used to energize the  
18 lasers is hundreds of megawatts. So that, in itself, is really to show you that, in  
19 fact, there are still a lot of things that need to be ironed out. Just simply using Q  
20 value is not enough, all right, because there are so much more of the other  
21 energies that need to put in in order to make that happen.

22                   Move on to the next slide, please. So the more important part  
23 that may be of interest to the Commissioners, and that is, so far, the agreement  
24 states, they have taken the initiative of doing the licensing of these kind of  
25 emerging devices.

26                   Next slide, please. And here are some of the -- this is not a

1 complete list by no means, but these are the devices that are now in this  
2 country that are being installed in these demonstration projects across the  
3 country. And you notice that, for the most part, here are a few examples that  
4 are on your slides. And the projected, hopefully, they're able to achieve what  
5 they want, for example the Avalanche Energy which is promised to produce 5  
6 kilowatts electricity, electric. That's what the We stands for, watts electric. And  
7 there's a reason why it's a We instead of simply W. But that being said then, all  
8 the way up to the one that's in Danvers, Massachusetts that was relocated from  
9 another part of Massachusetts, and that is the Commonwealth Fusion Systems  
10 that's promising to produce 200 megawatt E.

11 Next slide, please. So here, in fact, the NRC has settled on  
12 the manner in which the current structure of the 10 CFR will be able to allow  
13 guidance and rules or regulations to enable the agreement states to continue  
14 onward to license the new technology, and that is the 10 CFR Part 30. All right.  
15 Finally, the NRC settled on that, and that provides the necessary framework to  
16 allow the licensing programs to start working on any of the licensed applications  
17 that are using this kind of technology. So I'm glad, and that was one of the  
18 concerns from the Agreement State members who may have business  
19 approaching their Agreement State partners to thinking about licensing the  
20 technology. But now, with Part 30 that's already in place, it eventually will carve  
21 out a separate portion of Part 30 to accommodate the fusion technology. But  
22 that being said, that framework is now beginning to take place.

23 Next slide, please. So here are some of the Agreement State  
24 members who have experienced, some are experiencing the kinds of difficulties  
25 and some of the problems that have overcome, you know, to do the licensing of  
26 the fusion technology. So in any case, they have examined the necessary,

1 what is the source of tritium that they're getting it from and the storage capacity,  
2 how much would they eventually need. So instead of allowing the businesses to  
3 say we need so much more of tritium for our devices, the agreement states  
4 have come up with plans to escalate the possession limit as they are able to  
5 demonstrate, in fact, they will continue to need more and more. So without  
6 giving them the highest amount, instead giving them enough limits on that  
7 tritium possession in order to allow for the demonstration of their project to take  
8 place and that, in fact, it still would not be too little to somehow inhibit the  
9 technology from going forward.

10                   So the other issue that has come up to the Agreement State  
11 members who are licensing the fusion technology, and that is the training  
12 issues. All right. Of course, training of other aspects that are required to  
13 become competent, inspectors and licensing, in this area, too, that is now a  
14 growing concern because the health physicists within the Agreement State  
15 programs, they don't really have the necessary physics background, nor the  
16 understanding enough of the technology, to really approve or disapprove the  
17 technology because it's not just one type of technology. They have multiple  
18 technologies in order to allow for fusion process to take place, so there could be  
19 multiple types. But then for understanding of this kind of technology and not  
20 some of the others, then there needs to be a training of competence and the  
21 experience necessary in order for the approval process to be in an orderly  
22 fashion without inhibiting the business application going forward, nor is it  
23 something that's going to be deficient such that then it would create a risk by  
24 improving the licensing without understanding what's that impact to the  
25 environment possibly, to the exposure to the employees because there are  
26 other processes taking place within the fusion reactor, fusion devices, that

1 could compromise the health and safety of the employees.

2                   And, of course, because of the technology involved, it does  
3 produce neutrons. And, certainly, that kind of experience with neutron  
4 exposures would be critical to the understanding of what are the hazards  
5 associated with the technologies are, so the health physicists who are  
6 reviewing the licensing process or the inspectors of those facilities would have  
7 the understanding of neutron exposures and what are the necessary  
8 dosimeters or dosimetry of the people who are exposed. So that, in itself,  
9 would require NRC possibly to provide that kind of training of neutron  
10 dosimetry.

11                  And, finally, the last slide, please. Second to the last slide.  
12                  And that is the Agreement State recommendations to the NRC under the  
13 National Materials Program, and that is, so far, it's all preliminary in terms of  
14 licensing and license of the technology, but we feel that they are still years  
15 away in terms of having any commercialization of this technology. That being  
16 said, then we have time for us to come together to provide that step-up scaling  
17 factor in terms of training and the necessary experience that could be gleaned  
18 from the technology so that we could share with the NRC folks the needs and  
19 what are the issues that are coming up and what can be done to solve that  
20 issue.

21                  And the whole point is that for the Agreement State members,  
22 those who are already licensing the technology, the recommendation is that the  
23 NRC, the Agreement State program, and also the industry to really start  
24 proactively come together before the finalization of the license itself for the  
25 technology. And so the recommendation is that come together early,  
26 interacting more frequently, to anticipate the issue that may arise from granting

1                   the application, so that then it could all work more smoothly so that then the  
2                   license approval process would be easier with the full understanding of all the  
3                   partners coming together.

4                   And thank you. The last slide is really to ask questions if you  
5                   have any. Again, thank you for the opportunity for doing a presentation.

6                   And the next presenter is Jeff, who was the past chair of  
7                   CRCPD and, hopefully, the connection has been made. Jeff.

8                   MR. SEMANCIK: Yes. Thank you, Auggie. All right. Good  
9                   morning. My name is Jeff Semancik. I'm the Radiation Control Program  
10                  Director for the state of Connecticut, which is soon to become the 40th  
11                  agreement state, and the former past chair of CRCPD. I'd like to thank the  
12                  NRC staff for accommodating my virtual participation, and I do send my regrets  
13                  for not being able to attend in person.

14                  So this morning I'll be discussing efforts underway to help  
15                  assist our members in meeting critical staffing challenges. Our recent survey of  
16                  members revealed some key findings regarding staffing challenges. Eighty-five  
17                  percent of our members are currently facing staffing challenges; 59 percent  
18                  expressed concerns about a lack of subject matter experts; and 74 percent  
19                  showed interest in sharing staff for training, inspection, and other tasks.

20                  Next slide, please. To address the needs of our members,  
21                  CRCPD has established a working group on health physics workforce  
22                  development and coordination. Chaired by Sarah Sanderlin from New Jersey,  
23                  the group includes federal resource individuals including Joe Nick from the  
24                  NRC. We have made progress since these slides were developed and now  
25                  have four members and five advisors representing programs from across the  
26                  country. The working group's primary focus is on leveraging our members to

1 address short-term staffing needs. This is crucial for maintaining continuity of  
2 operations in our state radiation control programs and ensuring the health and  
3 safety of our citizens. The group aims to identify available resources, establish  
4 processes for resource sharing, streamline credential verification, and maximize  
5 staff development opportunities.

6 Next slide, please. In fact, resource sharing is already taking  
7 place, but standardizing and streamlining the process will further enhance its  
8 efficiency. We are benchmarking current resource sharing arrangements and  
9 learning from existing practices. For example, some agreement states are  
10 successfully leveraging partnerships to complete evaluations of shield sources  
11 and devices. Another state has reached out to its neighbors to coordinate  
12 opportunities for on-the-job training for new inspectors that are needed to  
13 complete their qualifications.

14 Likewise, the New England Radiological Health Compact has  
15 established statutes that enables resource sharing among its six states,  
16 defining commitments, liability conditions, and processes for requesting and  
17 ensuring personnel with radiation protection expertise.

