

# Official Transcript of Proceedings

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157th Meeting

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON NUCLEAR WASTE

(ACNW)

+ + + + +

157th MEETING

+ + + + +

WEDNESDAY,

FEBRUARY 23, 2005

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ROCKVILLE, MARYLAND

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The committee met at the Nuclear  
Regulatory Commission, Two White Flint North,  
Room T2B3, 11545 Rockville Pike, at 10:30 a.m.,  
Michael T. Ryan, Chairman, presiding.

COMMITTEE MEMBERS:

MICHAEL T. RYAN, Chairman

ALLEN G. CROFF, Vice Chairman

JAMES H. CLARKE, Member

WILLIAM J. HINZE, Member

RUTH F. WEINER, Member

1 ACRS/ACNW STAFF PRESENT:

2 JOHN T. LARKINS, Executive Director, ACRS/ACNW

3 MICHAEL SCOTT, ACRS/ACNW Technical Support

4 Branch Chief

5 SHARON STEELE, ACNW Team Leader

6 THERON H. BROWN

7 NEIL M. COLEMAN

8 JOHN H. FLACK

9 LATIF HAMDAN

10 MICHELLE KELTON

11 MICHAEL LEE

12 RICHARD K. MAJOR

13

14 EXPERT PANEL:

15 BRUCE MARSH, Johns Hopkins University

16 Department of Geology

17

18 NRC STAFF:

19 JAMES E. KENNEDY

20 THOMAS J. NICHOLSON, Office of Nuclear

21 Regulatory Research

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I-N-D-E-X

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

(10:31 a.m.)

CHAIRMAN RYAN: The meeting will come to order. This is the first day of the 157th meeting of the Advisory Committee on Nuclear Waste.

My name is Michael Ryan, Chairman of the ACNW. The other members of the committee present are Allen Croff, Vice Chair; Ruth Weiner is participating via telephone; Jim Clarke and William Hinze are present.

Today the committee will discuss changes to the 2005 Action Plan resulting from SECY 04-0077. We'll discuss the possible future activities related to the definition of a regulatory time of compliance for a proposed high-level waste repository at Yucca Mountain. And I understand we have a spot for comments from the State of Nevada that we'll be hearing from during that period.

We'll be briefed by the ACNW Chairman on views concerning low-level radioactive waste as related to our action plan and the current state of affairs in that topical area. We'll finalize our viewgraphs for the forthcoming meeting with the NRC Commissioners currently scheduled for Wednesday, March 16th.

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1           We've had some discussion at a previous  
2 meeting, some exchanges, some raw numbers. I thought  
3 it best that if we hear how people want to have the  
4 slides shape up, and do that interactively, that would  
5 probably -- we're at the point where we need to just  
6 bring closure to what we want to say, what we want,  
7 and so forth.

8           Dr. John Larkins is the designated federal  
9 official for today's initial session.

10           This meeting is being conducted in  
11 accordance with the provisions of the Federal Advisory  
12 Committee Act. I mention we have received one request  
13 from a member of the public for time to make an oral  
14 statement during today's session. Mr. Martin Malsch  
15 of the law firm of Egan and Associates would like to  
16 make a statement on behalf of the State of Nevada when  
17 the committee takes up the matter of Yucca Mountain  
18 during time of compliance.

19           If anyone else wishes to address the  
20 committee, please make your wishes known to one of the  
21 committee staff.

22           It is requested that speakers use one of  
23 the microphones, identify themselves, and speak with  
24 sufficient clarity and volume so that they can be  
25 readily heard. And also -- it is also requested that

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1 if you have cell phones or pagers kindly turn them off  
2 or place them in a mute mode. Thank you very much.

3 Before starting the first session, I would  
4 like to cover some brief items of interest. We can  
5 now officially welcome Drs. Jim Clarke and Bill Hinze  
6 to the ACNW as bona fide members.

7 Welcome, gentlemen. Welcome back, Bill.  
8 This is Bill's second term. And, Jim, welcome, and we  
9 look forward to your able participation on the areas  
10 of interest to the committee.

11 Mr. Howard J. Larson, known to many of you  
12 in the room, and certainly to the NRC staff, retired  
13 from the ACNW on January 31st, and from the Commission  
14 as a whole, after more than 27 years of federal  
15 service, and we wish him well. The committee is going  
16 to have dinner with he and his wife Thursday evening,  
17 and we'll pass along good wishes and good thoughts for  
18 everybody on the staff.

19 Michael Scott -- Mike, do you want to  
20 stand up and let everybody say hello and see you? Has  
21 been selected as the ACRS/ACNW Technical Support  
22 Branch Chief, replacing Dr. Sher Bahadur. Mr. Scott  
23 has a B.S. Degree in Physics from the Naval Academy;  
24 an M.S. in Nuclear Engineering from Georgia Tech. He  
25 joined the NRC in 2001. He comes to us from NRR, and

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1 brings with him almost 30 years of experience in the  
2 nuclear reactor, MOX, and Yucca Mountain repository  
3 programs.

4 Welcome. It's great to have you with us,  
5 and we look forward to working with you in the months  
6 and years ahead.

7 Ms. Sharon Steele has been selected as the  
8 ACNW team leader, replacing Howard Larson. Ms. Steele  
9 has both a B.S. and M.S. in Fire Protection  
10 Engineering from the University of Maryland. She  
11 joined the NRC in 2000, and comes to us from the Fuel  
12 Cycle Branch in NMSS.

13 I might add that Sharon helped us on a  
14 short-term assignment as our facilitator for  
15 developing our action plan and our strategic  
16 assessment last year. And so the action plan you'll  
17 see shortly was in her capable hands, and she brought  
18 that to paper very well.

19 Thanks for a great start. And anything  
20 that's wrong in the action plan, we'll be back in  
21 touch. But thanks for being with us. We appreciate  
22 your hard work and look forward to having you with us.

