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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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PUBLIC MEETING ON LOW-LEVEL WASTE

+ + + + +

WEDNESDAY,

OCTOBER 7, 2009

+ + + + +

MEETING COORDINATORS:

JIM SHAFFNER

MAURICE HEATH

NOTE: AS NO SPELLING OF TERMS/NAMES WERE PROVIDED,  
BEST GUESSES WERE USED.

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P-R-O-C-E-E-D-I-N-G-S

1  
2 MR. SHAFFNER: Good morning. My name is  
3 Jim Shaffner, Project Manager, in NRC's DWMEP, and,  
4 along with Maurice Heath, Coordinator for today's  
5 meeting.

6 Before we go further, and I think most of  
7 you already know this. For those of you participating  
8 by Webinar, in case there are technical difficulties  
9 you can re-access the meeting by calling the toll free  
10 teleconference number shown on your screen, 1-888-  
11 942-9716, Pass Code 16393.

12 This is an open meeting, convened by NRC  
13 technical staff, in order to continue gathering  
14 information related to the impacts of diminished low  
15 level waste disposal access, on medical, academic, and  
16 academic research, using radioactive material and  
17 radioactive sources.

18 Because this is an open meeting, we  
19 welcome members of the public to participate in the  
20 facilitated discussion. A time period toward the  
21 beginning of the meeting has been provided for  
22 stakeholders with prepared remarks.

23 While we'll prepare a report of this  
24 meeting, that will be placed in our electronic  
25 document management system, ADAMS, and will be

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1 available to the public.

2 Documents presented by any party will  
3 become part of the meeting record and will be made  
4 available for public review, unless they are submitted  
5 as proprietary documents, in accordance with NRC's  
6 regulations, excuse me.

7 Our meeting report will include a summary  
8 of discussion topics and a list of action items, with  
9 agreed upon due dates. Our goal is to have the  
10 meeting report completed within ten working days.

11 We also request that each of you complete  
12 a public meeting feedback form. We're trying to  
13 improve the way we conduct these meetings, these types  
14 of interactions, with stakeholders and the public.

15 In this form is one of the tools we'll be  
16 using to help us identify areas for improvement. If  
17 you are participating remotely, you can e-mail me,  
18 James.Shaffner@nrc.gov for the form.

19 Because people are participating in three  
20 different ways, in person, by teleconference, and by  
21 Webinar, they'll be a few process observations that  
22 will be provided by our Facilitator, Mike Fuller.

23 I'm turning the meeting over to him now.  
24 Thank you, Mike.

25 MR. FULLER: Thank you, Jim. Hello and

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1 welcome to everyone. Like Jim said, my name is Mike  
2 Fuller. I'm a Project Manager here at NRC in the Low  
3 Level Waste Branch, and today I will be the  
4 Facilitator for our meeting.

5 My job as the Facilitator is to keep us on  
6 track, but more importantly, since this is an  
7 information gathering meeting, to make sure that  
8 everyone who wishes to provide input today, has that  
9 opportunity.

10 We're going to be introducing ourselves in  
11 just a few minutes, but first I want to reinforce a  
12 couple of things that Jim stated.

13 First, in an effort to provide as much  
14 access to as many people as possible, we're using  
15 three different means of communication and  
16 participation.

17 We're meeting with folks here at NRC. We  
18 are conducting a Webinar and we're having a telephone  
19 conference line or a bridge line setup.

20 Now, again, as generally stated earlier,  
21 if anyone has any difficulty using the Webinar or  
22 hearing what is being said, or if anyone on the  
23 Webinar loses that connection during the meeting,  
24 please call in on the conference call line.

25 And, again, that number is 888-942-9716.

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1 And the pass code is 16393, and then make sure you  
2 press the pound key, after you put in the pass code.  
3 Now, while on the conference, if you're on the  
4 teleconference line, and if it's possible to do so, we  
5 would ask that you please keep your phone muted.

6 And this will really help to cut down on a  
7 lot of the background noise. At such times, when  
8 there's an opportunity for you to speak, and we're  
9 going to have plenty of opportunities for that, then,  
10 at that time, we'll ask you to take your phone off  
11 mute.

12 Now this meeting is all about gaining  
13 insights and receiving information from all of you.  
14 And some of the technology, while we hear it's not  
15 really all that new, it is new to us.

16 So please be patience with us. And, like  
17 I said, I'm going to do everything I can do as the  
18 Facilitator, to make sure that we hear from everyone  
19 who wishes to be heard.

20 Now we're going to do some introductions  
21 and let me go over a little bit about how we're going  
22 to do that.

23 First, we're going to go around the room  
24 and introduce ourselves here in the room. And I'm  
25 going to ask the folks wait until I hand them the

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1 microphone so everyone can hear the introductions.

2 After we go around the introductions here,  
3 Jim and Maurice are going to help us and inform us as  
4 to who is participating by way of Webinar.

5 And, finally, I'll ask those of you on the  
6 teleconference phone, who wish to introduce themselves  
7 and participate, to do so. Now, that part is going to  
8 be a little tricky, so bear with me, I've got an idea  
9 of what I'm going to do to try to make that go as  
10 smoothly as possible.

11 And we'll get to that, at that time. So,  
12 now, I'm going to hand the microphone off to my left  
13 and we'll just go around the room and ask each one to  
14 introduce yourselves, and tell us a little bit about  
15 who you're affiliated with, if you're affiliated with  
16 an organization or agency or company.

17 MR. SMITH: Well, I'm Leonard Robert  
18 Smith(phonetic) I'm a Certified Health Physicists, and  
19 I'm here on behalf of CORA, which is the Council  
20 (inaudible), which is the trade association that  
21 manufactures and distributes radio chemicals for  
22 research purposes, and for other purposes.

23 MR. ERNST:: I'm John Ernst(phonetic), from  
24 the University of Missouri Research Reactor and also  
25 representing the National Organization of Test,

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1 Research and Training Reactors. And we are a producer  
2 of radio isotopes at the University of Missouri.

3 MS. BUBAR: Good morning, I'm Patty Bubar,  
4 I'm with the Nuclear Regulatory Commission, and I am  
5 the Deputy Director of the Division of Waste  
6 Management and Environmental Protection. So it's our  
7 group who has convened this public meeting and will  
8 take this input and provide it back to the  
9 Commissioners, which we'll talk a little bit later.

10 But I will be here the entire meeting, and  
11 look very much forward to listening to everyone's  
12 input. Thank you.

13 MS. RUBIN: Hi, I'm Wendy Rubin from the  
14 National Institutes of Health in Bethesda, Maryland.

15 MS. RIBAUDO: Kathy Ribaud, also from the  
16 National Institutes of Health in Bethesda, Maryland.  
17 We're representing the Division of Radiation Safety.

18 MR. KENNEDY: Jim Kennedy, Senior Project  
19 Manager, Low Level Waste Branch, NRC.

20 MS. FAIRABENT: Lynn Fairabent with  
21 American Association of Physicists in Medicine.

22 MR. MARTIN: Richard Martin with American  
23 Society for Radiation Oncology. A lot of our members  
24 are involved with research using live sources and  
25 that's why I'm here.

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1 MR. PETERS: Mike Peters, American College  
2 of Radiology.

3 MR. MCINTYRE: Dave McIntyre, NRC, Public  
4 Affairs.

5 MR. CARRICO: I'm Bruce Carrico, I'm the  
6 Licensing Branch with Division of Material Safety and  
7 State Agreements, NRC.

8 MS. VILLAMAR: I'm Glenda Villamar, NRC,  
9 Radioactive Material Safety Branch.

10 MR. ANDERSON: Ralph Anderson with the  
11 Nuclear Energy Institute.

12 MS. BUBAR: In the corner here we've got  
13 Jim Shaffner, Maurice Heath and Veronica  
14 Medina (phonetic), who are assisting us with the  
15 equipment and you've heard from Jim.

16 MR. ROACH: Kevin Roach, NRC's Office of  
17 the General Counsel.

18 MS. KANATAS: Kathy Kanatas, Nuclear  
19 Regulatory Commission, Office of General Counsel.

20 MS. LONDON: Lisa London, NRC, Office of  
21 General Counsel.

22 MS. SAMICKSIS: Terry, Samisksis (phonetic),  
23 Special Projects Branch.

24 MS. DARRIGO: Diane Darrigo, Nuclear  
25 Information Resources.

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1 MS. ANDERSON: Sarah Anderson with  
2 (inaudible).

3 MR. FULLER: Okay, this is Mike Fuller  
4 again. Now we have a number of seats available at the  
5 table. I know there were some folks coming in as we  
6 were getting started, so if anyone would like to move  
7 on up to the table at this time, please feel welcome  
8 to come on up.

9 Now, we've completed the introductions of  
10 those folks that are here in the room with us at NRC  
11 Headquarters. What I'd like to now is turn it over to  
12 Jim Shaffner for a few minutes.

13 And, Jim, if you could let us know who we  
14 have participating with us on the Webinar.

15 MR. SHAFFNER: Yeah, we have a number of  
16 people participating by the Webinar. We have Carra  
17 Roberts, Christie Clem, Curtis Anderson, Dan Hibbing,  
18 Daniel Schultheisz, Debbie Gilley, Deborah Steva,  
19 James Schweitzer, James Watkins, Jeff Havlicak, John  
20 Barcalow, John McLamb, Kevin Bohner, Michael Klebe,  
21 Mike Zittle, Mike Ralmonde, Paul MacMillan, Rich  
22 Janati, Robert Gould, Scott Kirk, Scott Slesinger,  
23 Shawn Seeley, Susan Masih, and Teresa Mixon.

24 I'm sorry, I'm not done yet, Thaddeus  
25 Swanek, Tom Cotton, Thor Strong, Warren Snell, William

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1 Dornsife. Thank you.

2 MR. FULLER: Thanks, Jim. Now what we're  
3 going to try to do is go to the conference line and we  
4 really don't know how many people are out there yet,  
5 so bear with me folks.

6 What I'd like to do is, if you're  
7 participating by conference call or conference line,  
8 and you'd like to introduce yourselves. And your last  
9 name begins with A, B, C or D, if you would, go ahead  
10 and speak up now and we're going to try to see how  
11 this works.

12 Anyone with the last name A, B, C or D,  
13 that would like to introduce themselves?

14 (No response.)

15 MR. FULLER: Okay. How about E, F, G or H.  
16 Anyone who's last name begins with E, F, G or H, and  
17 who would like to introduce themselves, please do so  
18 at this time?

19 (No response.)

20 MR. FULLER: Okay. How about I, J, K or L?  
21 Anybody what to step up? The last person, would you  
22 please repeat your name again?

23 MS. CHANDROOT: Judith Chandroot (phonetic).

24 MR. FULLER: Thank you, Judith. Was  
25 everyone here in the room able to hear Judith when she

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1 spoke? Okay. Okay, M, N, O or P?

2 MS. MASIH: Susan Masih, I'm doubling  
3 because I can't hear anything on the Webinar.

4 MR. FULLER: Okay. Now if you, and we're  
5 going to get to this in a few minutes. But if you're  
6 participating by Webinar, you should be able to hear,  
7 but not necessarily speak.

8 And we're going to go through how all that  
9 works in just a few minutes. But that's just for your  
10 information.

11 If you are, again, we've got the  
12 instructions up on the Webinar. If anybody is having  
13 difficulty hearing by way of the Webinar, then by all  
14 means we want you to call in on this line.

15 Okay, anybody else who's last name begins  
16 with M, M, O or P?

17 (No response.)

18 MR. FULLER: Okay, Q, R, S, T?

19 MR. SLESINGER: Scott Slesinger, with the  
20 Environmental Technology Council representing  
21 facilities that dispose of hazardous waste.

22 MR. FULLER: Thank you. Could you repeat  
23 your first name, please?

24 MR. SLESINGER: Scott.

25 MR. FULLER: Scott. Thank you, Scott.

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1 MR. SNELL: Warren Snell, Methodist  
2 Hospital in Houston, Texas.

3 MR. FULLER: Thank you, Warren. Okay,  
4 moving along, U, V, W, X. If your last name begins  
5 with U, V, W or X, and you'd like to introduce  
6 yourselves, please do so.

7 MR. WATKINS: Hello, James Watkins, Yale  
8 Universtiy.

9 MR. FULLER: Did you say Yale?

10 MR. WATKINS: Yes, I did.

11 MR. FULLER: Thank you. Okay, and Y and Z?

12 (No response.)

13 MR. FULLER: Okay. I think we got to  
14 everyone, as far as introductions go. Now, again, I  
15 alluded to this earlier. We have a couple of special  
16 request for those of you who are participating by  
17 Webinar.

18 If you're using Webinar and plan to make a  
19 presentation or you have a prepared statement, please  
20 dial in on the conference line for that speaking part.

21 This way, and the way we have it set up,  
22 everyone will be able to hear you as you speak.  
23 Again, that number is 888-942-9716, and the pass code  
24 16393, and then you hit the pound sign after that.

25 Also, if you're participating by Webinar,

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1 and you wish to provide a comment, when we get to  
2 those stages in the meeting, and I'll make sure  
3 everyone knows when we're at that point, we'll ask  
4 that you either type the question or comment, by way  
5 of the keyboard.

6 Or you can utilize a button that's there  
7 on the Webinar that's referred to as raise your hand  
8 or raise hand. Jim and Maurice are going to be  
9 monitoring these things and we'll get to your  
10 questions either way.

11 If you use the raise your hand button, at  
12 that time we will un-mute you and you'll be able to  
13 speak. Not everyone here in the room will be able to  
14 hear you, so that will be relayed to us by Jim or  
15 Maurice, in the same manner in which the typed  
16 comments will be relayed to us.

17 Okay, and again, if you're participating  
18 by teleconference, we ask that you keep your phone on  
19 mute, if at all possible, until we get to those stages  
20 of the meeting where we will be opening things up for  
21 comments or discussions.

22 Okay, someone just put us on mute or on  
23 hold and now we're listening to your music. Thank  
24 you. Again, we've got a lot of folks in on the  
25 conference call line, we just ask to try to keep the

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1 noise level down, it will help things out on this end.

2 Okay, so since we've been through the  
3 introductions, I've got a pretty good idea of who's on  
4 the conference call and wish to participate out there,  
5 and we're going to work through this.

6 When we get to those stages where we're  
7 going to be opening it up for discussion and  
8 questions. Now after each presentation, and we have a  
9 number of those that are going to be made here in  
10 Headquarters.

11 We're going to open things up for  
12 questions and comments after each one of those. And  
13 then, after all those are done, we're going to open up  
14 more broadly on the issues.

15 And when we do that, each time, will be  
16 going first to the folks in the room here, then to the  
17 Webinar and then to the conference call line.

18 Now, if you're on the Webinar, remember  
19 the raise your hand button is what you use if you want  
20 to be un-muted to speak, and of course you can type in  
21 your questions or comments.

22 Either way, we're monitoring that, and  
23 we'll be able to get that from you. Okay. That's all  
24 about process and how we're going to do things. Is  
25 anyone here in the room, have any questions about this

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1 portion of it?

2 (No response.)

3 MR. FULLER: Okay, out on the conference  
4 call, are there any questions from anyone about how  
5 the process is going to work today?

6 (No response.)

7 MR. FULLER: And, of course, if you're  
8 using the Webinar, raise your hand or type us a  
9 comment, if you have any questions about the process?

10 (No response.)

11 MR. FULLER: Okay. At this point I'd like  
12 to introduce Ms. Patrice Bubar. Patty is the Director  
13 of the Environmental Protection and Performance  
14 Assessment Directorate in the Division of Waste  
15 Management and Environmental Protection, here at NRC.

16 She'll be making some opening remarks  
17 today, that will provide you all with some background  
18 information and a little bit about why we're holding  
19 this meeting and eager to hear from you. Patty.

20 MS. BUBAR: Thank you, good morning. As  
21 Mike said, my name is Patty Bubar, I'm the Deputy  
22 Director in the Division of Waste Management and I'd  
23 like, and Environmental Protection.