18 Next slide, please. Reciprocity in the recognition of training  
19 and qualifications is going to be crucial for successful resource sharing. While  
20 this can be done on a case-by-case basis, and, quite frankly, is right now,  
21 standardizing this process will facilitate the use of shared resources and  
22 improve auditability. We aim to develop a system that ensures qualifications  
23 are easily verified and recognized within the Integrated Materials Performance  
24 Evaluation Program, or IMPEP.

25 Ideally, we could develop a system that makes it both easy to  
26 verify qualifications and for the IMPEP team to verify qualifications of all staff.

1       In some recent discussions, the NRC representative to our board, Kevin  
2       Williams, suggested that we might be able to leverage the current NMP efforts  
3       in reviewing qualifications to develop an online approach to share inspector  
4       qualification similar to the way licenses could be verified in the License  
5       Verification System, LVS, and we would certainly welcome such a system.

6                     Next slide, please. So a simple example of resource sharing  
7       that can take various forms might include requesting remote lectures or training  
8       for subjects in which a state lacks experienced staff. It could be sharing staff  
9       for newer infrequently performed inspections and to support on-the-job training.  
10      For example, as Auggie talked about fusion being developed in certain states,  
11      well, as those fusion deployment expands, this might include pre-licensing visits  
12      or on-the-job training for fusion-related activities with resources for leading  
13      states. And, finally, we might be requesting topical experts from the NRC or  
14      other agreement states to support the licensing of new technologies.

15                    Next slide, please. We're also exploring ways to make  
16      members available, resources visible and easily searchable for those in need,  
17      integration with existing resources like the National Materials Program Centers  
18      for Excellence and the Health Physics Society will be considered.

19                    Next slide, please. Ultimately, our goal is to develop a system  
20      that caters to the needs of both the NMP and the broader scope of our  
21      programs, including NORM, x-ray, radiation-producing machines, and MQSA.  
22      We are committed to creating a unified approach that benefits all our members.

23                    Thank you. And with that, I'll turn it over to the next presenter.

24                    MS. CORNELIUS: Thank you, Jeff, and good morning,  
25      Commissioners. My name is Keisha Cornelius. I'm with the Oklahoma  
26      Department of Environmental Quality, and I currently serve as the OAS chair-

1           elect. I want to thank you for meeting with us today and for taking the time out  
2           of your schedules to discuss radiation protection issues that are very important  
3           to the National Materials Program.

4                         I'll be discussing rulemaking and policy efforts this morning.

5                         Next slide.

6                         OAS and CRCPD recognize and appreciate the efforts of  
7                         NRC over the past several years to improve the rulemaking process. The OAS  
8                         director of rulemaking is co-chair of the standing Committee on Compatibility  
9                         and a member of the Common Prioritization of Rulemaking. This allows OAS to  
10                  be involved in the rulemaking process at the very beginning. This continued  
11                  collaboration on innovative approaches to rulemaking have produced numerous  
12                  enhancements that provide opportunities to streamline the process while  
13                  maintaining the quality and effectiveness of the rules.

14                         As the NRC continues to work on enhancements to key areas  
15                  of the rulemaking process, we encourage the continued focus on the  
16                  importance of stakeholder input and involvement. OAS and CRCPD recognize  
17                  that there are many opportunities for collaboration on rulemaking, and both  
18                  organizations strive to make the most of these opportunities. We also  
19                  recognize and appreciate the efforts that NRC has made to be inclusive of the  
20                  state perspective and the many opportunities to provide feedback through  
21                  participation in working groups, task forces, and the opportunity to comment on  
22                  rulemaking.

23                         In 2022, 11 items were sent to the states for requests for  
24                  comment. Six items received comments and a comment letter was sent to  
25                  NRC. Currently, in 2023, three items were sent to the states for requests for  
26                  comments and two comment letters were sent to NRC. There is still one item

1 pending where comments have been requested, and they are due next month.

2 Next slide. These are just a few of the examples of the  
3 rulemaking that OAS has sent comment letters on. We appreciate the many  
4 opportunities we have during the rulemaking process to provide feedback.

5 Next slide. As NRC continues to work toward rulemaking  
6 enhancements in the coming years, we encourage you to continue to look for  
7 opportunities to engage state stakeholders in the process to ensure the  
8 development of timely and effective rules. This becomes even more important  
9 as the number of agreement states continues to grow.

10 Next slide. Rulemaking compatibility is an issue where many  
11 agreement states continue to have issues. This is evident in the number of  
12 states that continue to not be compatible in the legislation regulations and other  
13 program elements during IMPEP. Rulemaking is such a multi-faceted process  
14 for many states. The process can take many years, even if there are no issues.  
15 The issues that arise are sometimes not a direct effect of the program efforts to  
16 pass rulemaking. There can be problems with having quorums for a council,  
17 not having members appointed to councils, and governors taking time to sign a  
18 rule.

19 OAS proposes using a risk-informing compatibility process for  
20 rulemaking compatibility. We understand the appropriateness of a faster  
21 adoption time line, which is three years, for major rulemaking, such as the  
22 recent changes to 10 CFR 35, the medical rules. But making a three-year  
23 required adoption process for miscellaneous corrections is not necessary since  
24 it does not make a program not compatible if they do not adopt those rules.

25 To help with state compatibility, OAS also proposes having  
26 approved compatible license conditions accompany major rulemaking. This

1 effort can help states that cannot pass rules be compatible in a timely fashion.

2                         Finally, I would like to discuss some major rulemaking  
3 developing currently, which is the Category 3 quantity source security  
4 rulemaking. In the Government Accountability Office July 2022 document,  
5 Preventing a Dirty Bomb: Vulnerabilities Persist in NRC's Controls for Purchase  
6 of High-Risk Radioactive Materials, there were two recommendations made to  
7 the NRC for executive action by the chairman of the NRC. The first stated that  
8 the NRC should immediately require that vendors verify Category 3 licenses  
9 with the appropriate regulatory authority. The second recommendation stated  
10 the NRC should add security features to its licensing process to improve its  
11 integrity and make it less vulnerable to altering or forging licenses. For both  
12 these recommendations, NRC agreed with the recommended actions and  
13 intend to include steps to eliminate the vulnerability through the rulemaking  
14 process.

15                         Next slide. The proposed rule was sent to the agreement  
16 states for comment in October of 2022, and OAS sent a comment letter on  
17 November 10th, 2022. The applicable rule is scheduled to be adopted by  
18 October of 2023, and the NRC usually allows three years for agreement states  
19 to adopt and implement new regulations through their respective state  
20 rulemaking process. OAS anticipates an abbreviated adoption period for this  
21 rulemaking.

22                         In order to facilitate state compatibility with this proposed  
23 rulemaking, OAS drafted a license condition to be approved by NRC. The  
24 license condition approval was denied by NRC because the final rule has yet to  
25 be determined so that compatibility can be determined. OAS would propose  
26 that a compatible license condition accompany the final Category 3 rulemaking

1 so that programs can implement changes in an abbreviated manner. OAS and  
2 CRCPD are anxiously awaiting the final rule.

3 I would like to thank you for your time, and I would welcome  
4 any questions at the end. And now I will turn it over to Rikki from Idaho.

5 MS. WALLER: Thank you, guys, for having us. I'm Rikki  
6 Waller. I'm with the Idaho Bureau of Laboratories, a non-agreement state, so  
7 we appreciate your help in what we do in keeping our residents safe.  
8 I'm going to be talking about emerging issues that we have that are coming out  
9 and efforts to do collaborations in the future on these.

10 The first one I'd like to talk about is the Check-Cap. I know  
11 Kevin Williams spoke about this at our conference last week, and it's just  
12 another way for people to do a colonoscopy without having to go through the  
13 actual colonoscopy. It's a capsule that's swallowed, and there's detectors  
14 placed on the back of the patient, and it produces images that are saved. And  
15 then, at the end, when it comes through, when it comes down for it to be  
16 expelled, they get a notice.