23 President George W. Bush made the  
24 following two recent appointments for NRC  
25 Commissioners, Drs. Gregory Jaczko and Peter B. Lyons,

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1 and we'll be interacting with those new Commissioners  
2 I'm sure in the months ahead.

3 More information on their backgrounds,  
4 education, experience, can be found on the NRC  
5 website.

6 And without further ado, I'll turn our  
7 attention to the agenda, and somewhere in here I have  
8 it. Oh, there it is, right in front of me.

9 We'll turn our attention to the ACNW 2005  
10 Action Plan. John Flack is going to lead us through  
11 that discussion and the background on what we need to  
12 go through.

13 MR. FLACK: Okay. We did receive --

14 CHAIRMAN RYAN: By the way, all members  
15 should have a copy that's labeled "draft" across the  
16 front.

17 MR. FLACK: Right. And there was -- it's  
18 also part of your notebooks and CD that I distributed  
19 earlier. There's three pieces there that you'll see.  
20 The first one is the transmittal letter that we're  
21 planning to send to the Commission with the revised  
22 action plan. After that you'll see the revised action  
23 plan, and then behind that is the redline strikeout of  
24 the changes to the action plan.

25 I also wanted to note that Allen has a

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1 paragraph that he would like us to consider, and we'll  
2 put that up on the screen in a little bit. And the  
3 committee can go through that and decide whether it  
4 wants to incorporate that as well into the action plan  
5 at this time.

6 Basically, we received a SECY back from  
7 the Commission that -- to approve the action plan, but  
8 had some recommendations which -- which are spelled  
9 out better in the transmittal letter, and I'll just  
10 quickly go through them. And this is how the plan was  
11 revised.

12 The first one indicated that they would  
13 like to see the criteria for screening the priority  
14 topics changed a bit. They would like to see enhanced  
15 openness as part of that criteria rather than public  
16 confidence, and that was a very easy switch that we  
17 did. We just removed a few words and put in enhanced  
18 openness to replace public confidence, which is more  
19 consistent with the new strategic goals.

20 The second thing was to roll up the work  
21 that we were thinking about doing under tier 1 as  
22 supporting the Part 63 rulemaking activity. And since  
23 that is related to Yucca Mountain, there was a cut and  
24 paste done there, where we just simply rolled up the  
25 -- that tier 1 item into the Yucca Mountain repository

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1 tier 1 item, and that left us with, then, one less  
2 tier 1 item at that point in time.

3 So there's nothing new there. It's pretty  
4 much just transformed up and rolled up into that item.

5 The third thing they indicated was they  
6 felt that where it was more important than we had it,  
7 we originally had that as a tier 2 item, and that was  
8 moved up into tier 1. And so we're back to six tier  
9 1 items, and that pretty much stayed the same, just --  
10 we just moved it from one priority to another.

11 The fourth thing was that the Low-Level  
12 Waste Working Group, the Commission thought we had  
13 that as a higher priority than it should have, and so  
14 that was actually removed from -- was it removed, or  
15 did we just move it down? I'm starting to lose my  
16 mind here. Getting too old. Yes, we just kept it as  
17 a tier 2 item, but we just moved it down in priority,  
18 right?

19 Okay. And the working group is what we  
20 had changed. The working group was being planned at  
21 one point, and then we moved that to the end as a  
22 tentative working group. Still possible, but left it  
23 as tentative.

24 And then, the fifth thing was that they  
25 felt transportation of radioactive materials should be

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1 increased in priority, and we did. We moved that from  
2 -- it was I believe fifth on the list to now second on  
3 the list, but still remained under tier 2 behind the  
4 waste research activity that the committee is planning  
5 to do -- shortly, actually, in fact.

6 Okay. So those are the changes, basically  
7 a summary of the changes that were made, and I imagine  
8 the committee had looked at these before. So, but if  
9 they have any comments to be shared with that at this  
10 point in time.

11 CHAIRMAN RYAN: Comments? Bill? Bill,  
12 should we save your paragraph for the --

13 MEMBER HINZE: No.

14 VICE CHAIRMAN CROFF: Want to save it 'til  
15 later? I don't --

16 MEMBER HINZE: No. Let's just go at this  
17 point.

18 CHAIRMAN RYAN: Ruth, any comments on the  
19 draft -- the revised action plan?

20 MEMBER WEINER: No, thanks. I think we've  
21 been over it all.

22 CHAIRMAN RYAN: Okay. Well, Allen has a  
23 suggestion he wants to --

24 MR. FLACK: Okay. I guess we could move  
25 to that piece now.

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1           Just as an intro, the committee -- the  
2 Commission, in their SRM, indicated that the committee  
3 should improve clarity in how the screening criteria  
4 are applied and consistency with the agency's  
5 strategic plan. But it indicated in the future, so  
6 Allen was very proactive in taking that on right now.  
7 So I guess that's where he came up with that  
8 paragraph.

9           Allen?

10           VICE CHAIRMAN CROFF: I think the best way  
11 to do this --

12           MS. KELTON: This machine is doing  
13 something.

14           (Laughter.)

15           VICE CHAIRMAN CROFF: It's a good  
16 opportunity -- well, let me just -- on the cover  
17 letter letting the Commission know how we've  
18 accommodated their comments, we might want to put a  
19 sentence in here that we plan on, you know, issuing  
20 this document. We're going to go ahead and publish  
21 and issue the document in the near term. So that will  
22 cut off any potential other iterations.

23           We could also add a sentence to say we  
24 will better inform you on the need to make low-level  
25 waste a higher priority.

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1 (Laughter.)

2 CHAIRMAN RYAN: Any idea when we'll be  
3 back around or --

4 MS. KELTON: It's doing -- modifying user  
5 profiles maybe.

6 CHAIRMAN RYAN: Oh, my goodness.

7 MS. KELTON: We haven't gone through this  
8 on our computer, so we don't know what this means.

9 CHAIRMAN RYAN: I guess just as a general  
10 question, if these are --

11 DR. LARKINS: Well, why don't we read  
12 them, and then see if there's comments.

13 CHAIRMAN RYAN: Yes. We can't until we  
14 get --

15 DR. LARKINS: Oh. He doesn't have them  
16 written out?

17 CHAIRMAN RYAN: Well, he's got them on his  
18 computer, but they're not on the screen.

19 VICE CHAIRMAN CROFF: Well, she's got the  
20 file over here. She just -- her computer isn't  
21 accessible right now. Big Brother has taken it over  
22 or something.