24 I'd like to welcome all participants  
25 convened here. I'd like to welcome all participants

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1 convened here and participating remotely, to this  
2 interactive information gathering meeting regarding  
3 the impact of diminished low level radioactive waste  
4 disposal access on academic and medical research using  
5 radioactive material or radioactive sealed sources.

6 Next slide, please. Before we get into  
7 the stakeholder prepared remarks and the discussion,  
8 as Mike was explaining, I'd like to just spend a few  
9 minutes to put this meeting into context.

10 Stakeholders in the academic and medical  
11 community have long expressed concern relating to the  
12 adverse impacts of high or indeterminate disposal cost  
13 or a complete lack of access to disposal on medical  
14 and academic research, and other activities involving  
15 the beneficial use of radioactive material.

16 The issue was raised again specifically in  
17 an NRC briefing to the Commissioners on low level  
18 waste, on April 17th. At that time, Commission  
19 Lyons (phonetic) asked the question as to whether there  
20 were examples where important medical research has  
21 been literally stopped due to concerns regarding waste  
22 disposal issues.

23 He added, and I quote, and this is in the  
24 public record. I would think both of your  
25 organizations, and he was speaking to (inaudible) and

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1 to the Campus Radiation Safety Officers, would have a  
2 strong interest in trying to, if you will, build some  
3 sort of catalog on the types of research that is being  
4 limited or precluded by these issues.

5 He went on to say you point to a number of  
6 possible changes you would like to see, almost all of  
7 which are going to require legislation in one form or  
8 another.

9 I think it would be extremely useful to be  
10 able to show legislators what the impact is. It's one  
11 thing to talk about the cost of disposal, that's  
12 certainly a valid point too, and it's come up  
13 repeatedly today.

14 But I think it might be quite another, if  
15 it's possible, and I think it is, to show that there  
16 is truly important research that is simply not  
17 conducted today because of that.

18 He went on to say, it just struck me that  
19 your two organizations might have quite an interest in  
20 making such a compilation and trying to make it  
21 available to the legislature, the legislators who  
22 might be interested in this.

23 So, as a result of the briefing, the  
24 Commission asked the staff to work with (inaudible)  
25 and the Campus Radiation Safety Officers, and other

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1 stakeholders, to identify specific examples.

2 So, this meeting is part of a broader  
3 information gathering effort that was initiated by the  
4 staff when we published a Federal Register Notice on  
5 August 7th. Go on to the next slide.

6 I realize that most of you may not deal  
7 with low level waste issues on a daily basis. So let  
8 me just take a minute to update you on the status of  
9 commercial low level waste disposal as it exists in  
10 the United States today.

11 The Barnwell, South Carolina facility,  
12 operated by Energy Solutions, became a compact-only  
13 facility as of July 1st, 2008. It now accepts Class  
14 A, B and C low level waste, from the three states that  
15 comprise the Atlantic Compact, which are South  
16 Carolina, New Jersey and Connecticut.

17 The Richland, Washington facility,  
18 operated by U.S. Ecology, is the host state for the  
19 Northwest Compact, which is Washington, Hawaii,  
20 Alaska, Oregon, Idaho, Montana, Wyoming and Utah.

21 It also accepts waste from the Rocky  
22 Mountain Compact, which is Nevada, New Mexico and  
23 Colorado. It accepts Class A, B and C low level  
24 waste.

25 The Clive (phonetic), Utah facility,

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1 operated by Energy Solutions, accepts waste from the  
2 rest of the United States, but it is limited to Class  
3 A.

4 The Texas Commission on Environmental  
5 Quality, has granted a license to Waste Control  
6 Specialist for a low level waste site near Andrews,  
7 Texas.

8 The site may begin receiving waste in late  
9 2010 from the states that comprise the Texas Compact,  
10 which is Texas and Vermont. The Compact Commission  
11 will control additional access, if any. Go to the  
12 next slide.

13 And this is just a picture of where those  
14 facilities are on a map of the United States, as well  
15 as some of the additional information about what waste  
16 they can accept.

17 So the purpose of today's meeting, is to  
18 further identify and have a dialogue regarding  
19 specific instances and examples of research and more  
20 broadly, other beneficial uses of radioactive material  
21 and radioactive sealed sources that can be logically  
22 traced back to a root cause of difficulties and  
23 uncertainties surrounding the disposal of the  
24 resultant low level radioactive waste.

25 The staff will continue this information

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1 collection effort through October 20th. We will be  
2 analyzing and organizing the data for presentation to  
3 the Commission, by the first of the year.

4 Based on the information that we hear  
5 today, as well as any other comments that we get  
6 through October 20th. Next slide.

7 The specific direction of the Commission  
8 is stated here. As I mentioned, the staff should work  
9 with the Campus Radiation Safety Officers, (inaudible)  
10 and other stakeholders to develop a list or catalog of  
11 important research that has been impacted and/or  
12 stopped because of lack of disposal options for  
13 sources.

14 In the process of developing it's  
15 information strategy, because of some of the concerns  
16 we were hearing went beyond challenges related to just  
17 sources, the staff chose to expand the inquiry  
18 somewhat to include the use of all radioactive  
19 material.

20 Further, because we know that some of you  
21 may be concerned with impacts of low level waste  
22 disposal limitations on other beneficial uses of  
23 radioactive material, we do welcome comments on that,  
24 as well. Next slide.

25 We have some information and examples that

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1 we are aware of. And this slide here just lists some  
2 of those examples.

3 We'd like to get information that's  
4 specific as possible. Challenges regarding disposal  
5 of specific radio nuclides used and in what specific  
6 research conducted by what institution or facility.

7 That said, there may be some reluctance to  
8 make some of the details public for a variety of  
9 reasons, so we maintain sensitivity to those concerns.

10 At this point, if there are no questions,  
11 I'd like to turn the meeting back over to Mike Fuller,  
12 who will serve as our Discussion Facilitator for most  
13 of the meeting.

14 MR. FULLER: Can everybody hear me? Okay,  
15 if there are no questions for Patty at this time,  
16 we're at that stage where we're going to open it up  
17 for some of the prepared statements of some of the  
18 folks that are here today.

19 The first one I have is Lynn Fairabent,  
20 did I say that correctly? From the American  
21 Association of Physicists in Medicine. Here you go,  
22 ma'am.

23 MS. FAIRABENT: Thank you. I am Lynn  
24 Fairabent, I'm the manager of Legislative and  
25 Regulatory Affairs for the American Association of

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1 Physicists in Medicine. AAPM's mission is to advance  
2 the practice of Physics in medicine and biology, by  
3 encouraging innovative research and development.

4 Disseminating scientific and technical  
5 information, fostering the education and professional  
6 development of Medical Physicists, and promoting the  
7 highest quality in medical services for patients.

8 We currently represent about 6,800  
9 members. It is our please today to just enter a brief  
10 statement. Detailed comments will be filed by the  
11 October 20th, date.

12 But, basically, there are three points  
13 that I would like to make on behalf of AAPM. Research  
14 used with radioactive materials has dropped  
15 significantly in the past 15 years or so.

16 Researchers used to get bulk isotopes and  
17 tag molecules themselves. Now they buy what they need  
18 directly. Also, radio assay used to be a cornerstone  
19 in research and is essentially gone, replaced by non-  
20 radioactive methods.

21 On site storage poses storage and  
22 potential security challenges. Many medical  
23 institutions and academic research institutions do not  
24 have excessive storage or space available to hold  
25 materials that they might like to use in research.

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1 There may be an unfair competitive advantage for those  
2 who have disposal options for applying for research  
3 grants and challenges.

4 The cost of disposal has become excessive  
5 for those who do have a disposal pathway, and remains  
6 concerning for those who do not.

7 There are a number of unwanted sealed  
8 sources that remain in storage at medical  
9 institutions. And, although they are safely and  
10 securely stored, many institutions would like to have  
11 a disposal pathway and the opportunity to dispose them  
12 and go through complete life cycle use of these.

13 AAPM hopes that there remain options  
14 available through the Orphan Source Recovery Program  
15 and the Source Collection and Threat Reduction Program  
16 or SCTR, as it is called, in combination with the  
17 Conference of Radiation Controlled Program Directors.

18 However, the challenges of not having  
19 disposal opportunity, has impact these two programs.  
20 And we hope that both the Department of Energy, the  
21 Regulatory Commission and the Conference look at  
22 alternative solutions for which one could combine  
23 sources in storage and ultimately provide a disposal  
24 pathway. Thank you.

25 MR. FULLER: Thank you, Lynn. At this

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1 time, I'd like to open it up to anyone here in the  
2 room, if you have any questions for Lynn? Anyone?

3 (No response.)

4 MR. FULLER: Okay. Now, out on the  
5 Webinar, those of you who are participating, if you  
6 have any questions for Lynn, related to what she just  
7 talked about.

8 If you would go ahead and type those in or  
9 hit the button that says raise your hand. And Jim and  
10 Maurice are monitoring that. Do we have any folks out  
11 there?

12 (No response.)

13 MR. FULLER: Okay, I'm going to go ahead to  
14 the conference line. In the meantime, if anyone out  
15 there on the Webinar has a comment, oh, we do have  
16 one? All right, I'm going to take the mic around the  
17 Jim so he can relay. Stand by, folks. Hold on, Jim.

18 MR. SHAFFNER: The question from Dr. Gould  
19 is can you provide those us participating in the  
20 teleconference but are mute for the Webinar, on the  
21 next break, a list, an order of presentations, so that  
22 we can be prepared to call on another line.

23 MR. FULLER: Yeah, as a matter of fact, why  
24 don't we do that right now. You just heard, the  
25 prepared remarks, you just heard from Lynn Fairabent.

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1 The next presenter will be Diane Darrigo. Following  
2 Diane will be John Ernst.

3 Diane Darrigo is with the Radioactive  
4 Waste, a nuclear information and resource service.  
5 Dr. Ernst is with the University of Missouri research  
6 reactor.

7 Leonard Smith is with the Council on Radio  
8 Nuclides and Radio Pharmaceuticals. The next  
9 presenter will be Dr. Gould with the Physicians for  
10 Social Responsibility.

11 Michael Zittle with Oregon State  
12 University and Joseph Ring on Harvard University.

13 MR. FULLER: Okay, thanks, Jim. I'm going  
14 to go to the conference line now. If there's anyone  
15 out there who would like to ask Lynn Fairabent a  
16 question or make a comment about her presentation. Or  
17 offer anything related to that.

18 (No response.)

19 MR. FULLER: Okay. Before we go to our  
20 next speaker, or we can go ahead and go to our next  
21 speaker. I'm going to leave it out, I wonder if we  
22 can get a little feedback from folks here.

23 I know we start about 9:00 in the morning  
24 and a lot of people have coffee in the morning. We  
25 can break now for maybe ten minutes, or we can go on

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1 until about 10:00, what do you think? Okay, pretty  
2 unanimous.

3 Our next speaker is Diane Darrigo, from  
4 the Nuclear Information and Resource Service. Diane.

5 MS. DARRIGO: There's a distinct difference  
6 between medical waste and research waste and the waste  
7 from nuclear power reactors.

8 Nuclear Information and Resource Service's  
9 main concern is that decision that are made for  
10 medical waste, not be used as a precedent for or an  
11 opening the door for nuclear power waste.

12 Which are, the fact is, much longer  
13 lasting and much, greater amounts of radioactivity.  
14 This is a distinct difference between, well, clearly,  
15 medical treatment and diagnosis waste.

16 In the case of research, of course, there  
17 are some longer lasting isotopes but, again, the  
18 amount of radioactivity is so much less and it appears  
19 that this is something that we should be able to  
20 handle with our technologies today, to isolate and  
21 protect from the environment, protect the public from  
22 the waste.

23 And to do it economically without having  
24 to have the tail wag the dog. That is to have new  
25 radioactive waste sites or exemptions from existing

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1 regulations that would be done for the medical  
2 purposes but then be used for nuclear power.

3 Because, nuclear power waste is low level,  
4 it's still called low level radioactive waste, is  
5 when there's a magnitude more radioactivity.

6 And a much greater problem and of a much  
7 less clear beneficial use for the public. So I am  
8 here with that concern and interest and, well, I  
9 conclude my remarks at that point.

10 MR. FULLER: Thank you, Diane. Any  
11 questions from anyone here in the room, for Diane.

12 (No response.)

13 MR. FULLER: I think I'm going to switch it  
14 up a little bit. Instead of going directly to the  
15 Webinar, let folks have an opportunity there to raise  
16 their hand or type in some comments.

17 And while that's going on, we'll ask the  
18 folks who are on the conference call. Do you have any  
19 questions for Diane Darrigo at this time?

20 (No response.)

21 MR. FULLER: What about over here, guys,  
22 got anything from the Webinar for Diane?

23 (No response.)

24 MR. FULLER: Okay. The next speaker on our  
25 agenda is John Ernst from the University of Missouri

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1 Research Reactor.

2 MR. ERNST: I'd like to thank the NRC for  
3 this opportunity to provide perspective on the current  
4 low level waste issues.

5 I'll be discussing some specific impacts  
6 that the low level waste issues have on research and  
7 development at our research reactor at the University  
8 of Missouri.

9 And I'll follow up with a few comments  
10 from the perspective of other members of the National  
11 Organization of Test, Research and Training Reactors.

12 At the University of Missouri research  
13 reactor, we pursue programs in a broad spectrum of  
14 academic fields, including radio pharmaceutical  
15 development, material science, health and nutrition,  
16 archeology and geology.

17 In addition to the research mission, we  
18 also provide radio isotopes to many other research  
19 facilities around the world. We provide radio  
20 isotopes to pharmaceutical companies for the  
21 manufacture of drugs used for imaging and treatment of  
22 cancer and other diseases.

23 And we also provide isotopes for other  
24 industrial uses. And all of these activities produce  
25 some low level radioactive waste. Most of it that we

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1 produce is Class A waste in the form of paper,  
2 plastic, metal and high and exchange resins.

3 But, as a result of routine reactor  
4 operations and some of the experimental use of  
5 radioactive material, we do produce some Class B  
6 waste.

7 And, as a member of the Midwest Waste  
8 Compact, the closing of the Barnwell site has limited  
9 us to only being able to dispose of our Class A waste  
10 at the Clive, Utah facility.

11 There are no options for disposal of the  
12 Class B and C waste we produce, other than, no  
13 disposal options. We only have the option to provide  
14 long-term, on-site storage for the Class B waste.

15 The long-term storage of Class B waste is  
16 the main issue, low level waste issue we face. But  
17 the idea of having only one disposal site for our  
18 Class A waste, is not insignificant in that any  
19 (inaudible) to the Utah legislature could have a big  
20 impact on our ability to dispose of the Class A waste  
21 as well.

22 The long-term storage of the Class B and C  
23 waste, has a two-fold impact on our ability to do  
24 research and development work. The first is a fiscal  
25 impact and second is a, is the providing of safe and

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1 secure storage location in a facility that is not  
2 necessarily designed for long-term waste storage.

3 As a public university owned and managed  
4 facility, we have limited economic, we have limited  
5 fiscal resources, primarily due to the economic  
6 situation that's leaving all public universities with  
7 contracting budgets.

8 We also have a facility with a limited  
9 size. Class B waste, that we produce, tends to be  
10 very small volume, but relatively high dose rates and  
11 requires a dedicated storage facility.

12 We're faced with, not only designing and  
13 constructing relatively expensive storage facility,  
14 but we also have to put aside money for an unknown  
15 future cost of disposal.

16 And I think others have mentioned, in  
17 previous discussions that that unknown future disposal  
18 cost can have a big impact on getting research  
19 proposals submitted.

20 Because most of those research proposals  
21 you have indicated what you're going to do with the  
22 waste produced and what it's going to cost to dispose  
23 of it.

24 In solving the storage issues, which  
25 they're technically not difficult to solve, but in a

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1 facility with limited space, they do have an impact on  
2 doing research.

3 For instance, since the closing of  
4 Barnwell, we have had to design and construct waste  
5 storage packages, and we've had to use some fairly  
6 unique research facilities, stop doing that research,  
7 and use them for storage of the radioactive waste.

8 And that has occurred in the past year and  
9 a quarter, and will continue to occur in the future.  
10 The bottom line is that for every dollar and every  
11 square foot of space that we devote to long-term  
12 storage of waste, that is resources that we can't  
13 apply to our primary mission of education and  
14 research.