17 The problem we have with this is the people that are  
18 marketing the Check-Cap don't have any plans to have these collected by the  
19 patient. They're supposed to be just expelled into the sewer system, and that's  
20 one of the problems that we have with this is you don't know how many people  
21 are using them, where they're at, where they're going. And a lot of people in  
22 sewage treatment facilities don't have a lot of training in radiation safety.

23 So that's our big concern with that. And several states in the  
24 country, their programs have been contacted by the Check-Cap people about  
25 getting approval for this in the states.

26 So the next one that we have that's really becoming big these

1 days is the use of isotopes on household pets. A lot of people really enjoy their  
2 pets more than probably their families, so they're looking for ways to keep their  
3 pets around longer, especially their pets that are experiencing cancers. And so  
4 a lot of that comes down to safety of not so much of the pet but of the pet's  
5 family because, you know, you take your dog to the vet, he has a procedure,  
6 you're going to want him close to you because, you know, he's not feeling well,  
7 but if he has seeds in him or if they've given him, for example, Iodine-131 for  
8 thyroid issues, I actually had somebody in my state call me about that, a  
9 veterinarian. So this is coming around more.

10                   But you're going to want that pet next to you, and it's probably  
11 not the best idea, but people, are they going to listen? Are the pet owners  
12 going to listen? What about the pet waste, how is that going to be disposed  
13 of?

14                   And so that's a lot of things that we need to kind of look  
15 forward to because there's going to be more of this happening with pets and  
16 isotopes in the future, and a lot of that is going to be, well, is the veterinarian  
17 going to inform the patient's pet parents how to dispose of the waste to keep  
18 them kind of isolated and away from the family. You know, little kids are always  
19 crawling around on their families' pets, and that's even more important to keep  
20 the little ones away from the pets when they come back from their appointment.

21                   Next slide. The brachytherapy biologically targeted  
22 radiotherapy in animals is an emerging technology that's really starting to come  
23 to the forefront. So like I just said, this is something that we need to just kind of  
24 be aware of and plan ahead for.

25                   On to the next one. DOT lost misplaced material tracking.  
26 Material shipments have been, they don't call them lost, they call them

1                   misplaced, and they can be misplaced for several weeks. And we have talked  
2                   to the DOT about this, and they're willing to work with us. The problem that  
3                   they have on their end is they have two employees in the entire Department of  
4                   Transportation that has any radiation experience at all. So we need to have  
5                   some type of, I think, conversation to make this a little more important. Those  
6                   shipped isotopes, especially if it's an isotope that's needed by a certain time in  
7                   order for it to be an effective treatment for a patient.

8                   And the DOT is very slow to intervene, but, like I said, they  
9                   only have the two employees that have any experience with radiation. So  
10                  maybe that could be a training issue on their end, as well.

11                  So the next part, this is my last topic and this is one that has  
12                  recently came out, and that is AI and radiation protection. And people like to  
13                  say that AI is coming, but, in our reality, AI is already here. And like anything  
14                  with technology, it has its benefits and it has its problems, as well. A lot of this  
15                  can be used to monitor radiation levels in real time and also one really good  
16                  application of AI is getting radiation treatment planning. It takes the -- let's go to  
17                  the next slide. One of the benefits of AI is it takes the human error out of the  
18                  equation and ensures that everything is done correctly.

19                  Also, some used in radiation protection may be vulnerable to  
20                  cyber attacks, which is the con of this. Just like anything with technology you  
21                  have, it does all these great things, but then, when it goes bad, it has the  
22                  potential to go really bad with cyber attacks and breaches, cyber security  
23                  breaches.

24                  And then there's the legal liability concerns, such as who is  
25                  responsible in case there are errors. Would that be an operator, or would that  
26                  be a programmer? We really need to establish clear guidelines to address the

1 ethical, regulatory, legal, and social implications of AI in radiation protection.

2 So to address that, CRCPD is forming a task force on AI  
3 because AI is a reality and the capabilities are rapidly advancing. So we're  
4 forming a task force to evaluate the impacts of AI on radiation protection. The  
5 charges have been drafted. We're in the process of establishing membership  
6 and advisors to this working group, and we plan to coordinate with CISA, the  
7 Cyber and Infrastructure Security Agency, to be contributors to this working  
8 group. And our end goal on this is to provide a white paper and  
9 recommendations on the use of AI in radiation protection.

10 And here's a fun fact. All those slides, they were actually  
11 generated by Jeff Semancik with the use of AI.

12 And that is all I have. And on behalf of OAS and CRCPD, I  
13 would like to thank you guys for your time and for listening. And we just  
14 appreciate being able to have this meeting. Thank you.

15 CHAIR HANSON: Thank you, Ms. Waller, and thank you all  
16 for your presentations. And thanks for Jeff for joining us remotely today.

17 We're going to begin questions with Commissioner Caputo.

18 COMMISSIONER CAPUTO: Good morning. Thank you all  
19 for being here. I agree with my colleague, Mr. Wright. This is always a great  
20 meeting to hear everything that's going on in the states, and so thank you for  
21 taking the time to share with us.

22 Auggie, it's always nice to see you again. You and I have  
23 good conversations on fusion, so thank you very much for your presentation  
24 today. But I also want to take a moment to just congratulate Ms. Cornelius and  
25 Ms. Waller. Thank you for the leadership roles that you're playing, and it's  
26 always good to see women leaning into leadership when it comes to radiation

1 protection in the nuclear field. So I really, really appreciate all the work that  
2 you're doing. It's great to see you here at the table.

3 I'm going to start with one observation. Our Agreement State  
4 program has long been established. It's clearly thriving. Three more states are  
5 going to join. But that means the pool of licensees that we, ourselves, are  
6 overseeing is shrinking, and so the cost of maintaining this framework is, as the  
7 Agreement State program becomes more popular, the burden is split among  
8 fewer and fewer licensees, and so that's a cost burden I think that we, as an  
9 agency, really need to examine about just the viability of continuing to have a  
10 shrinking pool pay for the entire regulatory burden.

11 I also want to take a moment to thank both NRC and  
12 Agreement State staff for work in providing support to the agreement states that  
13 have been experiencing some challenges in recruiting and retaining personnel  
14 over the last year. I understand that other agreement states, and we heard a  
15 bit about this already, and the NRC staff have supported agreement states  
16 having these challenges by providing some training, mentoring, sharing  
17 expertise, in particular in the areas of licensing, financial assurance, and sealed  
18 sources. So thanks to the NRC staff and Agreement State staff. I'm thrilled  
19 that everyone is working so well together to meet these challenges.

20 And it also touches on one issue that I continue to be  
21 concerned about, which is just a shortage of health physics professionals. So  
22 Mr. Semancik, you mentioned on slide 33, you talked about the Workforce  
23 Development and Coordination Committee and some of the activities put in  
24 place to facilitate sharing of resources and ideas on what can be done to help  
25 regulators work together. But can you provide your thoughts on what needs to  
26 be done to stimulate an actual, an increased supply chain of health physics

1 professionals?

2 MR. SEMANCIK: Yes, I can share my personal opinion. As I  
3 indicated, you know, right now we're focused on kind of that resource sharing.  
4 You know, it seems to me, across the country, there's kind of a couple of paths  
5 to consider. One is the number of health physics programs is certainly  
6 struggling in the university level, and we need to make sure that we're doing  
7 what we can to kind of stimulate those programs. At the same time, because of  
8 that, I think we also need to be looking at how do we bridge folks from other  
9 programs or backgrounds and bring them up to speed in the health physics  
10 knowledge that we need.

11 So, for example, in environmental protection agencies, we  
12 certainly have a larger number of people with environmental degrees. Is there  
13 a way to identify the gaps that could be bridged to bring people over from those  
14 fields into the other.