23 MS. KELTON: You can download it to a disk  
24 and use this one here.

25 CHAIRMAN RYAN: Can you just plug your

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1 computer in up there? Can we do that? Can you have  
2 him sit up there and plug his computer in, Theron?

3 MR. BROWN: He can sit right there and do  
4 it.

5 CHAIRMAN RYAN: Fabulous.

6 MS. KELTON: He can switch it to him.

7 CHAIRMAN RYAN: This is where one of those  
8 little memory sticks would come in handy, right?

9 MEMBER HINZE: I've got one here if you  
10 want it.

11 CHAIRMAN RYAN: Well, he is already  
12 changing it, so -- well, here you go.

13 MR. FLACK: High tech is wonderful.

14 CHAIRMAN RYAN: Ninety-nine percent of the  
15 time.

16 VICE CHAIRMAN CROFF: Well, we're complete  
17 anyhow.

18 CHAIRMAN RYAN: Why don't you just take  
19 your stick and put it in that computer with the file  
20 on it, and see if that will work.

21 VICE CHAIRMAN CROFF: Sounds like an  
22 easier thing to do.

23 CHAIRMAN RYAN: Okay.

24 VICE CHAIRMAN CROFF: How about I just go  
25 up there and --

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1 CHAIRMAN RYAN: Yes. Take the cord with  
2 you. Just pass it up to Neil.

3 MEMBER HINZE: I like an optimist.

4 (Pause.)

5 CHAIRMAN RYAN: It's on the screen there.  
6 It's not in -- there.

7 MR. MARSH: What do you think about  
8 reinitializing the projector?

9 CHAIRMAN RYAN: Bingo. There we go.  
10 Do you have some suggested changes or --

11 VICE CHAIRMAN CROFF: Yes. It's not  
12 showing the redline strikeouts. It's showing them  
13 already included, which doesn't highlight them. Let  
14 me see if I can figure out how to show them.

15 CHAIRMAN RYAN: Review it, I think.

16 VICE CHAIRMAN CROFF: This is responding  
17 to the criteria thing. Put some words in here at the  
18 start, and there's a short paragraph down here at the  
19 end. Do you want to read the first part first? Give  
20 me and second, and then -- I should say my stuff is in  
21 green. What John Flack did originally is in red -- is  
22 the redline if you will.

23 CHAIRMAN RYAN: It's a bit of detail. I  
24 don't know that it adds or detracts.

25 VICE CHAIRMAN CROFF: Well, all I was

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1 trying to do is sort of say, you know, we had the  
2 criteria already stated. We're trying to get to, how  
3 do we use the criteria, what process did we go  
4 through, which is, I think, what the comment was.

5 CHAIRMAN RYAN: Could you scroll down so  
6 we can see the next --

7 VICE CHAIRMAN CROFF: Yes. And for now  
8 forget the thing in braces. That's related to what's  
9 even further down. So --

10 CHAIRMAN RYAN: If it doesn't add a lot of  
11 depth and read and detail, my recommendation is not to  
12 change it. I mean, it's -- to me they are small,  
13 minor points. I don't see that we really need to go  
14 into all that detail.

15 Anybody else?

16 MEMBER HINZE: Has the committee, chatting  
17 about ACRS and the interaction between ACRS and ACNW,  
18 has anyone considered ACRS's interchange with the ACNW  
19 in setting priorities? I mean, I gather from the  
20 conversation that this is something that --

21 DR. LARKINS: It's in our operating plan,  
22 but it's -- we don't carry it over here to the action  
23 plan.

24 MEMBER HINZE: Okay.

25 DR. LARKINS: But it is discussed in

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1 there. We have joint -- what we call formally a joint  
2 subcommittee between the ACRS and ACNW on specific  
3 topics.

4 MEMBER HINZE: But it just seems to me  
5 that people would look at this more than perhaps some  
6 of the other verbiage and --

7 DR. LARKINS: Good point.

8 MEMBER HINZE: It's something that I think  
9 would enhance both -- both committees.

10 DR. LARKINS: What would you suggest?

11 MEMBER HINZE: Well, I was going to  
12 suggest that we look to you to put that in.

13 (Laughter.)

14 CHAIRMAN RYAN: You know, let's take a  
15 breath here a minute. This is a very top level, you  
16 know, action plan. These are management details --  
17 you know, how they got there and all that. I just  
18 think we dilute the focus of what we're trying to  
19 communicate by adding all of these kind of smaller  
20 points.

21 VICE CHAIRMAN CROFF: All I'm saying is  
22 I'm trying to react to what the Commissioners said.  
23 And if we don't do it this year, we're going to have  
24 to have something like this I think next year. So I  
25 said, "Why not?"

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1 CHAIRMAN RYAN: John, what's your thought?

2 MR. FLACK: Yes. Well, as Allen said, it  
3 says, "In the future, the committee should improve  
4 clarity in how it is screening." So what we can do is  
5 take this as an action item for the next update on the  
6 action plan, and specifically address it within that  
7 context, because I don't know if we can resolve that  
8 whole issue right now here and everybody agree with --

9 CHAIRMAN RYAN: That's my problem. I  
10 don't think that it does that -- resolve that.

11 MR. FLACK: We may have to go around a  
12 couple of times with it before all the committee  
13 members agree that this is what we want to say as far  
14 as the clarity of applying the criteria. You know, it  
15 may take some time. I --

16 VICE CHAIRMAN CROFF: You know, this was  
17 my attempt to describe what we did already, what we're  
18 going to do in the future. I mean, this is how we got  
19 the hearing that --

20 CHAIRMAN RYAN: Let's make a decision and  
21 move on in these two suggestions that Allen has. Do  
22 you want to add them or not? Jim?