15 The research is a very, very important  
16 aspect of our mission. While specific examples are  
17 there, the future is really where this will come in,  
18 in that there will be research projects out there that  
19 we can't participate in and can't do because of the  
20 lack of a disposal option.

21 One of the projects that we are now  
22 working on is trying to help with the concern for  
23 domestic supply of (inaudible) in '99, for the  
24 production of Tech 99 in use of, in medical use.

25 We're trying to be a part of that, the

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1 solution to that problem and we're doing the research  
2 and development to determine what our production  
3 capacity could be or what our impact could be on that  
4 concern for domestic supply.

5 But what we do know, so far, is that there  
6 will be some Class B waste produced as a result of  
7 that. And, as I said before, you have no disposal  
8 option.

9 And that will have and is having and will  
10 have in the future, a big impact on any facility that  
11 is trying to address that concern for a local, or a  
12 domestic supply of (inaudible) 99.

13 Not just our facility, but any facility  
14 that is trying to have an impact on that problem. The  
15 other research reactors in the country, have some  
16 problems with waste disposal, as well.

17 Many of them do not produce Class B waste.

18 Some of them that do, are in states that can, that do  
19 have access to current disposal sites. But, MIT and  
20 the National Institute of Science and Technology  
21 reactors are in the same category as the University of  
22 Missouri research reactor, in that they do not have  
23 access to Class B disposal options. And that  
24 concludes my remarks.

25 MR. FULLER: Thank you, Dr. Ernst. At this

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1 point I'm going to open it up for any questions or  
2 comments. But before we get to the next presenter, we  
3 are going to go ahead and break, because we need to  
4 have a few minutes to upload some slides to the  
5 Webinar.

6 We have a couple of new folks who've  
7 joined us since we got started. We're going to ask  
8 them to introduce themselves, too. But are there any  
9 questions at this point, for Dr. Ernst?

10 (No response.)

11 MR. FULLER: Sir, could you go ahead and  
12 introduce yourself. We kind of went around the room  
13 before.

14 MR. MAGETTE: I'm Tom Magette with Energy  
15 Solutions.

16 MR. LOVINGER: Todd Lovinger with the Low  
17 Level Waste Forum.

18 MR. FULLER: Thank you. Are there any  
19 folks on the conference call that have any questions  
20 related to the last presentation?

21 MR. JANETI: Yes, I do, this is Rich  
22 Janati.

23 MR. FULLER: Go ahead, Rich.

24 MR. JANETI: The question I have is related  
25 to a Class B waste. I was wondering if you could give

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1 us some idea as to how much Class B waste is being  
2 generated at the University and what type of Class B  
3 waste is being generated. Is it (inaudible) sources  
4 or any other type of material? So basically what I'm  
5 asking you is the amount of Class B and the type of  
6 material?

7 MR. ERNST:: At the University of --

8 MR. JANETI: At the University of Missouri.

9 MR. ERNST:: At the University of Missouri  
10 our routine operation of the reactor results in  
11 activated metal and some neutron detectors and that  
12 tends to be the bulk of the Class B waste that we  
13 produce.

14 MR. JANETI: Okay.

15 MR. ERNST:: If the, in current production  
16 levels, there's about seven to eight cubic feet per  
17 year. So it's a relatively small amount, but the fact  
18 that it exists is pretty significant to our  
19 operations.

20 If we get into the production of molly99,  
21 molybdenum 99 for energy use in medical energy use,  
22 that number we haven't determined yet. We're still in  
23 the process of doing the development work that would  
24 reveal that number.

25 But that is one that we're working on and

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1 very much concerned about. Does that answer your  
2 question?

3 MR. JANETI: Yes, thank you very much.

4 MR. FULLER: Okay, thank you. Looks like  
5 we've got a question now from someone participating by  
6 Webinar. Jim.

7 MR. SHAFFNER: Yes, Mike, from James  
8 Schweitzer, we have a question. Going to Dr. Ernst's  
9 discussion points. With a future likelihood of  
10 retaining waste on-site, there could be a backlash of  
11 bad PR.

12 We do not want this type of attention.  
13 This does not only impact future research, but there  
14 may be administrative pressure to remove valuable  
15 research such as our use of a research reactor, which  
16 does not produce Type B waste.

17 If the administration proceeds there is a  
18 high PR cost.

19 MR. FULLER: Yeah, that was a comment that  
20 we received there. I didn't hear a question in that,  
21 but thank you for that. Okay, any other questions,  
22 anyone here in the room?

23 (No response.)

24 MR. FULLER: All right, we're going to go  
25 ahead and take about, what do you think, Jim, maybe

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1 ten minutes?

2 Okay. All right. We're going to use this clock right  
3 up here. It's four minutes to  
4 10:00, so let's get back here  
5 about, say, yeah, let's push  
6 for five after. (Whereupon, the  
7 proceedings went off the record  
8 at 9:56 a.m. and came back on  
9 at 10:05 a.m.)

10 MR. FULLER: We were talking a little bit  
11 while we were on break, and we decided that, well,  
12 hold on a second, let me un-mute this.

13 My apologies to the folks on the  
14 conference line, I had the phone muted. We're just  
15 getting started back again.

16 We had a conversation while we were on  
17 break, and based upon the fact it doesn't look like  
18 we're getting a lot of questions or comments for each  
19 of the presentations, we're going to go ahead and go  
20 through the remainder of the presentations.

21 And, then, after that, we're going to  
22 open, we had a time set aside anyway. We're going to  
23 open up for a broad discussion on the issues,  
24 questions, comments and so forth.

25 Our next presenter is Leonard Smith with

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1 the Council of Radionuclides and Radiopharmaceuticals.

2 MR. SMITH: I'd like to thank the NRC for  
3 making this possible to gather this information. I  
4 think it will be very interesting to get information,  
5 quantitative information about the impact.

6 We've been hearing for many years that  
7 research has been impacted. It seems now that we may  
8 have a chance of putting together some numbers around  
9 this.

10 My presentation is to show you a partial  
11 list of biomedical research products which were  
12 deleted due to radioactive waste issues.

13 First of all let me explain who  
14 (inaudible) the Council on Radionuclides and  
15 Radiopharmaceuticals is a trade association. There  
16 are about 16 members in the United States and Canada,  
17 who manufacture and distribute radio chemicals,  
18 (inaudible), sealed sources, and radiopharmaceuticals.

19 And we provide most the world's supply of  
20 those materials. They're used for medical diagnosis  
21 and therapy, life science research and quality  
22 control.

23 And I want to now talk of the effects of  
24 deleted catalog products. When we talk about products  
25 that have been deleted, we are primarily talking about

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1 products that are known as catalog products.

2 That means that they are produced in a  
3 routine fashion, by the manufacturing industry.  
4 They're in stock and customers can order from a  
5 catalog and very rapidly you get these materials and  
6 be able to use them, within a couple of days of  
7 ordering them.

8 What has happened is since 1994, when we  
9 started running into a number of radio waste  
10 (inaudible), some of these products had been deleted.

11 And that doesn't mean that they're not completely  
12 available to customers.

13 Another type of way of getting materials  
14 is to get what we call special or custom orders.  
15 Where the customer will call in to a manufacturer, and  
16 the manufacture would build a chemical for them,  
17 radiochemical.

18 Now the problem with deleting catalog  
19 products is that this is a very inexpensive way to  
20 produce and deliver radioactive materials to the  
21 research community.

22 If you have to go to ordering these  
23 materials as a special or as a custom order, there is  
24 a lot more cost involved. So that's --

25 MR. FULLER: I'm sorry to interrupt you, it

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1 looks like we had a little power glitch or power surge  
2 in the building. So, we're going to, just excuse me  
3 for just one moment until we get this back.

4 And it looks like we lost the folks that  
5 were out on the Webinar, so just bear with us. I  
6 guess, you all saw the lights flicker. But, up here,  
7 we lost the slides.

8 Okay, it looks like we're back. Sorry for  
9 the interruption.

10 MR. SMITH: So, I'd like to discuss the  
11 impact of those deletions. First, obviously, is the  
12 viability of the radiochemical.

13 It may be very difficult for a  
14 manufacturer to, on a one, on an immediate order  
15 basis, to produce a particular radiochemical. It  
16 could take weeks or months before they can produce the  
17 material, if it's a custom order.

18 And another problem is that when we  
19 produce catalog products, it's a very efficient way to  
20 produce. There's quite a lot of rad waste generated,  
21 but it's very much smaller than the waste that's  
22 generated when you produce products in a custom  
23 manufacturing arena.

24 So there would be increased rad waste.  
25 And, of course, there's increased handling, because it

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1 would have to be treated, have special treatment and  
2 you have to understand that the manufacturing process  
3 is very complex.

4 There are facilities that are dedicated to  
5 individual products. There are also facilities where  
6 you have to, you have a team of radiochemists who work  
7 around these facilities.

8 And you have to try to choreograph how  
9 they work. And that's tough to do when you're  
10 producing catalog products. It's even more difficult  
11 when you're producing custom orders.

12 So there's automatically an increase in  
13 handling. And then the other issue is just simply  
14 feasibility of doing it. Some of these catalog  
15 products, they typically might cost three or four  
16 hundred dollars.

17 If you want to order that as a custom, it  
18 can cost many thousands of dollars, even tens of  
19 thousands of dollars. And what will happen there, is  
20 most researchers simply wouldn't be able to afford  
21 that cost.

22 Now the reason why we've deleted some of  
23 these products was mostly, it was about 100 products  
24 that have been deleted out of 1,500, that are produced  
25 by our industry.

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1           And, mostly, the deletions were due to the  
2 product generating mixed waste during the manufacture.

3           And bear in mind, that most of the waste that's  
4 generated is during manufacture. It's about ten times  
5 more waste generated than the actual product does  
6 produce.

7           The reason why mixed waste is a concern,  
8 is that mixed waste treatment and disposal is very  
9 expensive. And recently we have been able to carry  
10 out treatment in licensed facilities. This is a new  
11 regulatory change.

12           But there's still, it's still very  
13 expensive. Treatment by permitted vendors is even  
14 more expensive because vendors have to have a permit.

15           They have to learn about the material.

16           It's much easier for a manufacturer to  
17 treat, than it is for an outside organization.  
18 Another concern is some mixed waste, what we have to  
19 do is just store, until we find a technology, in the  
20 future, for treating it and disposing it.

21           And that's fairly problematic because  
22 typically it's in a waste form, it probably has, it  
23 has other hazards in addition to the radioactive  
24 hazards, so there's a storage concern of mixed waste.

25           And then finally some of these products

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1 were deleted simply because we would be using  
2 alternative technologies to produce the material or  
3 using, producing an alternative radiocompound.

4 So, in some cases, that means that the  
5 material can be or a similar compound could be used by  
6 a researcher. But it might be more expensive and may  
7 not be exactly what we need.

8 Another problem that was have in  
9 manufacturing, reasons for deleting, is the disposal  
10 of low level radioactive waste. Most of the  
11 manufacturers in the United States are located in  
12 states that used to send their waste to the  
13 (inaudible) facility.

14 And since that is closed, we now do not  
15 have access for disposing of Class B and Class C low  
16 level radioactive waste, and also some Class A  
17 radioactive waste cannot be disposed as well.

18 That's sealed sources and biological  
19 waste. Another reason for, another concern that was  
20 have, historically, we used to generate greater than  
21 Class C radioactive waste and that actually doesn't  
22 happen now.

23 Because those operations now do not occur  
24 in the United States, they occur in Europe and we have  
25 to purchase that material from Europe. That, of

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1 course, is an added cost to the process.

2 Another concern that we have, with not  
3 being able to dispose of our Class B and C waste, is  
4 that it's currently being placed in interim storage.

5 Now, we've heard already that the research  
6 community has a real problem with this, because they  
7 have very limited storage space and that is a concern  
8 to industry to.

9 It's not the quantity of the quality of  
10 our storage space that's a concern, it's basically the  
11 cost of maintaining the storage.

12 There has to be surveillance, continuous  
13 surveillance that is maintained. That's both  
14 airborne, looking for airborne emissions and you're  
15 looking for radiation levels.

16 You're looking for the quality of the  
17 containers, making sure they're not deteriorating.  
18 There has to be maintenance of the containers. So,  
19 historically, we have stored waste for multiple years,  
20 until we found a way for processing large quantities  
21 of mixed waste.

22 And we found that containers only last ten  
23 or 15 years or so and then you start to have to change  
24 them out. And, another concern, is that the whole  
25 technology of waste processing and disposal is

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1 continuously changing technology.

2           There's new technology, better ways of  
3 doing things. We have no idea of what form the waste  
4 will be disposed of in, say, ten or 15 years time. So  
5 if we are storing waste for a long period of time, we  
6 may have to repackage the waste.

7           We may have to store it in a form that  
8 makes reprocessing the waste easier. So what we'd  
9 like to do for storing waste, is to put it into a very  
10 secure form, make a solid out of it. Make a plastic  
11 or a concrete.

12           But, of course, if you're storing for a  
13 long period of time, not knowing how it's going to be  
14 disposed, you may not have that opportunity. And  
15 then, eventually, if we are talking about storage that  
16 may be many, many years, ten or 15 years or so, then  
17 there may be a time when manufacturers will run out of  
18 storage capacity.

19           And another concern for deleting products  
20 is that the low level waste disposal costs are too  
21 high. They are too high for most manufacturers. When  
22 we had access to (inaudible) the cost there was very  
23 high.

24           We feel that the cost for Class A waste  
25 that we can dispose of now, is too high, for most

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1 manufacturers. And what we really would like to see  
2 is an open market where there's more competition and  
3 there aren't restrictions on where the waste comes  
4 from and how it has to be disposed.

5 And I heard mentioned earlier about,  
6 concern about how plant waste, one concern that our  
7 industry has always had and I'm sure researchers too,  
8 is that we know that our waste, we don't generate as  
9 much waste as the power plants do.

10 But if we had to rely on waste disposal  
11 facilities just for our populations it would be way  
12 too costly. Probably two to three times more costly  
13 than the existing situation.

14 So we share the cost with (inaudible)  
15 reactors and that needs to continue. We have, in  
16 addition to a list of over 100 radiochemicals that  
17 we've deleted you to a low level waste, a mixed waste  
18 reasons, we have another 200 chemicals that were  
19 deleted.

20 And, for a variety of reasons, mixed  
21 waste, loss of access for low level waste disposal,  
22 the cost of treatment disposal, were all factors. And  
23 then, also, what was happening is that some of these  
24 products were not being purchased by the research  
25 community, because of their concerns for disposal.

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1           And also their limited storage space that  
2 prevails at many institutions. Another concern that  
3 we've had from our customers, is that in some cases  
4 there have been administrative bans on using  
5 radiochemicals where long-lived radioactive material  
6 is concerned.

7           And then another trend, which has been  
8 going on for 20 years, is that people have been  
9 changing to using alternative trace of chemicals in  
10 their research.

11           And while we applaud that there are many  
12 different ways of doing the research, always, always,  
13 almost always, the radioactive method is usually the  
14 best, for the, it's much better precision and could be  
15 much less costly than the alternative methods.

16           And then there are some problems with  
17 alternative trace chemicals in the sense that they are  
18 hazardous chemicals. And the restrictions and  
19 controls around those, from a disposal point of view,  
20 probably not as strict as radioactive materials.

21           So I'd like to just summarize by saying  
22 that it used to provide, our industry used to provide  
23 about 1,500 Grade A chemicals to the research  
24 community, prior to 1994.

25           And, since that time, we have 100, over

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1 100 deleted due to rad waste issues, primary mixed  
2 waste concerns. And then another 220 deleted, due in  
3 multiple reasons in which included rad waste.

4 We are still looking at these over 220, to  
5 see if we can better characterize what the primary  
6 reason was for their deletion. We are aware, too,  
7 that this probably just a partial list.

8 There are some companies in the  
9 (inaudible) organization that had (inaudible)  
10 information because of mostly changes in software.  
11 But it's very likely that in the next month or two, we  
12 can call people and get some more information on  
13 this.