15 And then I would say, you know, again, in my opinion, the  
16 third one would be to look at maybe, not looking at full four-year degrees but  
17 maybe two-year degrees. There's a lot of local community colleges and  
18 associate's programs that provide good training. This is the path that the  
19 nuclear power industry is using to try to feed their health physics pipeline, as  
20 well, and maybe it will provide us, again, some targeted background with that.

21 But I think that's, you know, a lot where it goes. You know,  
22 obviously, we can talk about pay and other issues that we all have to deal with  
23 in the states, and that's also a factor. But I think it's a bigger factor that just a  
24 lot of folks don't know about this when they're looking at careers and trying to  
25 pick where they're going, and so we might have to be a little more creative on  
26 picking our source for those and adapting our training to match the source by

1 subsuming everybody is coming in as a degreed health physicist.

2 COMMISSIONER CAPUTO: All right. Thank you very much  
3 for that. Mr. Seeger, as you noted, the National Materials Program continues to  
4 expand. The agency is looking for ways to improve the program and prepare  
5 for the future. Mr. Seeger or anyone else who'd care to comment, where do  
6 you see opportunities where we can improve the program?

7 MR. SEEGER: I think mostly with communication. It's been  
8 really good with NRC and OAS and the Agreement State program, and just the  
9 main thing is getting good people, like we've been talking about, trying to share  
10 resources and how we can get states, when they have issues, to reach out and  
11 let other agreement states or NRC help, you know, get those programs back up  
12 to speed or whatever issues they're having. Like, if they have issues with their  
13 latest IMPEP, if they can reach out to other states and use some expertise from  
14 other states or NRC. I think that would help a lot.

15 COMMISSIONER CAPUTO: Okay. And you also mentioned  
16 revising the IMPEP process to be more risk informed. Can you just describe to  
17 me a little bit more about the challenges you see in the current process and  
18 where the opportunities might be to improve our risk informing?

19 MR. SEEGER: Well, Keisha is on a working group now. She  
20 might be better to answer that if she wants to.

21 MS. CORNELIUS: I'll take that. I think sometimes in the  
22 IMPEP process they lean too far into numbers and not exactly how the state is  
23 doing. I think taking some time to really delve into what is really making the  
24 state compatible and what is really the risk with the activities that we regulate.  
25 And the example I have is in the rulemaking process. If you haven't, I know that  
26 the CFR is opened twice a year and there are certain small corrections that are

1 made, and if you haven't adopted that as a state, does that necessarily make  
2 you not compatible? You're still compatible with the major rulemaking.

3 So having some leeway with things like that, I think, would go  
4 a long way. And seeing if you're not doing something as a state, what is the  
5 actual risk that has to the regulated community and not just be so focused on  
6 numbers but actually the work that the state is doing.

7 COMMISSIONER CAPUTO: Okay. Great. Thank you for  
8 that. Ms. Waller, you mentioned AI, and it's, like you said, it's everywhere. I  
9 have to admit my kids and my husband and I sat around, put it up on the big  
10 screen at home, and started posing some questions. It was a fascinating  
11 experience. Of course, my husband and I had read it in the paper and said,  
12 whoa, what's this all about, let's look at this and play with this. And, of course,  
13 the first thing out of my son's mouth was, oh, yes, we were doing that in school  
14 a few weeks ago.

15 So it is out there. It can be a tremendous asset. NRC staff  
16 recently issued a strategic plan focused on it, so have you folks, are you aware  
17 of that plan? Have you looked at that? Is that something that you're going to  
18 factor in to your review and decision-making on this?

19 MS. WALLER: I am going to refer to Jeff Semancik on this.  
20 He is our AI king, so, Jeff, can you help us out?

21 MR. SEMANCIK: Yes. While we haven't looked at it in detail,  
22 Commissioner, I think we're aware of the strategic plan. We're just trying to, I  
23 think that's probably part of the early charter with the task force is to look at  
24 what guidance is out there from multiple federal agencies, but the NRC, we've  
25 got FDA, CDC, and then kind of use this as our organization technical expert to  
26 kind of help us out a little bit.

1                   So I think we'll certainly incorporate what we've looked at with  
2                   that, but we haven't, you know, really used it in detail yet to formulate things.  
3                   So we're just in that beginning stage.

4                   COMMISSIONER CAPUTO: So in looking at this for state  
5                   agencies, this is not just about AI in the work that you're doing with us. This is  
6                   involving other federal agencies and other departments within the state, so this  
7                   is really broader than just our effort.

8                   MR. SEMANCIK: Yes, absolutely, because we want to make  
9                   sure we're benchmarking those efforts across the agencies, as well.

10                  COMMISSIONER CAPUTO: Okay. Thank you.

11                  MR. ONG: One thing, Commissioner Caputo.

12                  COMMISSIONER CAPUTO: Oh, sorry. Auggie.

13                  MR. ONG: Talking about AI, because I just want to make a  
14                  concluding remark, whether it's ready for prime time. And that was, originally, I  
15                  was going to intend to use AI to generate my PowerPoint presentation, so I  
16                  opened up the AI GPT account, all right, and I start off just to test the system  
17                  whether, in fact, it was able to generate what I needed to do my presentation,  
18                  and that is, you know, emerging technology, plus AI.

19                  So that being said, my first question was what is the function  
20                  of NRC's 10 CFR Part 35. The answer coming back to me was that NRC is a  
21                  regulatory agency for this country to regulate nuclear power plant license, so  
22                  Part 35 is the rule or regulation that regulates the licensing of nuclear power  
23                  plants. So when I saw that answer, I said, no, I cannot use this to generate my  
24                  slides. So thank you. It's not ready yet, I think, despite all that hype.

25                  COMMISSIONER CAPUTO: Well, and, at some point, I  
26                  suppose it may run headlong into the clarity of our regulations and how easily

1                   they're interpreted by AI. But thank you for that.

2                   CHAIR HANSON: Thank you. Commissioner Crowell.

3                   COMMISSIONER CROWELL: Thank you, Mr. Chair, and  
4                   thank you to all of our presenters today. This is my first Commission meeting  
5                   with our state partners, so I appreciate being here today, you being here today  
6                   and getting me up to speed a little bit more on how the state programs work. In  
7                   my life, immediately preceding joining the NRC, I was a state regulator in my  
8                   home state, Nevada, where I headed the Department of Conservation and  
9                   Natural Resources, so I have an affinity for what you do and appreciation for  
10                  what you do and that you all are doing more than, you know, you can  
11                  reasonably get done and are probably not getting paid enough either.

12                  That being said, I need a little bit of clarity here on how the  
13                  agreement states work. And is CRCPD, are all states members of that, even if  
14                  they're not Agreement State members? Okay.

15                  And then what is the difference in experience for, say, you,  
16                  Ms. Waller or Jeff for Connecticut who is looking at becoming an agreement  
17                  state. Like, you seem to get great value out of this partnership. What's the  
18                  incentive to become an agreement state or the incentive not to become an  
19                  agreement state?

20                  And, Ms. Waller, if you want to jump on that first.

21                  MS. WALLER: Well, to be honest, our radiation control  
22                  program in Idaho is very disjointed. We have strictly machines, ionizing  
23                  radiation-producing machines. Radon is somewhere else, and we don't really  
24                  have materials. We do have a liaison to INL that works for the state. And as  
25                  far as that, that's pretty much all we have.

26                  I think the staffing issue is probably one thing that would be a

1 deterrent to becoming an agreement state. Truly, the way our governor thinks,  
2 I'm surprised that we are not an agreement state because he's very states'  
3 rights and very feds needs to keep their hands out of Idaho, so I'm really  
4 surprised that we're not an agreement state.