23 MEMBER CLARKE: Yes, sure.

24 DR. LARKINS: I mean, the last sentence,  
25 you know, I think in terms of completing this could be

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1 left -- could be put in there either way. Yes. It's  
2 factual.

3 CHAIRMAN RYAN: Yes, I have no problem  
4 leaving either -- either one in, but I just don't know  
5 that it adds a whole bunch of additional insight in  
6 how we got there. But that's okay.

7 MEMBER HINZE: I'd put them in. Let's  
8 leave them in. We're going to gain -- we won't lose.

9 MR. FLACK: Well, should we address it in  
10 the cover transmittal memo, then?

11 CHAIRMAN RYAN: Well, you've already  
12 addressed it. You've said we -- you know, we've given  
13 some more detail, and that's part of the detail that  
14 adds to your redline.

15 All right. Next?

16 VICE CHAIRMAN CROFF: My next suggestion  
17 -- you see that John Flack struck out something here.  
18 I thought it read better with that left back in.

19 MR. FLACK: Okay. That was struck I  
20 believe because it was redundant. You have to read --

21 VICE CHAIRMAN CROFF: Yes.

22 MR. FLACK: -- the discussion on Mod 63.

23 VICE CHAIRMAN CROFF: I thought we deleted  
24 that.

25 MR. FLACK: We rolled it up into the --

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1 where are we now? On -- yes, you're on number 1,  
2 right?

3 VICE CHAIRMAN CROFF: Yes.

4 MR. FLACK: So you're back --

5 CHAIRMAN RYAN: It's in the material.

6 John had it --

7 VICE CHAIRMAN CROFF: You're saying

8 it's --

9 MR. FLACK: That's all in there now.

10 CHAIRMAN RYAN: John had it right.

11 VICE CHAIRMAN CROFF: Somehow at the time

12 it didn't make sense to me, but --

13 MR. FLACK: That's why you took it out,

14 because it was redundant.

15 CHAIRMAN RYAN: Let's move on.

16 VICE CHAIRMAN CROFF: Okay. And

17 everything in braces has to come out. That's my

18 common objective.

19 Oh. The question I asked before -- is the

20 order of these first-tier topics meaningful? In other

21 words, are we saying number 1 is more important than

22 number 2, is more important than number 3? And if so,

23 is that the order we intend? I don't think we really

24 discussed order within tiers, if I remember. And I

25 don't know, you know, is 6 as important as 1?

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1 CHAIRMAN RYAN: That's how many they had  
2 on the -- you know, I think we have tier 1, which are  
3 our focus topics, and tier 2, which are of less focus.  
4 I think within tier 1 there is lots of, you know,  
5 potential for things to become more important or less  
6 important as the year progresses. And, again, I just  
7 don't see the value in trying to -- trying to come up  
8 with some rank order in this action plan. This is a  
9 plan. This isn't something cast in stone.

10 VICE CHAIRMAN CROFF: We did order the --

11 CHAIRMAN RYAN: Fine. But we don't need  
12 to address the order.

13 VICE CHAIRMAN CROFF: But that would be my  
14 suggestion. If there is no -- when you number things  
15 1 through 6, it leaves people with an impression.

16 CHAIRMAN RYAN: Some people.

17 VICE CHAIRMAN CROFF: Some people. Maybe  
18 we just need a sentence saying, you know, in no -- no  
19 apparent order, or whatever it is.

20 CHAIRMAN RYAN: Well, if you go back and  
21 read tier 1 and tier 2 discussion, it's high priority  
22 and low priority. I think -- you know, I mean, I just  
23 don't see where that added.

24 MR. HAMDAN: But isn't -- what we have  
25 here, item 5, transportation, we are seeing

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1 transportation -- it has been given a higher priority  
2 among second --

3 CHAIRMAN RYAN: Fine.

4 MR. HAMDAN: So we are implying that there  
5 is a ranking within each tier. In this new letter.

6 MR. FLACK: I would say that was the  
7 reason why I got -- it did get moved up. However,  
8 this is implied ranking. It's not that we explicitly  
9 decide what -- the ranking and how they should be  
10 ranked, I mean, in that regards. But there is I guess  
11 an implication that the first one you read on a list  
12 is always --

13 CHAIRMAN RYAN: Let's think out loud a  
14 minute. We moved it up on the list. That doesn't  
15 mean anything. What it means is we moved it up in our  
16 minds and we'll pay more attention to it, thanks to  
17 their direction. That's the issue. Where it sits on  
18 a list is immaterial.

19 The fact is, as an Advisory Committee, we  
20 have put it higher up on our agenda up here, not on  
21 the paper.

22 DR. LARKINS: I agree. I think I'd rather  
23 leave with some that --

24 CHAIRMAN RYAN: Just leave it be. What's  
25 your next one?

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1                   VICE CHAIRMAN CROFF: Okay. The next one,  
2 this is a trivial change, but it --

3                   CHAIRMAN RYAN: And let's don't make any.

4                   VICE CHAIRMAN CROFF: -- early FY05 for  
5 the submittal, and that's no longer the case  
6 obviously. So I put in there what I think DOE has  
7 been saying, which is now early FY06.

8                   CHAIRMAN RYAN: Okay.

9                   VICE CHAIRMAN CROFF: We did that one. I  
10 think another one I had was down in the working  
11 groups. We are -- just remember that at the last  
12 meeting, right at the end of it, Latif and I met with  
13 some of NMSS staff on a potential working group, and  
14 I made some modifications here to try to reflect my  
15 sense of the outcomes of that -- that meeting.

16                   Want to try to read this without all the  
17 highlights?

18                   CHAIRMAN RYAN: Why don't you just read  
19 through it in final form out loud. We'll get a better  
20 sense.