14 And then the other thing that I'd like to  
15 mention is that we've had quite a lot of feedback  
16 from the research community and who have had, reported  
17 similar reasons for the restriction and use of  
18 radiochemicals.

19 We haven't reported on this, because we  
20 felt it's very anecdotal and we look forward to the  
21 research community coming forward and telling us what  
22 their concerns are.

23 Now, if we have time, what I'd like to do  
24 is very briefly, just run through this list, and show  
25 you some of the, just the deleted radiochemicals. And

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1 show you some of the uses that have been lost.

2 We have a group of amino acids, aspartic  
3 acids, histidine, isoleucine, theanine(phonetic),  
4 tyrosine and (inaudible). These are comportsing  
5 label. Yes, okay. That's fine, I can just talk  
6 through it, whatever you like.

7 These compounds are used to make studies  
8 on metabolism mostly. They can also be used by  
9 researchers to make other compounds, actually feed  
10 these amino acids to organisms to create other layered  
11 label compounds that could be used further in  
12 research.

13 We have, another one I'm pulling out here  
14 is (inaudible) acid. There are (inaudible) and  
15 they're used for testing receptor centers.

16 Another one is (inaudible) acid, which is  
17 used for neurochemical (inaudible) testing receptors.  
18 So it's for use in neuroid(phonetic) chemical binding  
19 studies.

20 I have another bunch of steroids here,  
21 cholesterol, testosterone, (inaudible), these are  
22 steroids that are used to study steroid receptors. We  
23 have dinitrofluorobenzene, which is used for  
24 photochemical experiments, photochemical experiments  
25 of cells, cellular biology.

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1 Benzopyrene and (inaudible) acetate.  
2 There are used to test the mechanisms of (inaudible)  
3 in cancer research. Chlorpromazine, hydrochloride,  
4 (inaudible), and (inaudible). These are radio  
5 (inaudible) gangs which have gained use for studying  
6 neuro receptors.

7 We have a bunch of drugs which are also  
8 regularly (inaudible) study neuro receptors,  
9 Tetraphenofosfonium bromide and (inaudible)  
10 hydrachloride. Another bunch, (inaudible), a couple  
11 of others. These are peptides and they are used for  
12 studying the effects of endorphins in humans.

13 Zopitan is a drug that's used for a  
14 sleeping inducing drug and for relaxing. Another  
15 bunch of (inaudible) is telenzepine, (inaudible) and  
16 (inaudible). These are used to study receptors,  
17 again. And the last one, the (inaudible) is used for  
18 cardiovascular receptors.

19 And then finally I have, we have  
20 dextrometamorphine(phonetic), which is an opiate which  
21 is for receptor studies of opiates. So, I think you  
22 can see that these are pretty important research and  
23 right now most of those rate of chemicals are really  
24 not accessible to the research community. Thank you.

25 MR. FULLER: Thank you, Mr. Smith. As I

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1 said earlier, we're going to move on to the next  
2 presentation and then later on we'll have an  
3 opportunity for some broad discussions of some of the  
4 issues.

5 Our next speaker is Dr. Robert Gould.  
6 He's joining us by teleconference. He's representing  
7 the Physicians for Social Responsibility. Hold on,  
8 just a second, wait a minute. Are you there, Dr.  
9 Gould? We'll just wait for just a couple of minutes.

10 Go ahead.

11 PARTICIPANT: This is Bill (inaudible). I  
12 just wanted to make sure that everybody is aware of an  
13 NCRP Report, Report Number 143, entitled Management  
14 Techniques for Laboratory and Other Small  
15 Institutional Generators to Minimize Off-site Disposal  
16 of Low Level Radioactive Waste. I was the Chair of  
17 that Committee that developed that report and it  
18 includes a lot of suggestions for alternate markers  
19 and also lots of ways to minimize the generation of  
20 radioactive waste in a laboratory setting.

21 So, if you're not aware of it, you know, I  
22 would refer you to it, because it does give some very  
23 useful information, I think, in terms of how to set up  
24 a program and also how to actually deal with specific  
25 issues.

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1 MR. FULLER: Thank you for that  
2 information.

3 DR. GOULD: Hello.

4 MR. FULLER: Hello, is Dr. Gould on the  
5 phone?

6 DR. GOULD: Yes, can you hear me?

7 MR. FULLER: We can hear you just fine, Dr.  
8 Gould.

9 DR. GOULD: Oh, great, okay. Sorry for the  
10 delay.

11 MR. FULLER: That's all right, if you're  
12 ready, again, this is Dr. Robert Gould with the  
13 Physicians for Social Responsibility. If you're ready  
14 Dr. Gould you can go ahead and proceed.

15 DR. GOULD: Again, I'm Bob Gould, I work as  
16 a, I'm an Associate Pathologist at Keyser(phonetic)  
17 hospital in San Jose and have been on the national  
18 board and former president of the national  
19 organization, Physicians for Social Responsibility.

20 It has about 20,000 members nationwide and  
21 I've been President of the San Francisco Bay Area  
22 Chapter with about two to three thousand members since  
23 1989.

24 And, in that, in both capacities at CSR  
25 was very involved with the issue of the Ward Valley

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1 low level, the proposed Ward Valley low level  
2 radioactive waste disposal facilities issues in the  
3 late '90s and early part of this decade and was on the  
4 scientific commission advising on that issue that was  
5 appointed by, at the time, Governor Gray Davis.

6 And it's, I just want to say at the outset  
7 that our organization, as an organization, primarily  
8 of physicians and other health providers, we're very  
9 sensitive to the import of the issues that have been  
10 raised by those within the medical community and the  
11 research community in terms of problems with  
12 developing materials, waste disposal.

13 We consider our patient health, as all the  
14 others on the phone, of primary import. So our  
15 position on this has been geared towards trying to be  
16 able to find the solution for the medical waste issue  
17 specifically.

18 The work on, our work on the Ward Valley  
19 issue, obviously had concerns that were related to the  
20 specifics of that particular site, in terms of design,  
21 possible leakage, etcetera, which I think are, again,  
22 specific to that or other sites that share similar  
23 issues.

24 However, part of that work also revealed  
25 what we saw as a problem with issues of quote/unquote,

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1 low level radioactive waste which, in our view,  
2 haven't really been resolved in terms of what  
3 constitutes that waste stream.

4 And, which I think Diane Darrigo in her  
5 previous comments addressed as well. We certainly  
6 know from the time that we were dealing with the Ward  
7 Valley issue, that Department of Energy at the time,  
8 this being the late '90s, where I recall most of that  
9 information came out, is that when we're considering  
10 what was consider low level radioactive waste, that  
11 the vast majority of radio of both the volume of waste  
12 and radioactive waste, was not from that defined by  
13 the medical waste stream, which was on the order of  
14 one percent.

15 But would be derived from civilian nuclear  
16 power facilities and other similar sources. So that  
17 this included fuel related waste issues such as those  
18 radioactive elements that were constituents of reactor  
19 cooling water, which are highly radioactive and long-  
20 lived, such as cesium137, strontium90 and iodine 129.

21 Our other concern was that the radioactive stream  
22 that might be slated for, quote/unquote, low level  
23 radioactive waste sites would include irradiated  
24 reactor parts, as well.

25 We, as a physician's organization, are

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1 very concerned, continue to be very concerned about  
2 the potential impacts on public and environmental  
3 health of radioactive materials, as outlined in the  
4 most recent BEIR Report Number 7.

5 We recognize that there is no safe level  
6 of radiation. And, as such, our concerns remain  
7 geared towards narrowing the scope of dealing with the  
8 problem in terms of the medical waste stream, and  
9 making sure that whatever solutions are being offered,  
10 don't allow a back door for nuclear power generated  
11 waste.

12 I'm raising that partially because of  
13 review of the comments in the Federal Register, my  
14 understanding of the comments from NRC Staff was in  
15 addition to dealing with these issues that are germane  
16 to medical waste that, quote/unquote, other  
17 radioactive waste would be considered as well.

18 And that's our major concern. We  
19 recognize that there are powerful interests in our  
20 country, at this point in time, particularly as  
21 regards to development of energy legislation to meet  
22 the challenges of climate change, that there is a  
23 concerted push for a new generation of nuclear power  
24 plants as the, so-called, solution.

25 Which we, as an organization, are opposed

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1 to, as opposed to dealing with more safe and  
2 sustainable energy sources.

3 So I think that, in summary, I think that  
4 the charge of this group really should be, again, to  
5 deal with dealing with the specific issues of medical  
6 waste and research waste and to isolate as much of  
7 that as possible for the vast majority of that waste  
8 stream which we believe still remains materials that  
9 could, a relatively low radioactivity and with short  
10 half-lives, be dealt with in storage decay type  
11 facilities.

12 Perhaps the solution in this regard, in  
13 additional to utilizing that type of procedure in  
14 facilities that now exist, is that efforts could be  
15 made, perhaps to have, develop centralized or  
16 Government-subsidized storage to decay facilities that  
17 could deal with issues of particular hospital and  
18 research facility settings to be able to deal with  
19 that waste and, again, not provide, in our view,  
20 basically an opening for being able to deal with the  
21 issues of the nuclear power industry which have been  
22 magnified with the impending closing of the Yucca  
23 Mount facility.

24 That would be my final remarks on this.  
25 Again, we do have concerns about the issues that have

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1 been raised by other folks on this, but we really want  
2 to underscore, stay focused on the specific problems  
3 of that waste stream and not compound it with  
4 providing a solution to the dilemma of the nuclear  
5 power industry. Thanks for the time to be able to  
6 discuss this with you.

7 MR. FULLER: Thank you, Dr. Gould. Next,  
8 we have Michael Zittle from Oregon State University.  
9 Michael, are you on the line?

10 In order for everyone to hear you,  
11 Michael, we're going to need you to call in on the  
12 conference line, if you haven't already done so. Are  
13 you there yet? All right, we'll give Michael a couple  
14 of more minutes.

15 MR. FULLER: If you could type him a  
16 message, Jim, just tell him please call in. Okay, he  
17 can hear me?

18 MR. ZITTLE: I can hear you.

19 MR. FULLER: Was that you, Mike, I thought  
20 I heard you come over the conference line, are you on  
21 the conference line right now? Okay, we're trying one  
22 more time. Michael can you hear us?

23 All right, let's do this. Michael, if you  
24 can hear me, we really need you, in order for us to do  
25 this, you have to call in on the conference line.

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1 That's the 1-800 number, we've given it out several  
2 times.

3 Let me give it to you one more time. Is  
4 he on the phone, Jim, or is he on the phone tied into  
5 the Webinar? Because I think we're going to move on  
6 to the next presenter now, and we'll come back to  
7 Michael.

8 And, Michael, I think you can hear us.  
9 That number again is 888-942-9716, the pass code  
10 16393, and then you hit the pound key.

11 Okay, the next on the agenda is Joseph  
12 Ring, with Harvard University. Joseph, are you on the  
13 conference call? Someone just joined. Is that either  
14 Michael or Joseph?

15 MR. ZITTLE: Yeah, this is Mike right here.

16 MR. FULLER: Oh, great, Mike, okay. Glad  
17 to have you with us.

18 MR. ZITTLE: You can hear me? Okay, cool.

19 MR. FULLER: Yeah, we can hear you fine,  
20 now. And I'm sorry that was confusing, but for folks  
21 who are making presentations to everyone, we needed to  
22 do it because of the technology through the conference  
23 call and not the Webinar, for the audio part.

24 Okay, at this time, Mike, if you would, go  
25 ahead.

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1 MR. ZITTLE: Hello, my name is Mike Zittle  
2 and I'm here to represent Oregon State University and  
3 Campus Radiation Safety Officers, to discuss how low  
4 level radioactive waste issues affect academic  
5 institutions.

6 There are three main categories of  
7 challenges that academic generators face with regards  
8 to radioactive waste disposal. Lack of disposal  
9 capacity and disposal options, excessive disposal  
10 costs and storage and security challenges.

11 Currently, 36 states do not have disposal  
12 access for Class B and C waste, despite plentiful  
13 capacity remaining in existing facilities. Compact  
14 restrictions and exclusionary authority of waste,  
15 preclude academic institutions from utilizing  
16 technologies and processes that can result in  
17 tremendous cost savings to the universities and the  
18 taxpayers that support these universities.

19 The academic community needs additional  
20 disposal options to increase our efficiency and cost  
21 effectiveness. With regard to excessive disposal  
22 costs, Northwest and Rocky Mountain Compact  
23 Researchers have a non-competitive disadvantage due to  
24 approximately 50 percent higher disposal costs than  
25 generators in other compacts.

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1           Lack of free market competition creates  
2 these high disposal costs. Furthermore, the cost of  
3 radioactive waste disposal has outpaced the cost of  
4 inflation over the past 20 years, significantly.

5           And, fees and surcharges are unreasonably  
6 high for waste disposal and site management. Next  
7 slide, please. Storage and security challenges.  
8 Storage space may be unavailable or costly to  
9 maintain.

10           Storage may cause unnecessary radiation  
11 exposure, or increased possession limits and costly  
12 enhanced security requirements, and lastly radioactive  
13 waste and storage may pose a security threat. Next  
14 slide, please.

15           A task that was given to me by the  
16 Commissioners in April, was to come up with a list of  
17 specific medical and research activities that are  
18 impacted by radioactive waste disposal issues.

19           And, as the representative from CORAR  
20 indicated earlier, major radio isotope suppliers have  
21 stopped manufacturing many isotope compounds due to  
22 waster disposal issues. Next slide, please.

23           Biomedical research protocols utilize many  
24 of the discontinued carbon14 and tradium compound,  
25 such as (inaudible), (inaudible), and many amino acid

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1 compounds, as well as a host of other compounds.

2 One researcher in Kansas, who I contacted.

3 Indicates that the's unable to perform basic  
4 molecular biology research without these radioisotope  
5 compounds. Next slide, please.

6 Environmental fossil fuel dilutant studies  
7 are negatively affected by the inability to obtain  
8 compounds such as tritiated benzopyrene, carbon14  
9 pyrene. A researcher in Oregon states that he cannot  
10 perform accurate risk assessments of the potential  
11 health hazard associated with these pollutants,  
12 without these compounds.

13 As indicated earlier by the CORAR  
14 representative, although these compounds are  
15 unavailable for major manufactures, they could be  
16 synthesized by smaller manufacturers or on a case-by-  
17 case basis.

18 However, as he indicated, it cost about  
19 \$10,000.00 to make a small, custom order of these  
20 particular radioisotopes. And the researcher's grant  
21 cannot support this study. Next slide, please.

22 Nutritional studies rely heavily on  
23 carbon14 labeled fatty acids, using the compounds  
24 listed below. A researcher in Oregon indicated to me  
25 that this continuing, the availability of the carbon14

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1 labeled fatty acids, would compromise his ability to  
2 document changes in the metabolism of these fatty  
3 acids in mouse and human models of metabolic disease.

4 Next slide, please. In addition to  
5 research activities, medical activities are also  
6 affected by waste disposal issues. Two Opthamologists  
7 in California retired several years ago and wish to  
8 terminate their radioactive materials licenses.

9 However, they have no disposal outlet for  
10 at least three strontium90 eye applicator devices.  
11 And storing these sources may present safety and  
12 security challenges, as these Licensees terminate  
13 their licenses. Next slide, please.

14 Radiation Oncology Clinics also have this  
15 difficulty disposing of unused brachytherapy sources.

16 And like eye applicators, storage of these sources  
17 also present safety and security challenges. Next  
18 slide, please.

19 A radio pharmaceutical manufacturer in  
20 Tennessee wanted to purchase a (inaudible) 252 source  
21 to perform tests on a new shielding design for a  
22 (inaudible) facility. However, the company ultimately  
23 decided not to proceed with the new shield design,  
24 because they didn't want to incur liabilities  
25 associated with purchasing a source with no disposal

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1 option.

2 Solutions to academic and medical facility  
3 low level radioactive waste disposal issues include  
4 amending the Act to adapt to the changing framework of  
5 the low level radioactive waste disposal.