5 COMMISSIONER CROWELL: It's funny you say that  
6 because I think the same way about Nevada that we are an agreement state,  
7 despite an overwhelming sentiment of similar kind of as in Idaho. But in my  
8 experience, as a state regulator, I know that, in the state of Nevada, we  
9 wouldn't have the capacity to do a lot of these things. I don't think we would  
10 have the capacity to regulate fusion, for instance, and we'd have to rely on  
11 others or the NRC to do that; or, as, you know, on some of the delegated  
12 programs through other federal agencies, like EPA, it also comes with enough  
13 money that you can hire and maintain staff to implement those programs. I'm  
14 getting the sense that way the NRC model works an independent agency that's  
15 fee based, the money used to support the Agreement State program isn't  
16 sufficient to, like, hire as many staff as you need to manage and run those  
17 programs. Is that fair?

18 MR. SEMANCIK: Commissioner, I would just kind of indicate,  
19 you know, Connecticut looked through what it takes to become an agreement  
20 state. We were able to work with the NRC to understand what kind of license  
21 fees were coming in for licensees in the states, resource requirements to do  
22 that. And we think we can certainly staff our Agreement State program and run  
23 it for less than the money coming in from license fees, even giving the licensees  
24 a small discount in that fee.

25 So I think part of it is a financial analysis. We certainly looked  
26 at that. Part of it is making sure we have kind of that compatibility across

1 federal with other states in our program that kind of prevents us from kind of  
2 running a set of regulations that may be a little bit different. And then we looked  
3 at, we think, our ability to interact with licensees in the state creates a kind of  
4 mixture. We have the right interaction with our licensees to understand their  
5 business is better able to respond. You know, certainly for a small state like  
6 Connecticut, there's no licensee we can't get to within two hours. If we have  
7 questions on a license, if we have questions on inspection, we can get right in  
8 there and be able to take those actions.

26 Has there been discussion or concern about that?

1 MR. ONG: Yes, in fact, if I may address that issue. And that  
2 is, in fact, what's taking place right now. There was a few, especially Wisconsin  
3 and Massachusetts, who shared the knowledge necessary to review fusion  
4 technology licenses. And, in fact, they have now proactively addressed that  
5 issue of sharing resources to become areas of experts for fusion technology so  
6 that any of the other agreement states who may not have the necessary  
7 knowledge, nor the experience in licensing the technology, there are now  
8 established resources available.

9 And so, for my part, I have already reached out to a couple of  
10 the agreement states that do have fusion technologies and what are the issues  
11 that they face when they license these technologies. So that being said then,  
12 any of the Agreement State members, too, who come across the fusion  
13 technology application, then, therefore, they will be able to reach out to the  
14 Agreement State members who have established licenses already in their  
15 current state.

16 So, therefore, that kind of knowledge will be shared with a  
17 white paper that's coming out from CRCPD and also now that, even in our own  
18 agreement state, organization of agreement states, have now begun to  
19 establish these areas of expertise or centers of excellence, thereby providing  
20 that kind of resources to other agreement states who may not have that kind of  
21 capability to begin to review licenses. So we will share the resources among  
22 both to our NRC partners and to the agreement state folks who are now facing  
23 this kind of conundrum of licensing technologies that are beyond the  
24 capabilities of the particular agreement states who are, for the first time, having  
25 to deal with the fusion technology license.

So we are there at the beginning. So they will grow as the

1 technology grows.

2 COMMISSIONER CROWELL: Got it. Thank you. And then  
3 my last question for whomever feels like they want to field it, one of the  
4 challenges is that each state is organized, you know, differently in terms of how  
5 their state departments and divisions are organized. And, oftentimes, the  
6 jurisdiction of the NRC, be it on the, you know, reactor side or the material side,  
7 falls within scope across various places, you know. Like, I see representatives  
8 here from environmental divisions within states and then from, like, public  
9 health or health divisions within states. Some states, those two things are  
10 together; other states not.

11 Does OAS play a role in helping bridge that divide and make  
12 sure states are talking to themselves across those jurisdictional, you know,  
13 intra-departmental coordination for states to make sure there's a fulsome  
14 picture in looking at radiation protection?

15 MR. ONG: If I may address that, that is true. The  
16 coordination does take place, even though on a monthly basis under the  
17 National Materials teleconferences where the Agreement State members bring  
18 issues for discussion. So that being said then, any of the differences among  
19 the radioactive materials programs that we do come together to talk about it,  
20 not just in the annual conferences but certainly during the monthly calls, too, so  
21 we could understand if there are major differences that would then cause some  
22 fissure within the national and federal programs, and that has not happened.  
23 All right. So we are in communication, and the teleconferences are very active,  
24 meaning there are many, many partners who are listening in and who contribute  
25 to the discussion.

26 COMMISSIONER CROWELL: Thank you. And I do plan to

1 attend the OAS this year and looking forward to it --

2 MR. ONG: Thank you.

3 COMMISSIONER CROWELL: -- walk up a tall hill a few  
4 times, so I appreciate that.

5 CHAIR HANSON: Thank you, Commissioner Crowell, and  
6 thanks again for everybody being here.

7 I wanted to kind of pick up on this notion of the National  
8 Materials Program potentially getting up to 50 states and thinking about that  
9 now and how that would work. And I know the NRC staff have been working on  
10 this issue, as well, and kind of exploring a lot of issues, but, you know, we have  
11 you all here and you have all of us here, so I wanted to kind of open it up to the  
12 group and get your thoughts about, you know, what we, as a commission, but  
13 also just the National Materials Program need to think about as we consider  
14 that hypothetical case of getting up to 50 agreement states, how support needs  
15 to change in various ways, et cetera. So I'll let anybody --

16 MR. ONG: Yes, if I may volunteer to answer that question.

17 And the reason why I want to volunteer on that is because, as you know, Huda,  
18 who is behind me, and certainly she's the chair to the emerging issue and the  
19 strategic planning for the National Materials Program. Her group has really  
20 examined exactly that kind of question where what would happen to the  
21 National Materials Program where NRC now controlling fewer and fewer of the  
22 licenses, reactor material licenses; and, therefore, from the projected model,  
23 eventually, all right, if more and more agreement states, more and more states  
24 becoming agreement states, the remaining few, then, therefore, what happens  
25 to the NRC space. And that, as it turns out, would still be equivalent, in terms  
26 of number of licenses under NRC control, would be equal to California.

1                   But that being said then, the issues that confronts all of us,  
2 especially NRC because you have your own budget limitations, too, how much  
3 can you afford, given that fewer licenses to support your program in addition to  
4 all of the Agreement State programs, even the newer agreement states that are  
5 planning to come onboard, the resources that are going to be demanded on  
6 NRC would be even greater. All right. The financial burden is going to be  
7 greater, and the cost sharing, is that a possibility with the agreement states not  
8 able to be financial equal partners with NRC to then hear we're demanding  
9 more resources from NRC; therefore, your budget is going to be bust, all right,  
10 to support the Agreement State program, what is the agreement state able to  
11 do in order to support its own training program. That's the biggest contributing  
12 factor to the budget. Where is the expertise? And the expertise right now is  
13 within NRC to provide all that top-down training to the agreement states who  
14 may, for the most part, lack the capabilities to become trainers.

15                   But, eventually, that problem will have to be confronted, and  
16 that is the Agreement State members need to come up with ways to become  
17 trainers without having solely rely on NRC. So, therefore, that may be an issue  
18 that we will be confronted soon enough.

19                   CHAIR HANSON: Yes, please, I wanted to ask, as OAS chair  
20 or chair-elect, excuse me, and, Rikki, also, I know you said you might not  
21 become an agreement state, but just, you know, for the sake of hypothetical, I  
22 wanted to hear from both of you.

23                   MS. CORNELIUS: I think OAS is excited to have more  
24 agreement states come on. And as we have more agreement states, the  
25 amount of collaboration between NRC and agreement states has to increase  
26 because all of the new technologies and most of the licenses will reside with the

1 agreement states. And the states are seeing it first. The states will have more  
2 expertise with the equipment that's coming out because they're seeing it first.

3 Yet, the rulemaking must come from the NRC because that is  
4 who the states have their agreement with and that's whose rules we must be  
5 compatible with. So it's going to make the collaboration that we have and the  
6 agreement state participation in these working groups and task force and the  
7 rulemaking groups increase.