21                   VICE CHAIRMAN CROFF: Okay. The working  
22 group will focus on risk-informing the NRC's technical  
23 approach to meeting its responsibilities concerning  
24 whether various DOE waste streams are WIR.  
25 Congressional action expanded NRC's role in this area

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1 to require that DOE consult with NRC on all WIR  
2 determinations and the disposal of WIR waste.

3 The committee believes this working group  
4 will support the development of an effective and  
5 consistent NRC approach to reviewing DOE WIR  
6 determinations for soundness of technical assumptions,  
7 analysis and conclusions, and implementation approach  
8 to the NRC's monitoring responsibilities.

9 CHAIRMAN RYAN: I would just make one  
10 change. Unless you're going to explain it, I would  
11 get rid of "Congressional action expanded." I would  
12 just say, "NRC's role has expanded in this area."

13 VICE CHAIRMAN CROFF: Okay.

14 CHAIRMAN RYAN: How about that?

15 VICE CHAIRMAN CROFF: Do you want me to  
16 try to put it in here or --

17 MR. FLACK: We need to copy whatever you  
18 have there onto the --

19 CHAIRMAN RYAN: Maybe you could just make  
20 a note, John, and change that. Just change it so it  
21 starts, "NRC's role has expanded in this area to  
22 require that."

23 VICE CHAIRMAN CROFF: NRC's role has  
24 expanded, and DOE --

25 CHAIRMAN RYAN: Right.

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1 MR. FLACK: NRC's role has expanded. DOE  
2 must now consult --

3 CHAIRMAN RYAN: Right. Excellent.  
4 Anything else?

5 VICE CHAIRMAN CROFF: I guess I asked the  
6 question here, you know, should we leave the low-level  
7 waste item in? I think we've decided yes.

8 CHAIRMAN RYAN: Yes.

9 VICE CHAIRMAN CROFF: Especially in light  
10 of our discussion this morning.

11 CHAIRMAN RYAN: Right.

12 VICE CHAIRMAN CROFF: That's it.

13 CHAIRMAN RYAN: Okay. Great.

14 MEMBER HINZE: So move.

15 CHAIRMAN RYAN: Allen's changes as noted.  
16 Mike?

17 MR. LEE: This morning there was  
18 discussion of possibly interacting with NMSS before we  
19 meet the working group. Do you want to --

20 CHAIRMAN RYAN: No. This is a plan. We  
21 don't need to put the details in every plan. I mean,  
22 it's substantive on its own.

23 All right. Any problem with Allen's  
24 changes as discussed and amended during the  
25 discussion? John will make it so.

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1 MR. FLACK: Okay.

2 CHAIRMAN RYAN: And we've got that  
3 additional item in the letter that John mentioned.

4 MR. FLACK: Two things -- are they  
5 planning to issue the document, and NRC's role in --

6 CHAIRMAN RYAN: Anything else? Say one,  
7 say all?

8 Sharon?

9 MS. STEELE: I just want to concur on your  
10 initial suggestion that this would just be -- you can  
11 go ahead and make these fixes, but in the future to  
12 address the Commission's concern, I think I want to  
13 see a link with the strategic plan, the agency's  
14 strategic plan.

15 CHAIRMAN RYAN: Fine. Absolutely.

16 MS. STEELE: So for the future --

17 CHAIRMAN RYAN: You know, as we --

18 MS. STEELE: Right.

19 CHAIRMAN RYAN: -- approach next year's  
20 action planning, we can certainly have that as a basis  
21 document, and then discuss how we're going to more  
22 formally discuss how we're going to move from one to  
23 the other. So absolutely. I think that's on your to  
24 do list anyway.

25 MS. STEELE: Oh.

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1 (Laughter.)

2 CHAIRMAN RYAN: Thank you very much.

3 MS. STEELE: Okay.

4 CHAIRMAN RYAN: Okay. Thanks, Allen.

5 Those were good -- good corrections.

6 Anything else, John?

7 MR. FLACK: That's it.

8 CHAIRMAN RYAN: Okay. Let's see. We're  
9 just a tiny bit ahead of schedule, just about 10  
10 minutes, so I don't think we'll upset anybody's apple  
11 cart too much and we'll have some discussion led by  
12 Professor Hinze on the committee.

13 We'll continue to discuss its time of  
14 compliance for a proposed high-level waste repository  
15 and determine the need for timing for a working group  
16 meeting on this subject. I'm sure everybody on the  
17 committee will recall, and others in the audience,  
18 that Bill provided us with a review from his personal  
19 participation in the earlier time of compliance  
20 letters that the committee wrote several years ago and  
21 provided us with a briefing package and an excellent  
22 presentation in that score.

23 So, Bill?

24 MEMBER HINZE: Okay. Fine. I believe  
25 there are some slides to help us guide our way through

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1 this. Are they available?

2 MS. KELTON: Who gave them to me?

3 MEMBER HINZE: Mike. We have four slides.  
4 Time Period of Compliance -- of Compliance for  
5 Geological Repository Performance Assessments: ACNW  
6 Advice-Giving Options.

7 MR. LEE: You sent it to me  
8 electronically?

9 MEMBER HINZE: You bet.

10 MR. LEE: Okay. Let me -- I'm drawing a  
11 blank. Let me go check.

12 MEMBER HINZE: Can we wait five minutes?  
13 Because --

14 CHAIRMAN RYAN: Please. Let's take a  
15 five-minute pause, and, Mike, make it so. Thank you,  
16 sir.

17 (Whereupon, the proceedings in the  
18 foregoing matter went off the record at  
19 11:05 a.m. and went back on the record at  
20 11:10 a.m.)

21 CHAIRMAN RYAN: All right. We can come  
22 back to order, please, and let's go back on the  
23 record.

24 Thank you. Thank you for your patience,  
25 one and all.

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1 Professor Hinze --

2 MEMBER HINZE: Okay. Let --

3 CHAIRMAN RYAN: -- we're in your capable  
4 hands.

5 MEMBER HINZE: All right. Here we go.  
6 We're going to be looking at the time period of  
7 compliance and trying to look at where the ACNW should  
8 be going. If I could have the next one, please.