6 In particular, the Act and the compact  
7 often preclude generators from utilizing waste  
8 processing services. Such as volume reduction, by  
9 incineration, with no disposal volume attributed to  
10 the generator.

11 This has tremendous opportunity to reduce  
12 the cost, especially to generators in the Northwest  
13 and Rocky Mountain compacts. An alternative solution  
14 is to repeal the Act and create competition and to  
15 increase efficiency and cost effectiveness. Next  
16 slide, please.

17 Another solution is to authorize DOE  
18 facilities to accept Class B and C waste from  
19 generators without access to a commercial disposal  
20 facility.

21 And, lastly, an alternative solution is to  
22 modify the DOE's disposal criteria for greater than  
23 Class C waste to include Class D and C waste, as well.

24 Next slide, please.

25 In conclusion, the academic and medical

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1 community is suffering due to lack of disposal  
2 capacity and options, excessive disposal costs and  
3 storage and security concerns.

4 And, the academic community request  
5 cooperation from all players and stakeholders to  
6 utilize all existing processes and facilities and to  
7 develop more low level radioactive waste disposal  
8 options for the academic and medical community. Thank  
9 you.

10 MR. FULLER: Thank you, Mike. The next  
11 presenter we have on the agenda is Joseph Ring, from  
12 Harvard University. Are you there, Joseph?

13 (No response.)

14 MR. FULLER: Is he on the Webinar, Jim?  
15 Okay. One last chance, are you there Joseph?

16 (No response.)

17 MR. FULLER: All right. The next thing we  
18 had on the agenda, we had published in the Federal  
19 Register Notice a number of questions. And, hold on.

20 All right, before we get to those questions, is there  
21 anyone else in the room that have any prepared remarks  
22 or statements they'd like to make?

23 (No response.)

24 MR. FULLER: Yeah, we're going to do that  
25 in just a few minutes, Jim. The question was are we

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1 going to take questions on the presentations, and we  
2 are going to do that. But, in a few minutes.

3 Let me hand you the microphone, you've got  
4 a question over here.

5 MR. SHAFFNER: I believe we have  
6 representatives from the Organization of Agreement  
7 States and Conference of Radiation Control Program  
8 Directors. Would either of you like to make a  
9 statement?

10 MR. FULLER: Thank you, Jim.

11 MS. GILLEY: This is Debbie, I was waiting  
12 for Shawn to speak up first.

13 MR. FULLER: Okay, Shawn, are you on the  
14 line?

15 (No response.)

16 MR. FULLER: Okay, Shawn, if you're on the  
17 Webinar and not on the conference line, just like we  
18 had with Mike Zittle from Oregon State University. If  
19 you'd like to make a statement, call in on the  
20 conference line, the 888 number. Debbie, why don't  
21 you go ahead.

22 MS. GILLEY: Okay, I'm Debbie Gilley, I  
23 work with the Florida Bureau of Radiation Control  
24 Program and I'm representing the Conference of  
25 Radiation Control Program Directors.

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1 I am the Chair of the E34, which is the  
2 unwanted radioactive source committee for the  
3 conference.

4 CRCPD has prepared remarks to be sent to  
5 Jim today. Some of the highlights of those remarks  
6 are that we do believe that the lack of disposal  
7 options does have impact on the state.

8 Primarily if sources are material is left  
9 abandon, it does become a state issue. We appreciate  
10 NRC taking a lead role on this as a federal partner to  
11 find some solutions for us and look forward to working  
12 with both long-term, looking to getting long-term and  
13 short-term solutions to this problem.

14 We currently are seeing research and  
15 medical institutions safely storing radioactive  
16 material that cannot be transferred to waste disposal  
17 sites.

18 We are also seeing that those research  
19 activities that can, do have disposal pathways, are  
20 continuing. It is those research that doesn't have a  
21 disposal pathway either through disposing of small  
22 amounts of radioactive material and sedentary sewer  
23 system or at the Clive Utah facility.

24 That we are unsure of as to whether or not  
25 that research has been abandon or not being allowed.

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1 We simply weren't able to gather information on that.

2 And that is a concern, because there are some long-  
3 lived radioactive materials that could probably be  
4 beneficial for research activities.

5 One of the other things that we're seeing  
6 is in medical institutions. There are some medical  
7 procedures that actually produce radioactive waste.  
8 Primarily, the yttrium90 microspheres that are used  
9 for the treatment of liver cancer.

10 As a byproduct of that treatment, there  
11 are some contaminants that are, cannot be disposed of  
12 and they're mixed waste. They're not, they're mixed  
13 with both chemicals, a lead component in there, as  
14 well as europium and also there is biologicals which  
15 have presented a problem for some of our medical  
16 institutions.

17 No one has been denied healthcare because  
18 of this activity, but it does create a storage problem  
19 for those institutions that do a lot of these  
20 procedures. And we'd like to bring that to the table  
21 as an interest or concern from the state.

22 In closing remarks, we really need to find  
23 either a solution for disposal or some kind of secure,  
24 safe, long-term storage until a disposal option in  
25 available.

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1 Many other countries don't have disposal  
2 options either and they do have on the table long-term  
3 storage capability so that we can continue to work  
4 with research and to provide the medical care to  
5 citizens of the Unites States that it necessary.  
6 Thank you.

7 MR. FULLER: Thank you, Debbie. Shawn, are  
8 you on the line?

9 MR. SEELEY: I'm on now, Michael, thanks.  
10 Yeah, listening to the conversation this morning, a  
11 lot of the issues have been raised by the various  
12 speakers, and what we're finding, as Debbie mentioned  
13 on inspection, here in Maine we pulled out of the  
14 Texas compact when our nuclear power plant closed.

15 We here have, you know, a half dozen or so  
16 facilities that are storing the longer lived isotopes  
17 on site. They are cutting back their research  
18 accordingly, so that they don't have those isotopes on  
19 site.

20 As we are very limited, in fact almost no  
21 options for disposal here in the state, as well as a  
22 bunch of other states across the country. Coupled  
23 with that, if we do have an opening, from time-to-time  
24 that cost of disposal is very high.

25 And that's a lot of the grant money that

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1 these researchers are getting to fund these projects,  
2 they may have to waive that money or not accept that  
3 money because of the high cost of disposal.

4 So, again, we've seen a lot of the issues  
5 that Debbie just pointed out. They're storing it on  
6 site, which could become an issue ten, 12, 15 years  
7 down the road. I mean who know? But we don't want it  
8 stacking up in these facilities as they have small  
9 rooms that sometimes they get filled up very fast.

10 And our Licensee have done their best to  
11 reduce the amount of waste that they have by trying to  
12 only throw out that material that is highly  
13 contaminated or, you know, more than slightly  
14 contaminated.

15 But, you know, we've faced all these  
16 issues and are looking for a positive solution to a  
17 problem that's affecting many people across the  
18 country. Thank you.

19 MR. FULLER: Thank you, Shawn. And, once  
20 again, for those of you who don't know, that was Shawn  
21 Seeley with the Organization of Agreement States. And  
22 if I'm not mistaken, that's the state of Maine, right,  
23 Shawn?

24 MR. SEELEY: Correct.

25 MR. FULLER: Okay, thank you. We have

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1 someone who just joined us. I'm assuming, oh, the  
2 Metro guy here. Introduce yourself, please, sir.

3 MR. COTTON: I'm Tom Cotton with Complex  
4 Systems Group. We're a small group of consultants who  
5 have been working on radioactive waste management  
6 issues, for the last 20 years on everything from  
7 policy development and legislative development to  
8 (inaudible) issues, public development, public  
9 communication.

10 MR. FULLER: Welcome. And since we were  
11 able to hear the metro train, I'm assuming you were  
12 able to hear us some. Okay, so the technology seems  
13 to be helping us as far as access goes.

14 Okay, next, as I started to discuss a few  
15 minutes ago, in the Federal Register Notice there were  
16 a number of questions that we posed, again, as another  
17 means of helping us to get as much information as we  
18 can about that.

19 And I'm going to ask Jim, to just talk a  
20 couple of minutes about those questions and what they  
21 mean to him.

22 MR. SHAFFNER: Thank you, Mike. We're not  
23 going to read all the questions. I'll just leave them  
24 up on the screen for a few minutes, so those of you  
25 who maybe haven't seen them for a while in the Federal

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1 Register Notice, can look at them.

2 But we're trying to use these questions to  
3 sort of frame our information gathering on this  
4 important issue.

5 The first one is, are you involved in  
6 research that uses radioactive sources and materials?

7 And then, if you could, describe what that is. And  
8 then further, have alternative technologies taken the  
9 place of radioactive materials.

10 And I think some of the presenters spoke  
11 to that issue this morning, but we, you know, we'd  
12 like to continue to inform the discussion. Next  
13 slide.

14 Then what state or compact are you located  
15 in, and what types of Licenses, for the regulators,  
16 what kind of Licensees use these types of materials.  
17 And then what are some of the disposition pathways  
18 that you have used or continue to use or have been  
19 precluded to you because of some of the challenges  
20 that we've heard about. Next slide, please.

21 And have you historically disposed of  
22 these materials at a low level waste disposal facility  
23 and has your research been affected. Again, I think a  
24 number of you who have spoken to this issue, so far  
25 this morning.

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1           And are you currently storing the material  
2 on site. Next slide. Finally, have you reevaluated  
3 research of medical needs because of the lack of  
4 disposal access. And what adaptations have occurred,  
5 and finally, has the cost effected research.

6           Again, these are all things that the  
7 speakers, here and on the phone, had touched upon this  
8 morning. And, again, we just wanted to present those  
9 briefly, as we continue with the discussion. I'll now  
10 turn it back over to Mike.

11           MR. FULLER: And I heard, Jim, the October  
12 20th date mentioned a couple times earlier. That we,  
13 can you talk a little bit about how folks have  
14 opportunities to continue to provide us with input?

15           MR. SHAFFNER: I think we'll address that  
16 again at the end of the meeting. But, yes, we would  
17 like to get as many comments as possible by October  
18 the 20th, so that we can have a chance to dissect and  
19 analyze the material and get it in a format to be able  
20 to present to our commission by the first of the year.

21           But we continue to look forward to, you  
22 know, dialogue with the folks that are here, on this  
23 issue, you know, even obviously after that date as  
24 well.

25           MS. BUBAR: Mike, I'd like to mention that

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1 we're creating a recording of this meeting today,  
2 also, so that we're obviously all listening but we  
3 have a tape being made so we can go back and listen to  
4 it as we're preparing the summary.

5 MR. FULLER: Thanks, Patty. Okay, what  
6 we're going to do now is open it up. We're going to  
7 kind of go in order like we did earlier. We're going  
8 to open up here in the room for any additional  
9 questions, for any of the presenters.

10 Or any comments that anyone would like to  
11 make or just a general discussion. After we've  
12 finished in here then we'll open it up to the phone  
13 lines and to the Webinar, as well.

14 One thing I would ask is that if you have  
15 a comment or a question, if you would make that known  
16 to me and I'll bring you the microphone.

17 MS. BUBAR: May I introduce Larry  
18 Camper (phonetic) before he leaves the room. I don't  
19 know whether they were getting ready to leave or not.

20 MR. FULLER: Yeah, Larry has been sneaking  
21 in and out. Here you go.

22 MS. BUBAR: Larry, if you want to introduce  
23 yourself.

24 MR. CAMPER: Thank you, Patty, good morning  
25 everyone. I'm Larry Camper, the Director of the

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1 Division of Waste Management and Environmental  
2 Protection. Thank you for being here today, taking  
3 part in this important discussion. I think it is fair  
4 to say with the closure Barnwell the Class B and C  
5 waste, there has been a heightened interest.

6 Certainly the commission has that, as was  
7 expressed to us in April, and we value your input  
8 immensely as we address that issue. Thank you.

9 MR. FULLER: Thank you, Larry. I noticed  
10 Jim Kennedy of the NRC Staff has a question. And I  
11 just identified him. But as I hand folks the  
12 microphone, if you have questions, please make sure  
13 that if I haven't identified you, that you identify  
14 yourself for the record. Thank you.

15 MR. KENNEDY: Dr. Leonard Smith of CORAR.  
16 You mentioned that Class A biological waste can't be  
17 disposed of. Can you say more about that, in  
18 particular, why, what the issue is?

19 MR. SMITH: Len Smith of CORAR. Biological  
20 waste, we're mostly talking about Class A waste. It  
21 used to have to be disposed of in (inaudible) for most  
22 Licensees, because the Clive, Utah site does not  
23 accept biological waste.

24 They do accept waste that might have  
25 previously been biological waste and been through

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1 certain processes. But there's still a lot of  
2 biological waste that they don't accept.

3 Also, Class A sealed sources are not  
4 accepted at Clive. And the real, I believe, is  
5 agricultural research where you have large animals and  
6 they tend to be put in frozen storage right now.

7 MS. BUBAR: Yes, I have a question for you  
8 also, Len. Could you just provide a little bit more  
9 explanation about the mixed waste issue versus the low  
10 level radioactive waste issue. I wasn't sure whether  
11 you were making a distinction that the mixed waste has  
12 a particular problem that the other waste doesn't?

13 MR. SMITH: This is Len Smith of CORAR.  
14 Yeah, the mixed waste has particular differences. The  
15 problem is that even if the disposal sites were  
16 available to us, you still have to process the mixed  
17 waste to get it into a form that's acceptable to the  
18 disposal site.

19 And that can be very costly. So, there  
20 are some mixed waste forms that are fairly process  
21 and, as I mentioned, we have regulatory ability for  
22 licensees to now do that in certain states, from the  
23 EPA Conditional Exemption Rule.

24 There are some mixed waste forms which are  
25 very difficult to process. The processing is complex.

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1 These are typically like hydrocarbons,  
2 fluorohydrocarbons and it compounds with chlorine and  
3 fluorine in them.

4 What happens there, is when you try to  
5 process them using normal catalytic methods it  
6 destroys he catalyst.

7 So it becomes, you destroy a whole lot of  
8 equipment and becomes very expensive. Now, there are  
9 vendors that can do this. They have more  
10 sophisticated methods and they can do that, but it's  
11 an expensive process.

12 Mostly in our manufacturing world we've  
13 simply discontinued producing those materials, just to  
14 avoid the cost.

15 MR. FULLER: Any other comments or  
16 questions? Patty, go ahead.

17 MS. BUBAR: I have a question for Mike  
18 Zittle, I don't know whether he's still able to hear  
19 us or speak back to us.

20 MR. FULLER: Mike, are you on the  
21 conference call, still?

22 (No response.)

23 MR. FULLER: If you, Mike, if you could  
24 rejoin us we may come to your question in a few  
25 moments. If you could join us on the conference line,

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1 please? Thanks.

2 Anyone else?

3 MR. SEELEY: This is Scott Seeley, I have  
4 a question.

5 MR. FULLER: Yes, Scott, please go ahead.

6 MR. SEELEY: Is there any idea of how much  
7 A, B and C, waste in the academic, medical community  
8 is out there?

9 MR. FULLER: Anybody want to take that  
10 question on?

11 (No response.)

12 MR. FULLER: Mike, I don't see anybody  
13 raising their hands. Wait a minute, here's someone.

14 MR. ANDERSON: This is Ralph Anderson, I'm  
15 with the Nuclear Energy Institute. If you go to the  
16 DOE System that tracks low level radioactive waste,  
17 you can break out that information.

18 I just wasn't sure if by out there you  
19 meant existing in the universe or if you meant not  
20 being able to be disposed of, or maybe if you could  
21 clarify that a little bit?

22 Material in storage is not specifically  
23 tracked.

24 MR. SEELEY: -- talking about in this  
25 discussion. How much a year, how much is in storage

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1 that people would really like to get rid of? Some  
2 numbers to give us an idea of the scope of the  
3 disposal problem itself?

4 MR. ANDERSON: Oh, okay, yeah. The  
5 material that is actually disposed of, year-by-year,  
6 is captured in the system that is run by the  
7 Department of Energy. It comes from the manifest  
8 information that is used for recording the disposal  
9 of radioactive material.

10 To my knowledge, and NRC could speak to  
11 this, though I don't think there is any formal  
12 reporting process for radioactive material that is  
13 stored by Licensees.