8 But we would still need, because of the money issues, we still  
9 need NRC to provide training and things like that. We will still continue to need  
10 that.

11 CHAIR HANSON: If I could just follow-up on that, I want to  
12 make sure I understand what you're saying. It sounds like kind of more support  
13 resources, not resources necessarily money but in terms of people who can  
14 capacity build in state programs but also timely rulemaking from the NRC, right?

15 MS. CORNELIUS: Yes, yes.

16 CHAIR HANSON: So being able to kind of undertake multiple  
17 rulemakings at a time in order to get those out to the states. Do I have that  
18 right?

19 MS. CORNELIUS: Yes. And having more state people help  
20 with those rulemakings because that's the people that have seen the  
21 equipment.

22 CHAIR HANSON: Excellent.

23 MS. CORNELIUS: They have the resources to be able to  
24 help with that rulemaking.

25 CHAIR HANSON: Yes, yes. Okay. Very helpful. Ms. Waller.

26 MS. WALLER: I agree with what Keisha said. Training would

1                   be the big one. And a lot of the problem for us would also be personnel, finding  
2                   somebody qualified to do that type of work.

3                   CHAIR HANSON: Okay. Anyone else? Okay. Thank you.

4                   Pat, Mr. Mulligan, I think this is for you. I wanted to hear more  
5                   about the ROSS program and how that's working functionally. Let me see if I  
6                   can find my question here. I wanted to hear, I guess, about kind of the  
7                   development and implementation of the task force in particular and how that,  
8                   you know, what were the drivers on that, kind of what was the impetus. Are you  
9                   getting significant interest on the part of more states? Kind of what's the, both  
10                  what's the origin of this and kind of what do you see as the trajectory?

11                  MR. MULLIGAN: I think, at least initially, the impetus for the  
12                  program was a recognition that we just don't have enough health physics  
13                  professionals nationally to fill the gaps that we're going to have should there be  
14                  a large-scale nuclear event. We're just going to run out of health physicists  
15                  locally very quickly.

16                  Recognizing that need, you know, we formed a committee to  
17                  start developing what the qualifications would be for a person to step into that  
18                  role if you needed one. And so they developed this program to qualify people  
19                  as radiological operations support specialists, and that was in conjunction with  
20                  both NRC, and FEMA was heavily involved in that, as well, to come up with the  
21                  qualifications, reviews, and the credentialing for that. That's been built into the  
22                  EMAC system, as well, so that it's a recognized asset within the resource  
23                  sharing aspect of any response.

24                  So we've passed all of those hurdles, and now they're in the  
25                  process and it's run by, you know, counterterrorism, CTAS, runs the training  
26                  program now. And what we're looking for, at least initially, it was let's get as

1       many people from state programs that are already sort of qualified to be, you  
2       know, higher-level ROSS specialists involved so we can build up a training  
3       team so that they can pass that knowledge on.

4                     So that's where we started was picking the low-hanging fruit  
5       to getting those folks in, and now we're really reaching out further than that. We  
6       recognize that, you know, just qualifying and credentialing state personnel is  
7       really not what we want to be because, if there's a large-scale event, those  
8       people are going to be not allowed to go anywhere, you know. If there's an  
9       event in Pennsylvania, the governor in New Jersey is not going to let me go  
10      anywhere to support that.

11                  So we're really reaching out through the Health Physics  
12       Society, through our CBRN units, through our civil support teams, and the  
13       medical community, as well, to look at where other expertise lies that we can  
14       bring into the fold. So we're training a lot of those people now to bring them in  
15       because those are really the people that can support the response from an  
16       external perspective without taxing any one organization's resources, as well.  
17       So we're really looking to branch out into that.

18                  CHAIR HANSON: I see. So was this partly, it sounds like,  
19       I'm hearing reciprocity in there maybe between states, but maybe that's not  
20       even the most important quality. It could just be the qualification on this. Yes,  
21       go ahead.

22                  MR. SEMANCIK: If I could, please, because I am trained in  
23       the process. But this came out of 9/11 and the national planning and the  
24       presidential planning directives. We looked at a couple of scenarios,  
25       specifically dirty bomb and nuclear detonation. And one of the gaps identified  
26       was not having enough radiological expertise.

1                   But where we are right now is this is fully integrated into the  
2                   national qualifications system. They're already recognized as FEMA types, and  
3                   so using any other process that you would use to request resources from other  
4                   jurisdictions via, as Pat indicated, EMAC, we could make requests across those  
5                   lines.

6                   Right now, we're up about 300 people trained and, quite  
7                   frankly, right now we just don't have as many classes as we have people willing  
8                   to do it. But the goal ultimately is to have each state with multiple type ROSS's  
9                   available kind of running independently. RAND just recently did a study, and  
10                  that was kind of one of the recommendations coming out of the study is to  
11                  make it state-level kind of control and to work on that.

12                  So we're working to get states. I think we have about of  
13                  ROSS trained, and I think about 38 states, maybe even more now. But we are  
14                  working on quite a number, and we integrate them into national level exercises,  
15                  state level exercises, local exercises at this point.

16                  CHAIR HANSON: Great. Thanks very much. Commissioner  
17                  Baran.

18                  COMMISSIONER BARAN: Well, thanks again to all of you for  
19                  being here. We really appreciate your partnership.

20                  Jeff, maybe I'll just stick with you for a minute if you're  
21                  answering the AI questions. I also found that discussion of AI and nuclear  
22                  medicine really interesting, and I had been looking at the strategic plan that  
23                  Commissioner Caputo had mentioned, and it's, you know, I think intentionally,  
24                  like, a broader document. It's not focused on nuclear medicine in particular.

25                  And maybe this question is premature if you all are just  
26                  setting up the task force now, but the question I had in my mind was are there

1 things you all think NRC should be doing now that we're not? Because I think,  
2 with a little bit more background here, I think, on the reactor side, there's a  
3 sense that kind of the applications in this area are maybe a little bit down the  
4 road, but it sounds like in nuclear medicine the future is now. And I'm just  
5 wondering are there things that we need to get on right away in that space.

6 Rikki, if you wanted to weigh in, or Jeff or both.

7 MR. SEMANCIK: Yes. I would think, you know, I think your  
8 initial inclination is correct. It's probably a little bit ahead of where we are right  
9 now in the task force. But, you know, our thought was we need to do  
10 something right now, at least at the policy level, on this and kind of there were  
11 certain ethical implications that we want to make sure we're ahead of.

12 And so I think we're kind of at that stage of just what are the  
13 main principles for our use and integration of AI. And it goes through a number  
14 of things, right? It could be anything from medical treatment planning, but it  
15 could be as simple, you know, as Auggie indicated, you know, how do you  
16 counter narratives, false narratives that are created by AI because it lies  
17 brilliantly at times. And so we need to make sure we understand that.

18 And so I think the first one is just going to be some kind of  
19 policy-level stuff, are we ready for AI use in these areas or not. And if there is  
20 some AI use, how is it noticed and how is it notified to people receiving on that  
21 and, you know, for inspectors and regulators, how do you manage that at this  
22 point.

23 So I think we're very early in these stages. We just kind of  
24 voted on this the last board meeting, but, certainly, I think our recognition is that  
25 it's moving fast and we need to at least get some general guidance out to our  
26 members on recommendations on how to best handle it.

1 COMMISSIONER BARAN: Great. Well, I think that's great  
2 and I thank you for doing that.

3 Keisha, thanks for your presentation on the Cat 3 source  
4 security rulemaking. I think that's a really important rulemaking. You talked a  
5 little bit about getting compatible license amendments figured out in advance.  
6 Can you talk a little bit more? I hadn't focused on that area in terms of  
7 implementation as much. Can you talk a little bit about how that would work  
8 and what the benefits of it would be?