9 What can be expected to happen next? I  
10 should point out that Mike Lee and I have been in  
11 communication over the last couple of months with  
12 various principals from the EPA, the DOE, and EPRI  
13 regarding this time of compliance. I have talked to  
14 Ray Clark of EPA, and, as we heard this morning, they  
15 do intend -- they have been told that they will have  
16 a time of compliance up for public comment by this  
17 summer and -- or the end of spring. That's the --  
18 that's kind of the words that he used.

19 The EPA then will issue an advanced notice  
20 of rulemaking for the remand and solicit public  
21 comments on the proposal.

22 I asked Ray if -- if he would be willing  
23 to participate in a working group if we held one. He  
24 said, "Well, we'd like to comment here." And that's  
25 pretty well the way that they reacted to the working

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1 group that we had at time of compliance back in  
2 1995/'96, something like that. Ray made the first  
3 presentation, but basically he said, "We just have a  
4 lot of questions. Prepare to listen." And that was  
5 about the sum and substance of what he had to say.

6 The DOE -- we have talked to Abe Van Luik,  
7 who is, as I understand it -- and, Carol, you can  
8 correct me if I'm wrong -- but as I understand it is  
9 the international representative of DOE to the time of  
10 compliance. And the NEA is, as I understand it,  
11 holding another meeting in France in April to discuss  
12 this issue.

13 At the last meeting we showed you the  
14 cover page of an excellent report of the NEA on this,  
15 and now they're going back and looking at this  
16 further. At the time I talked to Abe and shared the  
17 slides that we looked at last meeting, he seemed to  
18 think that he might be able to come to the committee  
19 and to make a presentation on the activities or the  
20 results of the meeting of NEA. But perhaps that's no  
21 longer a valid --

22 MS. HANLON: I probably need to clarify  
23 that. I've spoken with Joe about that particular  
24 issue, and Joe feels -- we feel that it's very  
25 difficult to separate the role of Department of Energy

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1 versus the role of the international agency, and that  
2 it's very difficult to put Abe in that position. So  
3 it would be very difficult for Abe to act in that  
4 position.

5 It may be possible to have another speaker  
6 for the international agency, but it --

7 CHAIRMAN RYAN: Thanks, Carol.

8 MS. HANLON: Sorry. This is Carol Hanlon  
9 from Department of Energy. We've discussed the  
10 possibility of Dr. Van Luik participating in such a  
11 capacity, and we feel that it's very difficult for Dr.  
12 Van Luik to participate in both capacities. If he  
13 were to speak on behalf of the international agency,  
14 it's very difficult for it not to appear that he is  
15 also participating on behalf of the Department of  
16 Energy.

17 So the discussion previously from my -- my  
18 boss, Dr. Joe Ziegler, is that Abe would not be able  
19 to speak on behalf of that particular -- and we'll see  
20 if we can get someone else from the NEA to speak for  
21 you, but Abe would not be able to perform that.

22 MEMBER HINZE: Well, thank you very much,  
23 Carol. Abe did suggest that we try to encourage the  
24 Chairman of the TOC working group in NEA to attend.  
25 Abe gave him very high kudos in terms of any

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1 presentation that he can make. So that's an  
2 alternative, and, in fact, it's a very advantageous  
3 alternative.

4 Mike is his name. He's a Belgian -- I've  
5 got his name in my file. Deprader? Thank you.

6 The NRC will, as I understand it, be  
7 amending 10 CFR Part 60 to conform with Part 197 once  
8 the rulemaking is in effect. The scope of this  
9 rulemaking is unknown, and it's not clear at all  
10 whether we are going to be supported by NRC in terms  
11 of a working group, by the staff participating in the  
12 working group.

13 EPRI has been very interested in this  
14 subject, and John Kessler has been very active in  
15 trying to find a path by which we might get better  
16 information to support a rulemaking in time of  
17 compliance.

18 Perhaps there are some in the audience  
19 that have more up-to-date information than I do. I  
20 haven't been in communication with him the last couple  
21 of weeks, but, as I understand it, they are in the  
22 throws of preparing a white paper. Some of it is  
23 done; some is not done.

24 CHAIRMAN RYAN: "They" being EPRI.

25 MEMBER HINZE: EPRI. EPRI is in the

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1 process of producing a white paper, and they -- they  
2 may have an internal meeting and invite some outside  
3 people to be involved to provide some additional  
4 information. But that is not, to the best of my  
5 knowledge, determined.

6 So the EPRI activities, other than the  
7 white paper, remain a question mark.

8 Mike, would you help me --

9 MR. LEE: The only thing I would --

10 MEMBER HINZE: -- help me here?

11 MR. LEE: Just a friendly amendment. John  
12 Kessler from EPRI said they are probably going to go  
13 to press in the next month or two with their report,  
14 their white paper. So that's -- that information is  
15 probably about two weeks old.

16 CHAIRMAN RYAN: Would he be willing to  
17 come and talk to us contemporaneous with that report  
18 coming out?

19 MR. LEE: Yes. Yes, he indicated a  
20 willingness and an interest to do so.

21 CHAIRMAN RYAN: Okay.

22 MEMBER HINZE: Could we go two slides,  
23 please? Skip the next slide.

24 This is not a comprehensive list. It is  
25 simply an attempt by Mike Lee and I to put together

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1 some general issues to consider during rulemaking, and  
2 these are issues that might be of concern -- of  
3 interest to the committee in developing a working  
4 group, or whatever action it intends to take.

5           Scope and nature of the revised  
6 regulations -- they establish the time of compliance.  
7 The impact of the time of compliance on other elements  
8 of the standards and regulations are an important  
9 aspect of that, in terms of dose, in terms of critical  
10 group, in terms of where it's located, in terms of the  
11  $10^{-8}$  exclusion. These are all things that might be  
12 impacted by the time of compliance.