14 MR. FULLER: Thank you. Okay, it doesn't  
15 look like we have any more questions at this time, or  
16 comments at this, hold on. Well, all right, hold on a  
17 second, it looks like we do have one.

18 MR. ZITTLE: This is Mike Zittle, I'm back  
19 on the phone now.

20 MS. BUBAR: Oh, thank you, Mike. I just  
21 wanted a clarification. You mentioned some of the  
22 kinds of waste and the issues that you have. I didn't  
23 hear you make any mention of either the sealed source  
24 recovery program or the CRCPD program.

25 And I was just wondering if you had any

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1 input on that in terms of the ability of that program  
2 or either of those programs to take care of some of  
3 the issues that you're seeing on some of the campuses?

4 MR. ZITTLE: Yes, okay. When I came to the  
5 NRC in April, I spoke solely on the source problems  
6 with regards to off-site source recovery program and  
7 the scatter program. I didn't include that in this  
8 particular talk, but I could briefly mention a few  
9 things about those programs.

10 So, in my experience, at Oregon State  
11 University, I've had approximately 29 sources listed  
12 on the off-site source recovery list for about two and  
13 a half years now, and I have not received any  
14 correspondence regarding near term disposal of these  
15 sources.

16 In addition, we have found that the  
17 registration process for registering the sources  
18 through us, site source recovery program, is very  
19 clunky and inaccurate.

20 I submitted my inventory with 29 sources  
21 in 2007, and recently, maybe six months ago, I got a  
22 correspondence back that said they received my  
23 inventory and they wanted me to confirm that I had  
24 five sources listed on my inventory.

25 So, the information is not entirely

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1 accurate to off-site source recovery program. And  
2 we've found the process to clunky and we haven't  
3 really heard anything about whether or not we'll be  
4 able to dispose of any sources through this program.

5 A subset of this program is the scatter  
6 program and that's basically for smaller sources. We  
7 were approached by the state of Oregon to be named as  
8 the host institution for the state of Oregon to accept  
9 all of the sources from the state of Oregon and  
10 repackage them and send them off for disposal.

11 However, we have some serious concerns  
12 about incurring liabilities with taking possession of  
13 these sources. We have storage and security concerns  
14 and we're really not in a hurry to get into the  
15 business of accepting everybody else's sources that we  
16 may end up taking possession of without disposal  
17 access in the future.

18 The other problem with the scatter program  
19 is the cost. Basically, it's a split-sharing cost  
20 between off-site source recovery and scatter and the  
21 generator.

22 And the cost is so significant that  
23 generators have determined that simply storing the  
24 sources is a better, cost-effective option than  
25 disposing of these sources through these programs.

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1 Which the programs really aren't moving  
2 forward, at least in the state of Oregon, at this  
3 point. So, I guess that's kind of an answer to your  
4 question. Is there anything else that you wanted to  
5 ask?

6 MS. BUBAR: No, thank you.

7 MR. FULLER: Thank you, Mike. We're going  
8 to Diane Darrigo now.

9 MS. DARRIGO: I wanted to know, on those  
10 sources, are they greater than C, or is it just too  
11 expensive to send them to the Hanford site? He's in  
12 Oregon.

13 MR. ZITTLE: Were you asking me that  
14 question?

15 MS. DARRIGO: Yeah, Mike, you're in Oregon  
16 and so you were talking about your sources?

17 MR. ZITTLE: I have a static connection  
18 right now. So were you asking if we have Class C  
19 sources in storage?

20 MS. DARRIGO: I was wondering why you're  
21 having a problem with sources, if you're in the  
22 Northwest compact, whether it was just an expense  
23 issue or why they couldn't go to Hanford or if they  
24 were greater than C and couldn't go to Hanford?

25 MR. ZITTLE: Okay, that's a good question.

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1 One example that I can provide for you, with regards  
2 to a cobalt60 (inaudible) source that's an old source,  
3 decayed significantly down from its original activity  
4 and is no longer useful to us, because we have another  
5 (inaudible) that we use.

6 So we'd like to get rid of this  
7 (inaudible). And we can dispose of this (inaudible)  
8 at the Hanford facility. However, the cost to dispose  
9 of this source is \$130,000.00. And to a state-run  
10 public institution \$130,000.00 is completely  
11 unacceptable.

12 There's no way that the university could  
13 ever come up with that amount of money to dispose of  
14 that one particular source. So we've opted to store  
15 the source until more options come along, off-site  
16 kicks in and gives us some money or just hold on to it  
17 for as long as we need to.

18 Because we can't afford \$130,000.00 to  
19 dispose of that source.

20 MR. FULLER: Okay, thanks, Mike.

21 MR. ZITTLE: -- some of the sources or one  
22 source that we have in storage awaiting disposition,  
23 because of excessive cost to dispose of that source.

24 MR. FULLER: Thanks, Mike. And just to  
25 clarify the classification of that particular source?

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1 MR. ZITTLE: Excuse me? What was the  
2 question again?

3 MR. FULLER: Is that, would that be  
4 considered a Class B source?

5 MR. ZITTLE: Yes, that would be Class B.

6 MR. FULLER: Thank you. I understand we  
7 have a couple of other folks who have written in on  
8 the, I'm sorry. I'm sorry, okay, we have one more  
9 comment or question here, and then we're going to go  
10 to the phone lines. We have some folks who have  
11 written in comments on the Webinar that said they are  
12 on the phone with a question.

13 So this technology seems to be working  
14 pretty good. So, but here you go, Lynn.

15 MS. FAIRABENT: Lynne Fairabent with AAPM.  
16 Patty, just to follow up on your question, from our  
17 perspective of scatter, and we have been involved with  
18 the pilot project that was done in Florida and we have  
19 had numbers that have been involved with the round ups  
20 in Los Angeles area.

21 And from our members' perspective it has  
22 been a success. The problem is these were, in  
23 particular the Florida demo was done prior to Barnwell  
24 closing. And in Florida, the state took possession  
25 and ownership.

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1           So that the issue that Mike Zittle was  
2 talking about with the University of Oregon being, in  
3 essence, the collection point, was totally different.

4           Two of the issues we've had, however, one  
5 is for the non-agreement states, there's been no  
6 involvement. From our perspective, we've not seen  
7 involvement from NRC to help Licensees in the non-  
8 agreement states participate or have a collection  
9 point for scatter.

10           And then, secondly, because of the closure  
11 of Barnwell, we do know that the scatter program has  
12 had some (inaudible) in being able to round up the  
13 sources that have been registered.

14           But those are being worked on between the  
15 conference and the National Nuclear Security  
16 Administration, as an arm of DOE on that. And we  
17 continue to work with both of them in order to help  
18 move that forward.

19           But, again, the lack of disposal option  
20 and, in particular, if a state does not have  
21 mechanisms that Florida did, to accept the sources and  
22 package them, then we do enter into another level of  
23 difficulty.

24           But, I still believe that Licensees across  
25 the board, if they have unwanted sources that meet the

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1 activity limits and isotope limits of --

2 MR. FULLER: We have one more comment or  
3 question here and then we're going to go to the phone  
4 lines.

5 MR. ANDERSON: Yes, this is Ralph Anderson  
6 with the Nuclear Energy Institute. I just wanted to  
7 make a few comments, although I did not come with  
8 prepared comments because first and foremost we fully  
9 understood that the scope of this meeting was to  
10 discuss impacts on medical and research associated  
11 with low level waste issues. So, I hope that allays  
12 somewhat the concerns raised by a few commentators.

13 Secondly, I would comment that the, I  
14 certainly understand the motivation for some of the  
15 comments that want to make a clear distinction between  
16 commercial nuclear power waste and waste generated by  
17 others.

18 The anti-nuclear agendas of the two  
19 organizations that spoke are well publicized on their  
20 websites, so I understand and appreciate that.

21 The comment I would make, though, is in  
22 making that distinction and to help solve this  
23 particular problem, which as a Health Physicist, I  
24 think is very important.

25 I think they need to be a little more

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1 careful in how they define their issue. Dr. Gould,  
2 for example, referred to a major distinguishing  
3 characteristic of nuclear power plant radioactive  
4 waste was because they contain cesium137 and  
5 strontium90, which he alluded to as more longer-lived  
6 and more hazardous than the types of wastes that you  
7 all are dealing with.

8 For his own information, and he may not be  
9 aware of it, many of the sources that are in questions  
10 with this community, in fact, are strontium90 and  
11 cesium137 sources, used in brachytherapy and cancer  
12 therapy.

13 So, you might want to just be careful  
14 about how you characterize that. You don't want to  
15 inadvertently damage your own community. At any rate,  
16 that concludes my comments.

17 MR. FULLER: Okay, thank you. We have a  
18 couple of folks, through the Webinar, who have  
19 indicated they'd like to speak, as well. The first  
20 one is William Dornsife. Bill, are you on the  
21 conference call?

22 MR. DORNSIFE: Yes, I am.

23 MR. FULLER: Please go ahead.

24 MR. DORNSIFE: Okay, I have two questions  
25 and, well actually three questions and a comment.

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1 First of all, to NRC, the recent change in the  
2 definition of, or fairly recent change in the  
3 definition of byproduct materials to include  
4 accelerator produced and norm discreet sources.

5 Obviously, that is a specifically, for the  
6 most part, a medical issue. But, unfortunately,  
7 agreement states haven't adopted that definition. So,  
8 I guess, the first question is I assume that that is  
9 compatibility A and when that gets adopted, these  
10 sources can be disposed of in properly licensed  
11 facilities, is that correct?

12 MS. BUBAR: Bill, I'm not from the  
13 organization, this is Patty Bubar. We have experts  
14 who are sitting on this floor who would best be able  
15 to answer that question. So we may get them back, or  
16 get them in here to answer.

17 But my understanding is the agreement  
18 states have adopted the regulations. I think there  
19 was a deadline for them to adopt the regulations and I  
20 thought that they all had.

21 But we will get somebody from our  
22 materials and agreement state programs in here to give  
23 a firmer answer on that.

24 MR. DORNSIFE: Well, that's an issue we're  
25 struggling with in Texas, because we haven't received

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1 any indication we can dispose of those materials.

2 MS. BUBAR: Lynne actually has something to  
3 say to you.

4 MS. FAIRABENT: Lynne Fairabent with AAPM.  
5 Bill, whether or not the agreement states have  
6 formally adopted to be compatible under Part 35, with  
7 it, the states always had the responsibility and the  
8 authority for those materials that were generated by  
9 an accelerator or the discreet norm sources.

10 So they have been dealing with them  
11 regardless of the change as a result of the Energy  
12 Policy Act of 2005, and the broadening of the  
13 byproduct material definition under the agreement  
14 programs and NRC's authority.

15 So, I don't personally see that there  
16 should be a change in how the states were dealing with  
17 their own waste. I don't know if Debbie Gilley or  
18 Shaw Seeley are on to address it from CRCPD's or OAS's  
19 position.

20 MR. DORNSIFE: Well, Lynne, I don't agree  
21 with you because, may be from a Part 35 standpoint,  
22 but from the disposal standpoint that isn't  
23 necessarily true.

24 My next question is to those folks who had  
25 a concern, or I guess, you know, said that they're

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1 willing to work with folks to assist in looking at  
2 alternatives for dealing with the medical waste issue,  
3 but not the nuclear power issue.

4 And my question for them, would they  
5 support, for example, decreases in exemption levels  
6 for short-lived Radionuclides and potential disposal  
7 in (inaudible) facilities, after a performance  
8 assessment has been done for those facilities, just  
9 for medical waste.

10 MR. FULLER: Hold on one second.

11 MS. DARRIGO: This is Diane Darrigo. The  
12 way that the regulations are written there's not an  
13 opportunity to make an exemption for one or the other.

14 I mean unless we're going to specifically exclude,  
15 there would need to be a redefinition. This has been  
16 an issue all along.

17 MR. DORNSIFE: Well, the NRC or EPA could  
18 adopt regulations that allow for that. I mean, would  
19 you support that?

20 MS. DARRIGO: I'd have to see what it  
21 meant, but there's, I mean, I'd have to see what  
22 specifically you were talking about and we would  
23 consider it.

24 MR. DORNSIFE: Well, but I mean just the  
25 concept. I'm not talking about specifics.

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1 MS. DARRIGO: A concept of, there are  
2 already exemptions for short-lasting medical isotopes  
3 that can go down the drain.

4 MR. DORNSIFE: Okay, but there's others  
5 that aren't. I mean would you support an increase in  
6 exemption levels for other materials that are short-  
7 lived?

8 MS. DARRIGO: I'd have to see what they  
9 were.

10 MR. DORNSIFE: You sound like NRC, Diane.

11 (Laughter.)

12 MR. FULLER: Okay.

13 MR. DORNSIFE: Okay, I have a comment.

14 MR. FULLER: Go ahead, Bill.

15 MR. DORNSIFE: We've been participating,  
16 along with a number of other folks in the NSSA efforts  
17 to deal with the seal source issue. And one of the  
18 things we've been talking about are options for  
19 storage and disposal.

20 I just wanted to let everybody know that  
21 WCS is ready and willing to store all of the sealed  
22 sources that are out there. We have a license that  
23 allows that currently, and our disposal license, which  
24 we expect to have a facility available in late 2010,  
25 we are allowed to essentially dispose of sealed

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1 sources in accordance with the branch technical  
2 position for concentration averaging.

3 Which means the same criteria that  
4 Barnwell was using before their access was limited.  
5 The only hurdle is importing those materials and, you  
6 know, if you all have a problem out there, we're  
7 having some public meetings, stakeholder meetings with  
8 the compact, the compact commission is having  
9 stakeholder meetings.

10 So, I would suggest you make your needs  
11 and concerns evident to that Texas Compact Commission.

12 We also, in our license, we are authorized to dispose  
13 of biological and other kinds of materials with the  
14 double packaging, you know, that was typically done in  
15 the past.

16 So that is also another option at the WCS  
17 facility. Again, it would need import if it's outside  
18 the compact, the compact states.

19 And my last question is to you, Patty.  
20 Where's our (inaudible)?

21 MS. BUBAR: We'll talk off-line.

22 (Laughter.)

23 MS. BUBAR: I actually, if I could, Mike, I  
24 wanted to go back to your first question and just make  
25 sure I understood, you said from a disposal standpoint

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1 you would have a different opinion than Lynne.

2           Could you just maybe elaborate on that and  
3 then we can move on?

4           MR. DORNSIFE: Yeah, I mean we've been  
5 talking with the state of Texas regarding disposal of  
6 new categories of byproduct material. And, you know,  
7 they're, you know we don't get anything definitive  
8 because, first of all, their regulations don't include  
9 that and, you know, obviously there's some lack of, I  
10 don't know, either understanding or communications of  
11 whether we can, in fact, dispose of those materials in  
12 our licensed facility.

13           MR. FULLER: Okay, thank you for that. I  
14 understand we have Debbie Gilley on the phone, who had  
15 a question or a comment. Debbie, are you there?

16           MS. GILLEY: Yes, Debbie Gilley, I'm with  
17 the CICPD again and I wanted to address some of Mike's  
18 questions and concerns about the off-site recovery  
19 program.

20           NNSA's through DOE has collected over  
21 20,000 of these sources. Some are greater than Class  
22 C, the (inaudible) sources and then the remaining of  
23 those is the Class B and C sources throughout the  
24 United States.

25           There are currently 8,000 sources that are

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1 registered with them, and we are going through the  
2 process of trying to do roundups where there are  
3 disposal options available.

4 Reasons that maybe we haven't gotten to  
5 Oregon yet, even though you have a disposal option,  
6 it's the logistics of getting a central location to  
7 package to maximize our money, to get as many sources  
8 in one container as possible before we send it to  
9 Hanford.

10 The other issue that has come up is with  
11 the current recession, the way we're having to  
12 redirect some of the funding to take care of  
13 facilities that have closed their door due to  
14 bankruptcy.

15 And so we have redirected some of the  
16 scatter funds to assist in some of those activities to  
17 make sure that those sources don't become new sources  
18 and potentially cause problems along the way.