9 MS. CORNELIUS: Lots of states have problems passing  
10 rulemaking. It is so multi-faceted that it can take years and years and years.  
11 And when you only have three years, you struggle with compatibility. But if you  
12 can put a compatible license amendment in those licenses that it affects, then  
13 you can become compatible immediately until you have time to pass that rule,  
14 and then you can amend it and take that off. And that would help so many  
15 states be compatible with rulemaking easier than it is to pass a rule.

16 COMMISSIONER BARAN: And has that been done in other  
17 rulemakings in other areas, or is this a new concept?

18 MS. CORNELIUS: It has been done, but the states come up  
19 with their own license condition and they can put them on there to be  
20 compatible. But if one comes with that rulemaking that's already gone through  
21 compatibility and is already approved by the NRC, that would expedite that and  
22 the state wouldn't have to make their own.

23 COMMISSIONER BARAN: Have you all, in your coordination  
24 with the NRC staff, have you talked about that concept? Have you started  
25 thinking through, maybe that would be a little premature, but started thinking  
26 through what that would look like so that you had kind of input on whatever

1 language that would be there?

2 MS. CORNELIUS: For the Category 3, OAS actually drafted  
3 one and we sent it in. But it was premature because the final rule has not come  
4 out, so you can't determine compatibility with that. But it should really come  
5 from the rulemaking group because they have the most knowledge about that  
6 particular item. So we are hoping and we have let NRC know we are hoping  
7 that when that comes out that an appropriate license condition is added so that  
8 states can become compatible as quickly as possible.

9 COMMISSIONER BARAN: Yes, very good. Well, the  
10 Commission is focused on this rule. I know you had a letter that came in last  
11 year. Any views you all want to share about the draft proposed rule or the GAO  
12 recommendations?

13 MS. CORNELIUS: I think, Pat, you drafted a letter from  
14 CRCPD, if you want to talk about that.

15 MR. MULLIGAN: Again, I think that the proposed, the draft  
16 rule addresses all the issues and all the concerns. Ultimately, I think the  
17 remaining question that we had was are we going to get that implemented  
18 quickly enough in order to close those gaps as much as we can because we  
19 see them as, you know, security type issues obviously. While the dirty bomb  
20 risk maybe from Category 3 is low, it's certainly not something that you want.

21 So we were looking to make sure that we could implement  
22 certain aspects, like Keisha was talking about, of that rule nearly immediately,  
23 like the ability to verify licenses very quickly and the requirement to do that  
24 without a whole rulemaking process. So we believe that the rule addresses all  
25 of the issues. It's the implementation and how quickly we can close those gaps  
26 once the rule is made final from a state perspective.

1 COMMISSIONER BARAN: Well, thank you so much for  
2 thinking ahead and trying to think through, even now while we're in the  
3 rulemaking process, how we implement and how implement efficiently.

4 I know, and this is a general question for anyone who wants  
5 to weigh in, I just want to check in about web-based licensing and how that's  
6 going in terms of additional states having interest in it over time. I know it's  
7 been kind of a trend over the years to have states move to web-based  
8 licensing. Any update on that and how that's going and what the challenges  
9 are? Just a general status check on that.

10 MR. MULLIGAN: I can tell you, from my own state  
11 perspective, the issues that we run into and we would like to be able to use the  
12 web-based licensing, but the system that we had in place initially is just so  
13 embedded across multiple disciplines in our state that it's impossible to kind of  
14 rip that apart and use it. I mean, it's the Radiation Protection Program. It goes  
15 into Treasury. It goes into other, you know, Department of Labor. And the  
16 system that we have in place just stretches so far, it's difficult to pull those  
17 tentacles back and reconnect them somewhere else, you know, without causing  
18 a whole lot of other issues.

19 So that's one of the things that we experience. We have  
20 nothing against the web-based licensing system. It's a great system. It's just  
21 we can't get enough traction within our state to get people to change the way  
22 we do business.

1 very active in this space. Do you have, you know, do folks have thoughts about  
2 how do they envision the collaboration going forward with NRC? So if we end  
3 up with a fair bit of the licensing happening in the agreement states, what kind  
4 of interactions do you want to have with us?

5 MR. ONG: And, certainly, the emerging trend is that, from my  
6 perspective, is that the agreement states now tend to look elsewhere in terms  
7 of getting the necessary expertise and also in terms of how, in fact, here I have  
8 a license application, how do I go about to issue this license.

9 So from my experience, I think it's the agreement state who  
10 has the license application seeking agreement state members, I mean  
11 contiguous states maybe or outside of that group, to ask do you have a similar  
12 license application, what steps do I need to go through to get the approval  
13 process in place, to make sure that my program has approved the license for  
14 the right reasons with the right conditions in place since you have already done  
15 this work already, so show us what you did so we can learn from it, and then  
16 we'll write that license with the approval process with great confidence that, in  
17 fact, this is a legitimate approval without missing any of the deficiencies that  
18 may have overlooked because we have not sought out state members who  
19 have these kinds of licenses.

20 So that's how I see it. That's the trend that's moving on. And  
21 for the other, reaching out to NRC, that would be for areas that's behind our  
22 control, beyond our understanding, and certainly we're still looking forward to  
23 NRC agency to provide that leadership, that guidance. And especially, talking  
24 about guidance, it is the guidance that you guys come up with that provide all  
25 that foundation for us to carry out our programs.

26 So being able to produce those licenses for nuclear medicine,

1                   nuclear materials for use, certainly you guys are still in charge and taking the  
2                   leadership role.

3                   COMMISSIONER BARAN: Okay. Great. Thanks, everyone.

4                   CHAIR HANSON: Thank you. Commissioner Wright.

5                   COMMISSIONER WRIGHT: Thank you, Chair. And this is  
6                   my favorite meeting of the year. It really is. You know, the first day that I got  
7                   here, I didn't realize just how connected we were with the materials side of  
8                   things, especially in the medical realm, you know, being a cancer survivor. So I  
9                   became a fan right away and have not missed a meeting, don't want to miss a  
10                  meeting, and want to support you in every way that I can. And I can tell you  
11                  that, from the NRC's perspective, we've got great people, John Lubinski and  
12                  Kevin and Duncan and Huda and the others, they are passionate about this and  
13                  they believe in this and how you can do your job better than we can cheaper,  
14                  you know. It's very important, it's very important to states like Idaho that might  
15                  want to take a look at this, right, Rikki? So I just look forward to anything that  
16                  can come out of this that we can help move the ball forward for you, which also  
17                  moves it for us.

18                  And with that, Rikki, I'm going to start with you. You were  
19                  very nervous coming into this, but you've done a really good job, so  
20                  congratulations on that.

21                  MS. WALLER: Thank you.

22                  COMMISSIONER WRIGHT: You know, I'm reminded, Daniel  
23                  Boone, many, many years ago, he was asked if he was ever lost when he was  
24                  out exploring the wilderness of the New Frontier, and his response was, no, I've  
25                  never been lost, but I have been bewildered a few times. And I kind of feel like  
26                  this in the tracking lost things, right? Most of the time, we end up, you know,

1       recovering them, right, and finding them. But in your opinion, do you have any  
2       suggestions, I guess, or do you think there are any process improvements here  
3       in the tracking system that could be instituted? Do you have any --

4                   MS. WALLER: I don't. There's so many facets involved in the  
5       issue just with the tracking, and I'm not sure. Pat, can you offer anything up?

6                   MR. MULLIGAN: I don't know that I have a solution. I know  
7       what some of the issues are, and one of them is on the shipping. I mean, 99  
8       percent of things go through FedEx and they're the ones that sometimes  
9       misplace things. But we've heard from DOT, if you push them too hard, they'll  
10      just stop doing that, and then what does that do for us?

11                  And so there's a balance that needs to be created. I think the  
12      frustration that states have is we get our licensees and the manufacturers  
13      calling us because the licenses reside with us saying where's my material. And  
14      so when we reach out to DOT, it's very difficult to get sponsors.