13           We have the problem of the specification  
14 or the dose limit from the 15 rem for 10,000 years to  
15 --

16           CHAIRMAN RYAN: Millirem.

17           MEMBER HINZE: Millirem. Thank you. To  
18 15 millirem for 10,000 years, while in the critical  
19 group, and this whole matter of the -- of the  
20 occurrence and the treatment of multiple dose peaks.

21           There are also problems with the  
22 implementation of the revised regulations. How does  
23 this impact upon the FEPs, the features, events, and  
24 processes, and the screening, the evaluation of the  
25 temporal uncertainties, the stability/integrity of

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1 long-term timeframe performance assessments?

2           How many of these -- if actions that we're  
3 dealing with are non-linear, and are really  
4 incorporated properly into a performance assessment.  
5 And then we have the whole problem of development and  
6 the validation, and that's a critical problem -- the  
7 validation -- beyond the 10,000 years.

8           As I understand it, that is one of the  
9 reasons why we have the problem today is that it was  
10 felt that we couldn't -- that the NRC, in a regulatory  
11 sense, or the EPA, from the standards standpoint,  
12 could not validate beyond 10,000 years because of the  
13 excessive uncertainties.

14           Possible changes in the KTI decisions --  
15 none of us would like to see that. I'm sure that's  
16 something that would have to be looked at.

17           Understanding what the results mean --  
18 meaning, of course, is important.

19           And the last one here is confidence-  
20 building. This I think is a rather important element  
21 of it. If we start changing these things, I think we  
22 -- it's very important that we bring the community and  
23 the world and our country into understanding that we  
24 are still protecting the safety of the population and  
25 the environment.

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1           And if we start -- once we start changing  
2 these, there is going to have to be an effort made.  
3 In my view, there is going to have to be an effort  
4 made -- made in this confidence-building. And, of  
5 course, the question is: how do you do this? And  
6 that's something that we could be exploring.

7           I'm sure that any one of you have your pet  
8 items here that you would like to add to this, and --  
9 because there are many more. But this -- this fitted  
10 on the screen in a reasonable sense.

11           If we could go to the slide we just  
12 skipped, please.

13           Okay. What should the ACNW do? This  
14 doesn't have the answer. It just has some  
15 alternatives. One of them is to do nothing. The past  
16 advice of the ACNW is a matter of record for the EPA  
17 and the NRC to consider. We can respond to the draft  
18 rulemaking, once it comes about, during the public  
19 comment process, just like any other group might do.

20           An alternative would be to move a little  
21 faster than that, and to write a letter in the  
22 relatively near future summarizing past committee  
23 activities on this area and suggestions on issues  
24 involved in establishing the scope of new regulations  
25 and their implementation. And this might take into

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1 consideration the -- what should be considered in  
2 defining a time of compliance, and what are the  
3 regulatory principles.

4 These are, incidentally, titles of  
5 sections in previous letters of this committee. And  
6 so I'm not saying that all of the bullets are there,  
7 because times have changed. We're smarter now, for  
8 one thing -- I hope -- than we were 10 years ago, but  
9 this would be a starting point.

10 We have been discussing for -- at least  
11 since the last meeting, the possibility of holding a  
12 working group to identify critical issues and --  
13 critical issues and to clarify them. And there's two  
14 aspects to this.

15 One of them is from the scientific aspect  
16 of it and looking at such thing as future climates,  
17 the uncertainties, the non-linear aspects of the  
18 modeling, and then there is what I call technical but  
19 which could probably be called implementation in terms  
20 of the PA codes and the model validation.

21 I think our point here is that the PA  
22 codes are not the problem. It's really that we -- not  
23 just putting in a longer time, but -- but making them  
24 valid in an extended period of time.

25 And then, finally, we could do a

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1 combination of the above. But presumably, if we held  
2 a working group, we would be reporting to the  
3 Commission on the results of that.

4 And with that --

5 CHAIRMAN RYAN: Thank you, Bill. That's  
6 a great summary.

7 I think in the interest of making sure  
8 that a request for comment comes next, and maybe we  
9 can hear that and then have a general discussion,  
10 unless there are any immediate pressing questions for  
11 Professor Hinze.

12 Marty, could I invite you to make your  
13 comments now? And that way we'll have plenty of time,  
14 and so forth. Just go ahead and jump up to that  
15 microphone. That'll probably be more comfortable for  
16 you.

17 MR. MALSCH: Up here?

18 CHAIRMAN RYAN: Yes, that would be great.

19 Marty, just for the record, would you tell  
20 us who you are, and so forth? And I also want to note  
21 that in our information package we have the letter  
22 signed by Bob Ledeaux that I think is dated February  
23 3rd, if I'm not mistaken, addressing this question of  
24 time of compliance.

25 MR. MALSCH: Sure, thank you. My name is

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1 Marty Malsch. I'm with the law firm of Egan,  
2 Fitzpatrick, Malsch & Cynkar. We do lots of work in  
3 the nuclear field, but in particular of interest to  
4 this committee we represent the State of Nevada on  
5 Yucca Mountain matters.

6 I'm happy to make a presentation here  
7 today on behalf of the State on the time of compliance  
8 issue. I actually summoned together all my word  
9 processing skills the other day and actually put  
10 together something in writing. My skills, I should  
11 say, are rather meager. And I do have a few copies,  
12 which I can hand out after my presentation.

13 Let me begin by saying that it appears  
14 that NRC, DOE, and EPA have been discussing with each  
15 other how to respond to the Court of Appeals' decision  
16 vacating the NRC's and EPA's 10,000-year compliance  
17 period.

18 But rather than being open about it, the  
19 agencies have apparently drawn a curtain of secrecy  
20 around their deliberations, even to the point of  
21 apparently being unwilling, at least now, to brief the  
22 committee on what their current thinking is. Nevada  
23 has made requests to EPA to establish a public docket  
24 and to meet with interested stakeholders on this  
25 subject, but so far these requests have gone

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1       unanswered.