19 In response to Bill Dornsife, I'm trying  
20 to think of anything that would have been our material  
21 that would have necessarily, a lot of that is short-  
22 lived isotopes that can be decayed in storage.

23 So, other than the radium component, which  
24 I believe we have a disposal pathway for radium, I'm  
25 not sure what other Energy Policy Act things, some

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1 activations with some cycle drawn targets, what other  
2 type of material might be needed, what other types of  
3 long-lived material might need a disposal pathway.  
4 That's all.

5 MR. FULLER: Thank you, Debbie. I see  
6 Ralph has his hand up, but before we go to Ralph, we  
7 have a comment or a question from someone on the  
8 Webinar. And I'm going to have Jim read that to us.

9 MR. SHAFFNER: We have a comment in support  
10 of Mike Zittle's response on the scatter program from  
11 Susan Masih, and I apologize if I'm mispronouncing  
12 that name.

13 I don't think we're quite at the top. We  
14 had a sealed source on the list, it took probably five  
15 to seven years to get it picked up. This was, I  
16 believe, due to the funding of the program over the  
17 years, patchy.

18 The way the program administration has  
19 been, had been having to be juggled back and forth in  
20 the administration, I can probably think of a few  
21 other reasons.

22 We were far more fortunate than, Mike,  
23 since we only had one and it didn't cost so much that  
24 we couldn't mortgage my soul to pay for our portion of  
25 the disposal cost.

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1 MR. FULLER: Okay, thanks. Okay, Ralph?

2 MR. ANDERSON: Ralph Anderson with the  
3 Nuclear Energy Institute. I know that in Patty's  
4 overview of the meeting that she referred to the staff  
5 expanding its scope to also look at the impact of  
6 other beneficial uses of radioactive material, I would  
7 just comment that in our discussions that we had had  
8 with industrial radioactive source users, I don't  
9 think that they appreciated at all that that scope  
10 expansion might take place.

11 So, I think that's the reason why you've  
12 had little or no input from industrial source users.  
13 But if it is your intent that you include that on your  
14 scope of consideration, and I suggest to you that  
15 unfortunately you might have to go out separately and  
16 independently to obtain that information. In the  
17 discussions that we've had with NNSA, on the way in  
18 which the federal government might address security  
19 issues associated with the inability to dispose of  
20 higher activity radioactive sources, particularly  
21 Category 1 and Category 2 sources.

22 There are representatives from various  
23 groups talking to the industrial source issue that  
24 seem to characterize it as a fairly extensive issue,  
25 especially over the longer term.

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1           As sources decay below their useful  
2 levels, but would still lack a disposal outlet because  
3 it would still be a Category 1 or a Category 2 source.

4       So, I'd just comment that, first and foremost, there  
5 might be information available through that activity  
6 through NNSA under the threat reduction initiative.

7           I suspect that quite a bit of information  
8 has been gathered in that regard. But, secondly, NRC  
9 might want to consider something that I know has been  
10 done on a spot basis, and Debbie and Shawn might be  
11 able to speak to this.

12           I believe that a few of the agreement  
13 states actually went out and did their own inventories  
14 of that situation. So they may have some specific  
15 information from which you could extrapolate the scale  
16 of that problem. And, Debbie, maybe you can help me  
17 out. I thought Florida was one of the states that  
18 went out and did that.

19           MS. GILLEY: Is it okay if I talk?

20           MR. FULLER: Yeah, go ahead, and then we're  
21 going to get back to Diane. I'm sorry, I apologize.

22           MS. GILLEY: Yeah, there were 2,500 sources  
23 that were collected in Florida from the scatter  
24 program. So we know that there are unwanted field  
25 sources that are out there, if we just had the

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1 disposal option, we could remove those sources from,  
2 essentially, harms way.

3 And I didn't think the focus, necessarily,  
4 of this meeting was unsealed sources, either. I  
5 thought it was more on the capacity to conduct  
6 research. So, I apologize I don't have more details  
7 for you.

8 MR. FULLER: Okay, thank you. And it's  
9 correct, the focus of this meeting is really for  
10 research, medical research and other research. We've  
11 kind of gotten off, just because, I guess, it's sort  
12 of natural.

13 Because we talk about waste and so forth  
14 that people would want to speak to some of the other  
15 challenges. But it is true our focus today, our  
16 purpose today was to stay focused on research and, in  
17 particular, medical research, but not to exclude other  
18 types of research. Diane, you had one other comment?

19 MS. DARRIGO: Another question for Bill.  
20 What is the status of waste control specialist storage  
21 permits, how long and what kind of materials can you  
22 store there?

23 MR. DORNIFE: If there is a disposal  
24 outlet, or we have an agreement to take back, we can  
25 dispose sources indefinitely.

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1 MS. DARRIGO: Store, you mean?

2 MR. DORNSIFE: Pardon?

3 MS. DARRIGO: You said dispose, you mean  
4 store?

5 MR. DORNSIFE: I'm sorry, yes, store.

6 MR. FULLER: Okay, thank you.

7 MS. DARRIGO: And if, what if there's not a  
8 disposal outlet or an agreement?

9 MR. DORNSIFE: One year.

10 MR. FULLER: Okay, I'm going to check back  
11 with Maurice and Jim, and see if we have any other  
12 questions or comments from the Webinar?

13 MR. SHAFFNER: We have a couple of  
14 questions from Mike Zittle. I guess this question is  
15 for Bill Dornsife. Is WCS willing and able to accept  
16 waste generated outside the Texas compact.

17 MR. FULLER: Bill, did you hear that  
18 question?

19 MR. DORNSIFE: Yeah, like I mentioned, the  
20 Texas Compact Commission is authorized to enter into  
21 contracts with individuals, companies, states or  
22 compacts to import waste.

23 And they are scheduled to have a  
24 stakeholder meeting, hopefully later this month on the  
25 development of regulations which will set out a

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1 process for doing that.

2 I know from sealed source standpoint that  
3 the NSSA folks are very much interested and plan to  
4 come to that meeting and, you know, make a pitch  
5 regarding national security that particularly sealed  
6 sources would be allowed to be imported for disposal.

7 MR. FULLER: Okay, thank you.

8 MR. DORNIFE: So, again, you know, if  
9 anybody is interested out there, I mean just keep, the  
10 stakeholder meeting time and date will be published.'

11 And, you know, if you're interested or,  
12 you know, have some particular need, I would suggest  
13 you make it known to that organization.

14 MR. SHAFFNER: Okay, jut two more brief  
15 comments by Mike, one is he wants to thank Debbie  
16 Gilley for her comments regarding OSRP and the scatter  
17 program.

18 And he also reminds us that regarding an  
19 earlier question on tracking Class B and C waste,  
20 (inaudible) has compiled information and it's  
21 available on the (inaudible) website.

22 MR. FULLER: Okay. All right, at this  
23 time, is there anyone else on our conference call that  
24 has a question or a comment?

25 MS. MASIH: I do.

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1 MR. FULLER: Okay, please go ahead, state  
2 your name.

3 MS. MASIH: Okay, this is Susan Masih from  
4 the University of Missouri, Kansas City, again, and  
5 this is to, this comment that when we talk about  
6 sealed sources and research, we talk about lack of  
7 disposal access or how my experience with trying to  
8 get rid of a calibration source that I could not use  
9 any longer, has actually required or placed a  
10 requirement on our authorized users to get their  
11 survey meters calibrated outside.

12 We cannot, the radiation site (inaudible)  
13 could not provide that service, that calibration  
14 service, for our researchers any more, because we had  
15 to deal with a sealed source that we could not find a  
16 way to properly either or financially change over, so  
17 we had to find a way to dispose of it.

18 That is one of the reasons why the scatter  
19 program was important to us, but that's why it takes  
20 so long. It's a (inaudible) supporting research.  
21 Just thought I'd mention that.

22 MR. FULLER: Thank you, very much. Is  
23 there anyone else out on the conference line that  
24 would like to make a comment, or have a question for  
25 any of our previous presenters?

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1 MR. JANETI: Yes, I do, Rich Janeti.

2 MR. FULLER: Okay, Rich, go ahead.

3 MR. JANETI: Question is for Mike, Mike  
4 Zittle.

5 MR. FULLER: I don't think, well, Mike can  
6 hear you but he might not be able to answer your  
7 question right away

8 MR. JANETI: Should I ask the question,  
9 though?

10 MR. FULLER: Yeah, please do. It just  
11 might be a while before we get back to you.

12 MR. JANETI: -- expressed concern about  
13 lack of access to processing facilities, I assume out  
14 of a state processing facilities. And I guess my  
15 question is, why is that? Has the Northwest compactor  
16 pose restriction over exportation of waste for  
17 processing, or what is the issue here?

18 MR. FULLER: Okay, Rich, if you can hang on  
19 we'll make sure, unless Mike are you on the line?

20 (No response.)

21 MR. FULLER: Yeah, I didn't think he was.  
22 So, Rich, hopefully we'll get an answer because I know  
23 he's listening, and then we'll relay that back to you  
24 in just a little while.

25 MR. JANETI: All right.

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1 MR. FULLER: Anyone else on the conference  
2 call line?

3 MR. ZITTLE: Hello.

4 MR. FULLER: Could you identify yourself?

5 MR. ZITTLE: Yeah, this is Mike Zittle  
6 calling back again.

7 MR. FULLER: Okay, Mike, did you hear  
8 Rich's question?

9 MR. ZITTLE: Yes, I did. With regards to  
10 out of compact processing, it's a great question.  
11 I'll give you some specific examples right here.

12 At Oregon State University, we have  
13 certain waste streams that we would like to  
14 incinerate. There are currently two low level  
15 radioactive waste incinerators in the country.

16 There's one in Tennessee, the former  
17 Duratech facility, now Energy Solutions. And there is  
18 one in Richland, the former ATG Pecos facilities, now  
19 (inaudible) Northwest.

20 Currently, we super compact our waste and  
21 it's buried at Richland. We get probably a two to one  
22 reduction volume by super compacting.

23 If we were able to incinerate, we could  
24 get approximately 200 to one reduction volume.  
25 However, the facility at (inaudible) Northwest, is not

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1 an approved processing facility for the Oregon  
2 University system for several reasons.

3 That facility has a history of poor waster  
4 management and a backlog of waste and several  
5 bankruptcy foreclosures. And therefore, the Oregon  
6 University system had decided that it would not be in  
7 our best interest to send waste to that facility for  
8 incineration because of the past problems.

9 We realized that the facility has been  
10 taken over now by a new company, Permafix(phonetic),  
11 and we hope that we may have access to that after an  
12 extensive auditing process and hopeful approval of  
13 this facility for waste processing.

14 So, since this facility is not approve  
15 right now, there's only one other facility in the  
16 United States where we could incinerate our waste.  
17 And that is Energy Solutions Duratech(phonetic) in  
18 Tennessee.

19 However, we are forbidden from sending  
20 waste to this processing facility because of Northwest  
21 compact exclusionary authority over that waste. And  
22 what I mean by that, is that any waste that's  
23 generated in the Northwest, because of the compact  
24 restrictions and the Act, must be buried in a low  
25 level radioactive disposal facility in the compact.

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1           The only one that we have available to us  
2 is the Hanford (inaudible) facility. So, if we send  
3 our waste to Tennessee for incineration, the process  
4 that they have is burn no return or no disposal  
5 volume.

6           Where Energy Solutions would take  
7 possession of our waste, burn it down to ash,  
8 commingled with many other generators and that ash  
9 would be their secondary process waste.

10          They take full possession of it and it  
11 would go to the Clive facility in Utah. However, the  
12 Northwest compact has forbidden us from utilizing this  
13 facility and this no disposal volume practice, because  
14 they want that ash back in the Northwest compact  
15 disposal facility at Hanford.

16          The problem for us is it costs about two  
17 to three times as much to super compact the waste and  
18 send it to Richland in much, much larger volumes than  
19 it does to incinerate that waste and have a very small  
20 volume of ash go to the facility.

21          So, the, as a result of this compact  
22 exclusionary authority and restriction on sending it  
23 out of state or out of compact for processing, the  
24 Energy Solutions facility in Tennessee has put a  
25 moratorium on receiving any waste from the Northwest

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1 or Rocky Mountain compact.

2           They don't even take our waste because the  
3 Northwest compact is requiring Energy Solutions to, if  
4 they're to receive some waste from the Northwest  
5 compact, they have to stop their incinerator  
6 operation, scrub down the incinerator.

7           Get all of the radioactive material that  
8 belongs to other compacts, out of that incinerator.  
9 And then take a small package, a small volume from the  
10 Northwest, put in the incinerator, burn it down to an  
11 extremely small volume, and then clean out the  
12 incinerator again.

13           Send that small package of waste volume,  
14 probably less than one cubic foot, back to the  
15 Northwest compact for disposal at the Richland  
16 facility and then Energy Solutions can resume their  
17 operation of incinerating waste from all the other  
18 compacts.

19           So, obviously, Energy Solutions is not  
20 going to interrupt their operation for a very, very  
21 small volume of waste coming from the Northwest. So  
22 they said we can't take your waste. So, therefore, I  
23 have right now no option to incinerate my waste, which  
24 will significantly reduce the volume and significantly  
25 reduce the cost to the university and the state tax

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1 payers.

2 We hope that, as a result of this  
3 discussion, the Act may be adapted to the changing  
4 framework of low level radioactive waste prophecy.  
5 When the Act was formulated in 1980 and amended in  
6 1985, incinerators weren't even on line yet.

7 The technologies and processes in place to  
8 reduce volumes and minimize radioactive waste, as they  
9 exist today, were not in existence back then. The  
10 processes have changed but the Act hasn't.

11 And the academic community is requesting  
12 that we reevaluate these processes and technologies,  
13 so that we can utilize the best technology today to  
14 reduce our volume, minimize our waste, and save money  
15 to the academic community and taxpayers that support  
16 academia. Thank you.

17 MR. FULLER: Thank you, Mike. At this  
18 point, we've been going now for almost two hours.

19 MR. DORNSEIFE: Hello, I just want to  
20 respond quickly to that last comment.

21 MR. FULLER: Okay, could you state your  
22 name again?

23 MR. DORNSEIFE: Bill Dornsife.

24 MR. FULLER: Okay, Bill.

25 MR. DORNSEIFE: What he's talking about is

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1 waste attribution and the low level waste forum is  
2 actively looking at that issue again. So I would  
3 suggest, you know, that he get his concerns into that  
4 group and, you know, they are, I think, intending to  
5 develop a policy and those kind of concerns need to be  
6 incorporated into that policy that, then all compacts  
7 would hopefully adopt.

8 MR. FULLER: Thank you. The next thing we  
9 have on the agenda, but first we're going to, we have  
10 someone here who is going to speak to some of the  
11 changes as a result of the change in the rule, in  
12 response to Energy Policy Act of 2005, Dennis  
13 Sollenberger is here to speak to that a little bit.

14 And we're going to go to Dennis in just a  
15 second. After that, just for planning purposes, we're  
16 going to take another short break, since we've been  
17 going almost two hours.

18 And then we're going to come back and do  
19 our, sort of our summary and wrap up. So, Dennis.

20 MR. SOLLENBERGER: -- me figure out what  
21 was kind of the question I'm supposed to be  
22 addressing. I think, my understanding is there was a  
23 question about what the states were required to do  
24 with the Energy Policy Act and our authority for  
25 (inaudible). And in that process, NRC went out and

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1 evaluated the states and their regulatory environment.

2 And there was a Governor Certification  
3 that came in and the Commission responded to that,  
4 certifying each of the states, each of the agreement  
5 states desire to continue authority and that authority  
6 was broad and included the regulatory authority for  
7 this new class of material that's being covered under  
8 the Atomic Energy Act.

9 And that was done for all the 35 agreement  
10 states, at the time or 34 at the time. Since then,  
11 Pennsylvania, New Jersey and Virginia became agreement  
12 states and in evaluating those agreements we looked  
13 at, just to make sure they had the authority in their  
14 regulatory and statutory authorities there.

15 So they were included in the evaluations.

16 Since then, NRC promulgated its rule for (inaudible)  
17 and since they already had adequate coverage, to  
18 protect public health and safety, there's still a few  
19 compatibility things that needed to be addressed.