15                  And so what we're looking for, and this was, like, an emerging  
16      issue, a future collaboration, I think maybe together NRC, DOT, and agreement  
17      states and CRCPD can work together to come up with a better process for, I'm  
18      not saying we're going to force them to find it faster but just to get information  
19      on what they're doing to try to find it within their facilities. So we're looking for  
20      help. I mean, that's what we're looking for because there's a frustration from  
21      the state when you call and call and call and you've got material that's just  
22      nobody knows where it is. It's a concern.

23                  COMMISSIONER WRIGHT: The problem with being the last  
24      is sometimes they've asked questions or at least versions of the questions you  
25      were going to ask, so I don't want to re-plow a lot of ground. But, Auggie, I  
26      can't resist. First off, ChatGPT has nothing on you.

1 (Laughter.)

2 COMMISSIONER WRIGHT: You were talking earlier, Auggie,  
3 about, obviously, fusion, and I appreciate that, your presentation. And I've had  
4 a past as an elected official on the state level, a little different than what my  
5 colleague here had. But a lot of this, we kind of see things the same way from  
6 that because of that experience.

7 So I do know that all states aren't the same. They don't do  
8 things the same way, and they don't have the amount of resources or money  
9 allocated to do what they need to do. So as it relates to fusion, am I hearing  
10 you correctly that are you thinking that, in the end, there's going to be  
11 consistency between state approaches on this, or do you see problems?

12 MR. ONG: I see problems if NRC does not take the  
13 leadership role in this. And what I mean by that, all right, and that is the  
14 licensing guidance that you guys come up with. That is the foundation of  
15 consistency within the license under NMP.

16 That being said, I think NRC is already actively anticipating  
17 what needs to make sure, even different technologies that may be installed in  
18 the agreement states, but once your foundation will set up, solidify, that then  
19 becomes the basis for the consistencies that will be promulgated throughout the  
20 NMP going forward into the future. So the foundation has to be established by  
21 the NRC.

22 And just as Keisha already mentioned, the NRC is the  
23 rulemaking body. Once you make the rule for fusion under Part 30, from my  
24 understanding, NRC already planning out to carve a special section, a sub-  
25 section within that 40.30 to accommodate fusion. And along with the rule, you  
26 will have 50.59, I believe of identifying and find X that will have that fusion

1 technology guidance for approving the fusion technology, despite the fact of  
2 different types of technology that are being anticipated in order to generate the  
3 workable device.

4 So that being said, NRC, take the leadership role, and we will  
5 be there with you under the partnership, such that then the rulemaking is not  
6 solely generated by NRC but that, through the partnership, NMP partnership,  
7 the rule will be consistent, will be practical, and will certainly provide that  
8 consistency across the program.

9 COMMISSIONER WRIGHT: So I wanted to kind of plow this  
10 ground a little with you for a second, and anybody here can plug in on this. But  
11 I kind of wish we had a staff person up here today to go here. You know, we've  
12 heard in panels earlier this year, not your panels but on other panels on fusion  
13 that we've had in the last year or so, we've had the rep from Wisconsin who's  
14 been very active, right. And one of the things that we recognized is that you all  
15 got more experience on fusion than we do, right? You all got a lot more.

16 So if we're going to be the rulemaking body, right, and we've  
17 got to get up to speed and we've got to do what we need to do to get there and  
18 put those things that you just talked about, Auggie, do you have any particular  
19 concerns on technical readiness right now for either where we're concerned as  
20 an NRC or the states? And if so, you know, what are those things or where  
21 would you say you all need to go here or we need to go there?

22 MR. ONG: And that is, if I may take the lead then in this  
23 case, and I do see deficiencies even with the agreement state programs that  
24 have licensed the technology. And that is we are not trained in terms of being  
25 medical physicists, all right, or engineering specialists to understand the  
26 technical challenges that are being posed to the program reviewers or even to

1 the inspectors because this is something so new, per se, that our own physics  
2 background, education, necessary to understand the technology, the risks  
3 involved, or simply we're going to accept the applicant's assurance that, in fact,  
4 it's a safe technology, environment is protected, and that our employees are  
5 totally safe from radiation exposure.

So by simply relying on their expertise and for the lack of our own expertise, that is an issue that needs to be confronted. Right now, the technology hasn't reached that point yet that will create hazards for approving the application, but we need to have built up, even though we have a lot of vacancies, folks are retiring, and, especially, if I may use an example of the Washington program and that is Washington has several, as my slide already illustrated a lot of fusion technology resides in Washington state. But here in your own IMPEP findings, because lack of expertise, all right, people have retired from the program, the vacancies have still not been filled up to the capacity, and you lost historical knowledge of expertise. So you have emerging technology in Washington state right now, but there are no equivalent number of people to do the inspections, to review the license applications, such that then that is the area of concern for both the OAS organization but certainly to NRC purview in terms of the National Materials Program. Who are in the Washington state program that's able to substantiate the safety of those devices that are now being installed as demonstration projects in your state.

22 COMMISSIONER WRIGHT: Okay.

23 MR. SEMANCIK: If I could just add a few things on it just  
24 because I also chair the E-47 Committee for CRCPD and commercial nuclear  
25 power, and we've got a working group. Megan Shober from Wisconsin is on  
26 our team. I think that's how you were mentioning.

Just a couple of things with that. You know, number one, one  
of the things that we have noticed and recognized is that the fusion deployment,  
I mean, our licensing experience is going to kind of scale with the fusion  
deployment, right. We're not seeing a go build a big fusion facility, you know.  
We're talking about getting into the prototype phase, the demo phase, and then  
moving it over to commercial deployment. So we're seeing some of that  
licensing experience scale with that, and we're going to try to capture that to  
kind of help improve it.

9                   We do some cross-state cooperation that Auggie mentioned  
10                  that's helping out that. There is some reliance on vendors, but we also are  
11                  looking into our national lab system, DOE, some of those others that have more  
12                  experience in tritium and the neutron side of that that can support us with a  
13                  technical evaluation. And then an approach some of our members are also  
14                  taking is to look at third party evaluators in the interim is kind of a gap to make it  
15                  go.

16                           But, ultimately, it's on us, as the states, to make sure that  
17                           we're coordinating and sharing experience, that we're not, you know, issuing  
18                           things that, because if we don't have the technical expertise to do that, then we  
19                           shouldn't be issuing licenses in those respects.

20 So, I mean, I think there's some of that there. We're going to  
21 look at peer reviews and things to help out with each other as we kind of work  
22 through this process and build a system that, you know, that works for us going  
23 forward.

24 COMMISSIONER WRIGHT: Chair, if you would just indulge  
25 me for just one more half a minute or so to make a comment and offer some  
26 support. So, Patrick, I know you're doing a lot of international stuff, and some

1 of you are doing that, as well. One, we appreciate that. I just want to be sure  
2 that you're getting support that you need from the NRC, and, if you're not,  
3 please let us know in those areas internationally where all of you all might be  
4 working.

5 And then if there's any other area that, anything that we're  
6 doing, have done, or that might need re-calibrating or maybe a little different  
7 approach, a fresh approach to, if you could please reach out and let us know  
8 and don't wait until the annual meeting to do so.

9 We appreciate you very much and wish you the best in what  
10 you're doing, and I like working with you. I really do. You all, you're inspiring to  
11 me. So thank you.

12 CHAIR HANSON: Thank you, Commissioner Wright. All  
13 right. Well, we've reached the end of our time together. Thank you all very,  
14 very much for your presentations and your participation. And, of course, we  
15 highly value the close and collaborative relationship we continue to have  
16 through our National Materials Program and other programs in the agency.

17 So with that, I'm going to gavel us out, and I think we're going  
18 to take a picture. So thank you all again.

19 (Whereupon, the above-entitled matter went off the record at  
20 11:56 a.m.)

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