20 The states have the three year period from  
21 the NRC's publication of its final rule. To go  
22 through their regulations and adopt that. The states  
23 are currently doing that. The three year period is  
24 not up yet, on that.

25 NRC's final rule was published, I don't

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1 have the date, I was going to ask Bruce here to see if  
2 he knew, but I think it was like November of 2007, I  
3 think. So we're about two years into the process.

4 PARTICIPANT: Okay, I just, you know, Texas  
5 has not yet adopted the compatible regulation, that  
6 was my issue.

7 MR. SOLLENBERGER: That's correct and they  
8 still have time to do so and still meet the three year  
9 time frame.

10 PARTICIPANT: And is it, I guess then it  
11 was NRC's position, you know, that those waste then  
12 are eligible for disposal in a Part 61 licensed  
13 facility, right?

14 MR. SOLLENBERGER: Correct. They're  
15 eligible to, but are not required to. There was  
16 provision in the Act that allowed the materials to be  
17 disposed of in the same manner as they were prior to  
18 the enactment of the Act.

19 PARTICIPANT: Okay.

20 MR. FULLER: Thank you, Dennis. Okay, like  
21 I said, we're going to take another ten minute break,  
22 so about two minutes after 12:00, oh, let's just make  
23 it, oh, what the heck, 12:00, okay. I'm seeing a lot  
24 of people saying 12:00.

25 So if we can take a quick break.

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1 (Whereupon, the proceedings went off the record at  
2 11:50 a.m. and came back on at  
3 12:00 p.m.)

4 MR. FULLER: Okay, we're getting ready to  
5 get started again. If everyone could sort of get to  
6 their seats and get settled in. As I stated before  
7 the break, the next step is sort of a summary and wrap  
8 up.

9 But, before we get to that, I want to make  
10 sure, if there are any other questions or comments out  
11 there that folks would like to share, that they go  
12 ahead and do so now.

13 Anybody on the conference call line that  
14 has another question or comment?

15 (No response.)

16 MR. FULLER: Jim and Maurice, do we have  
17 anything coming in over the Webinar?

18 MR. SHAFFNER: No.

19 MR. FULLER: Okay. And here on the, here  
20 in the room, any other last minute comments are  
21 questions that anybody has, before we start to sort of  
22 summarize what we think we heard today?

23 (No response.)

24 MR. FULLER: Okay. Patty?

25 MS. BUBAR: Thank you. As we were kind of

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1 going through the format for this meeting, Mike and I,  
2 well all of us were kind of debating what would be the  
3 best way to summarize and wrap up.

4 And I said, you know, I want to do the  
5 summary and wrap up because I want to make sure that I  
6 heard correctly, everything.

7 But that's always a challenge as you're  
8 trying to listen and then put the information through  
9 your brain at the same time. So, this is just what I  
10 think we heard from around the table and out there in  
11 the hinterlands, but we're going to open it up to see  
12 did I miss anything, as we go through this quick  
13 summary here.

14 What I think we heard was that there are  
15 impacts associated with the lack of disposal access  
16 for Class B and C waste. There are impacts to the  
17 academic and the medical research community.

18 There is some quantitative evidence about  
19 that, that was presented. Those impacts seem to be in  
20 increased cost. They seem to be in storage capacity  
21 or storage capacity having to be made available, which  
22 sometimes impacts actual research activities because  
23 those buildings would be the same buildings that those  
24 research activities will be taking place in.

25 There are some impacts associated with the

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1 elimination of some radionuclides being available  
2 because of disposal issues.

3 So, that will be Point Number 1, I think  
4 we did hear that there are some impacts and we got  
5 some good information that I think, heretofore, we  
6 might not have had, right at our fingertips.

7 I think we did hear some good  
8 conversation, that I think represents a follow up  
9 action for us that there are some sources of  
10 information out there that we might also be able to  
11 access that might not have been presented today, that  
12 would give us some more quantitative information about  
13 the quantities of waste being disposed.

14 And may actually give us, through the  
15 MIMS (phonetic), the DOE MIMS system and maybe others  
16 that people mentioned, CALRAD (phonetic). So we  
17 definitely will take that as an action to go back and  
18 make sure that we look at those sources of information  
19 that might not have been presented so clearly today.

20 I think we heard that there are some  
21 programs out there that are representing some  
22 mitigative ways or mitigative activities to take care  
23 of some of the storage issues through the CRCPD  
24 program, the scatter program and the off-site source  
25 recovery program.

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1           Some people had opinions on the efficiency  
2 or the ability of those programs to really work well,  
3 but I think that's a third point that we have that  
4 there are some activities out there that can help  
5 mitigate some of these.

6           That was not our charge, necessarily, in  
7 gathering this information, but, and I guess that  
8 would get to my next point. We were directed by the  
9 Commission to gather information on medical and  
10 academic impacts, so that really was, when we report  
11 back to the Commission, that's what we've got to  
12 report back on.

13           That was their direction to us. We did,  
14 as a staff, decide, when we put out the Federal  
15 Register Notice, to expand it to be other radioactive  
16 material. We'll have to decide whether we actually  
17 report that information back or how we report that  
18 information back to the Commission.

19           Because, I think as someone noted, that  
20 might not have been totally clear to everybody and I  
21 don't think we got some real quantitative information  
22 about other radioactive material.

23           But we did include that in the Federal  
24 Register Notice to see if there was any information  
25 out there that might be able to be presented to us.

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1 So we'll have to look at what we finally get and  
2 decide how we present that up to the Commissioners.

3 I would just make one observation that  
4 what we did not hear and maybe it's because we didn't  
5 ask for it, but what we did not hear was any real  
6 information about successes that are out there.

7 Things that have been happening, where the  
8 medical community or the academic community has been  
9 able to figure out how to deal with some of these  
10 issues.

11 Either because of going to different  
12 materials that could be used or because of finding  
13 consolidated storage, whatever. I mean I'm kind of  
14 making some of these things up.

15 But we didn't hear any information about  
16 successes, and so if there is any information out  
17 there and you would like us to understand that,  
18 certainly there's enough time to be able to present  
19 that in between now and October 20th.

20 Those were the highlights that I had  
21 written up after listening, so, I guess maybe I'll  
22 actually ask the NRC Staff first, if you heard  
23 anything that I didn't capture in my summary.

24 And then, Mike, if we could turn it over  
25 to other folks to see if I missed anything. Jim,

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1 would you say I missed anything or Maurice?

2 MR. SHAFFNER: I would like to say one  
3 thing, though. We do, because I was focused somewhat  
4 on the technology today, and I did, you know, hear  
5 some really good specific information.

6 And I look forward to, you know,  
7 communicating with as many of you as I possible can,  
8 in order to unpack that a little bit.

9 MS. BUBAR: Yeah, I think that's the beauty  
10 of how we've set this up, because, you know, we can  
11 go back and listen and then Jim, if he has any further  
12 questions can follow up.

13 But, as I think Jim may have mentioned  
14 earlier, please feel free to, you know, always pick up  
15 the phone and talk to Jim or sending him any  
16 information.

17 He will be the main author of what we're  
18 sending forward, so we want to be able to continue to  
19 gather information even in an informal way.

20 MR. SHAFFNER: I believe Debbie Gilley has  
21 a question. I don't know whether she's on the phone.  
22 Okay.

23 MS. DARRIGO: I'm a little out of line on  
24 the agenda, I should have said this before the  
25 conclusions. But there's, it's Diane Darrigo.

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1           There's an assumption in the whole  
2 discussion that we've had that there are no impacts on  
3 the environment or public health or individual health,  
4 from the generation, the storage, the treatment,  
5 disposal of radioactive waste.

6           And to mention incineration as a solution  
7 to the waste problem, it may be one of the things  
8 that's legally allowed for biological waste, but it  
9 doesn't destroy any radionuclides.

10           And, unless they're all captured, they're  
11 being disbursed. And so I think that the NRC's  
12 questions here are looking at the impacts from the  
13 perspectives of the generators, and, in this case,  
14 these are generators that are not as controversial as  
15 the nuclear power generators.

16           However, the options for disposal and  
17 treatment and management, I think are still ones that  
18 deserve some review. And it's something that the NRC  
19 doesn't really do that well.

20           Anyway, there's always an assumption that  
21 there's no significant effect from a disposal site.  
22 And I guess that's the case from incinerators.  
23 Although, to my knowledge, those are all agreement  
24 state licensed, not NRC.

25           So, I wanted to put in there that the

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1 questions you need to also look at, what is the  
2 impacts of burning radioactive materials and some of  
3 the other impacts.

4 MR. FULLER: Thank you. Do we have  
5 anything from the Webinar, Jim?

6 MR. SHAFFNER: I had a hand raised, that's  
7 what I was reacting to, but the individual would have  
8 to be on the phone.

9 MR. FULLER: Okay, I understand Debbie has  
10 something she'd like to add to the summary and the  
11 wrap up. Are you there, Debbie Gilley?

12 MS. GILLEY: Debbie, again, CRCPD. I just  
13 want to bring it to your attention that the lack of  
14 disposal options may far exceed research and my  
15 actually go into the realm of patient care.

16 And I think it's real important that we  
17 look at some of the medical procedures and the fact  
18 that they do have waste, produce waste in the process  
19 with not, the access to healthcare to be detrimental  
20 because of its lack of waste disposal options.

21 Particularly, with some of the more  
22 technologically advanced medical applications. And I  
23 hope that the report will actually indicate that that  
24 should be somewhat a concern of ours.

25 Currently we don't see that being an

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1 issue, but at some point in time, medical facilities  
2 will run out of storage location spaces for this  
3 mixed, both biological, radiological and chemical  
4 waste component that probably needs to be addressed or  
5 at least for future conversations.

6 MR. FULLER: Okay, thank you. Anybody else  
7 on the Webinar, Jim or Maurice? Anything that we  
8 missed in our summary?

9 (No response.)

10 MR. FULLER: Okay. And here in the room,  
11 okay, Ralph.

12 MR. ANDERSON: This is Ralph Anderson,  
13 Nuclear Energy Institute. Patty, you may have meant  
14 for it to be captured in the notion of other,  
15 elimination of some radionuclides, but considering the  
16 other part of the NRC's mission, what you might, I  
17 think you heard some information here that you might  
18 be able to either elaborate on or at least capture an  
19 item to be considered in the future.

20 Strategic implications. Specifically, two  
21 examples that I heard from Len Smith. He talked about  
22 outsourcing of some of the source material and  
23 manufacturing because, for instance, it's greater than  
24 Class C, is one driver to that.

25 And now B and C becoming another one. So

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1 that's shipping capabilities off shore. Not to  
2 mention the economic issues associated with that.

3 The other one is, and I think it's really  
4 a front and center one, was raised by John Ernst and  
5 that's the issue of the molly99 domestic production.

6 What John didn't allude to, but I know it  
7 was in his notes, because I'm sitting next to him, is  
8 part of that consideration on domestic production also  
9 has to do with the transition from high end rich  
10 uranium as a source of that material.

11 Which, by the way, is used ubiquitously in  
12 medical practice in the United States to low enriched  
13 uranium targets. So it certainly has a dimension also  
14 associated with the other part of NRC's mission.

15 And I think capturing that might attract  
16 the attention of some folks that might not otherwise  
17 be very interested in this issue.

18 MR. FULLER: Thank you. Anyone else want  
19 to help us with something we might have missed in our  
20 wrap up.

21 MR. SMITH: Just reflecting on some of the  
22 comments that have been made here. I have a couple,  
23 sorry, it's Len Smith of CORAR. I'm just reflecting  
24 on some of the comments that were made. I do have a  
25 couple of additional comments.

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1           We were talking about the type of waste  
2 that's generated by the medical community, compared  
3 with power industry. And I have to tell that one of  
4 our wastes in CORAR company is now strontium90.

5           It's a major waste that's in interim  
6 storage now. I heard, also, the medical community  
7 only produces .1 percent of the waste. I believe that  
8 number is from DOE, it's a correct number. And it's  
9 .1 percent of the waste that goes to a disposal site.

10           But, remember, that's only a small  
11 fraction of the waste we're talking about here.  
12 That's just what comes from the hospitals. It's not  
13 what comes from the research, broader research  
14 communities.

15           You have all the biotech companies, you  
16 have all the academic organizations and you have the  
17 government facilities. And that's ten times as much  
18 waste.

19           And industry that supplies those  
20 biomedical products, has ten times more waste than  
21 that. So we're not talking about .1 percent, we're  
22 talking about ten percent of the waste.

23           MR. FULLER: Thank you. Okay, I don't hear  
24 anybody speaking up on the phone. I don't see any  
25 hands raised in the room. We don't have any folks, it

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1 looks like, on the Webinar, so maybe we're about  
2 done. Patty, do you have any closing remarks?

3 MS. BUBAR: Well, first of all I just want  
4 to thank everybody for their participation. We really  
5 have had kind of a high energy level preparing for  
6 this, knowing that this was going to be the first  
7 forum that we had, where we could get this kind of  
8 community together at the same time and hear this.

9 We heard some of it at the April 17th  
10 briefing with the Commission, but this was the first  
11 time that we could have people who think about this  
12 all the time, sitting around the table, so to speak,  
13 together.

14 So, this has really been a good  
15 opportunity for us to be able to listen to this. It's  
16 very thought-provoking. I think we've got our work  
17 cut out for us.

18 We appreciate your patience with the  
19 technology. As Mike and others had said at the  
20 beginning, we tried our best to make sure that we gave  
21 everybody as easy access as they could, knowing that  
22 we had never really done a Webinar.

23 At least, when I say we it's just us  
24 sitting around the table, other folks at NRC have. So  
25 we were a little nervous about using it and we were

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1 actually ready to default to not using it if it really  
2 didn't work. So we appreciate your patience while we  
3 tried to get it to work.

4 I think, for us, it was really a good way  
5 to do this because we were able to hear a lot of  
6 different voices and people didn't have to travel,  
7 spend their time and energy traveling here.

8 And so we appreciate the ability to be  
9 able to do that and hope that we can do more of this  
10 in the future.

11 When you say schedule a public meeting,  
12 when you think about this being a public meeting  
13 versus something where you've got to rent a facility  
14 and bring people in and it just brings up different  
15 images.

16 So, I think this is a good way to go into  
17 the future. To be able to talk to the public more  
18 frequently, because this was much easier to do. But  
19 we appreciate your patience as we were trying to go  
20 through this technology.

21 I'd like to thank the staff, the NRC  
22 staff, who really put a lot of time and energy into  
23 trying to make it work. So, Maurice, Jim, Mike,  
24 Theresa, thank you very much for your time and energy  
25 in trying to get this working.

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1           And, oh, yes, we've got Todd in the back.  
2           He's always the guy in the back, always behind the  
3           scenes, but, actually if you see the photo gallery  
4           when you walk through the NRC corridors, Todd is  
5           responsible for a lot of those photos.

6           He's one of our Photographers that, he was  
7           creating the tape, as we went through this. And so  
8           that's going to be very useful to us. So, thank you,  
9           Todd for your help in doing this.

10           I think that's it for any remarks unless,  
11           some last minute things?

12           MR. SHAFFNER: This is Jim Shaffner and  
13           when I was, in the beginning of the meeting I realize  
14           I gave my e-mail address rather hurriedly. Because  
15           some of you on the Webinar, you know there's some  
16           challenges in the way we communicated back and forth  
17           and we may have missed some of your questions along  
18           the way.

19           So, if you have some things to add to this  
20           whole process, we'd appreciate it. Please e-mail them  
21           to me at james.shaffner@nrc.gov. Or you can give me a  
22           call at 301-415-5496. Thank you.

23           MS. BUBAR: I just wanted to add one more  
24           recognition that was Greg (inaudible). It's funny you  
25           walk in and I was just going to say another guy behind

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1 the scenes is Greg (inaudible).

2 He's the Branch Chief that all these folks  
3 report up to. So, Greg, thank you for all of your  
4 hard work in making this what I think was a success.

5 So, if there are no further comments, I  
6 think we will adjourn this meeting. Thank you,  
7 everybody.

8 (Whereupon, the proceedings in the above-entitled  
9 matter were concluded.)

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