2                       However, to get some kind of public  
3 dialogue started, Nevada prepared some preliminary  
4 ideas about how the EPA rule might be changed to  
5 comply with the court's mandate and send copies around  
6 to various interested persons. And I believe, as the  
7 Chairman indicated, you all have copies.

8                       I think that our ideas are pretty  
9 straightforward and easily implemented in a rulemaking  
10 context. In essence, the compliance period includes  
11 the time of peak dose, and we offer this suggestion as  
12 a suitable and very simple response to the Court of  
13 Appeals mandate.

14                      The Court of Appeals mandate requires that  
15 the compliance period be based upon and consistent  
16 with the specific recommendation of the National  
17 Academy of Sciences that the compliance period extends  
18 to the time of peak dose, which comes we think after  
19 waste package failure.

20                      The peak could come early if pessimistic  
21 assumptions about waste package corrosion are correct,  
22 or the peak could come later if DOE's more optimistic  
23 estimates about waste package corrosion are correct.

24                      But the court was very clear that the  
25 standard had to include the peak dose within the

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1 period of geologic stability, and the court was also  
2 very clear that agency policy considerations are not  
3 allowed to prevail over the Academy's recommendation.  
4 Our proposal follows the Academy's recommendation in  
5 this respect.

6 The Atomic Energy Act also applied here,  
7 since the NRC will use the EPA standard to make its  
8 licensing findings. The Atomic Energy Act requires  
9 that a Yucca Mountain licensing standard prevent any  
10 reasonable risk to the public health and safety.

11 This unreasonable risk concept entails a  
12 judgment about acceptable risks to individuals, and  
13 does not allow consideration of such things as ease or  
14 difficulty of licensing of Yucca Mountain, the future  
15 of the nuclear industry, or the kinds of cost-benefit  
16 analyses that one commonly sees in NEPA and NRC  
17 backfit analyses.

18 The Nevada proposal complies with the  
19 Atomic Energy Act by continuing to apply the EPA dose  
20 standard during the entire compliance period. That  
21 dose standard reflects EPA's regulatory judgment about  
22 acceptable risk to individuals now and in the future.

23 Another applicable law is the  
24 Administrative Procedure Act, or APA. The APA  
25 requires agencies to follow correct rulemaking

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1 procedures, decide formal licensing cases based upon  
2 a preponderance of the evidence, and either follow  
3 their previous policies or provide an adequate  
4 explanation in the record as to why their previous  
5 policies should be changed.

6 Our proposal contemplates a full public  
7 rulemaking and makes only those adjustments to the EPA  
8 rule that are necessary to comply with the court's  
9 mandate.

10 The legal framework I've described  
11 eliminates some of the suggestions that have been  
12 floated or proposed in the past vis-a-vis the  
13 compliance period. For example, stopping the  
14 performance assessment at the point where it might be  
15 calculated, the risks from Yucca Mountain are  
16 comparable to those from a natural body of uranium ore  
17 -- doesn't work because most fundamentally the Atomic  
18 Energy Act would require a judgment that the doses to  
19 individuals from a natural uranium ore body are  
20 acceptable, which brings us right back to the EPA  
21 judgment that an acceptable level of risk is 15  
22 millirem.

23 So you don't make much progress with this  
24 concept. Moreover, this idea would have the safety of  
25 Yucca Mountain depend upon completely arbitrary

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1 judgments about how rich a hypothetical uranium ore  
2 body might be.

3 I believe that faulty notions about the  
4 risks from a natural uranium ore body formed the basis  
5 for the 10,000-year standard in EPA's first effort at  
6 developing a geologic repository rule -- the old 40  
7 CFR Part 191. And this was several decades ago.

8 It's interesting that when the rule was  
9 challenged in court in the 1980s, EPA mentioned hardly  
10 anything at all about a natural ore body, and instead,  
11 defended the 10,000-year period primarily on the  
12 ground that unpredictable geologic changes after  
13 10,000 years made compliance assessments impossible  
14 for any site.

15 Once the idea of a 10,000-year compliance  
16 period took hold several decades ago, the agencies  
17 just couldn't let it go, even after the Academy found  
18 it had no scientific basis for Yucca Mountain.

19 Then there is the idea that we could have  
20 one dose standard for 10,000 years and another more  
21 lenient one for some period thereafter. But there's  
22 nothing in the Atomic Energy Act that would allow us  
23 to discriminate between one generation and another,  
24 and this idea also appears to depart from the  
25 principle that we should not impose a risk on future

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1 generations that is greater than the one we are  
2 considering -- we consider to be acceptable to us  
3 today.

4 We could also try to change the rules so  
5 that as our assessments proceed further into the  
6 future and encounter more uncertainty, we find more --  
7 we tolerate and allow more uncertainty in finding  
8 unreasonable risk under the Atomic Energy Act.

9 However, under the old rule, compliance  
10 during the 10,000-year period was based upon the mean  
11 of the distribution of projected probability weighted  
12 doses, and this doesn't leave a whole lot of room to  
13 work with. How much uncertainty after 10,000 years  
14 can we tolerate before we are forced to conclude that  
15 compliance is not established?

16 For example, how could we say that  
17 compliance with a dose standard is demonstrated by a  
18 preponderance of the evidence, if the mean of the  
19 distribution and the strong majority of the  
20 realizations all show a violation at some point during  
21 the compliance period?

22 Then, there is the ever-present temptation  
23 to base the rule on what some government official  
24 thinks can be established for Yucca Mountain based  
25 upon the available information. This is doubly wrong.

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1 First, a licensing standard based upon what can be  
2 achieved, rather than what is safe, violates the  
3 Atomic Energy Act. Even the most dreadful repository  
4 -- it might be imagined it could be licensed under  
5 this kind of standard.

6 Second, to prejudge as a licensing case.  
7 The NRC licensing review and hearing is where the  
8 detailed review of DOE's performance assessment should  
9 be conducted. If we base the rule on the kind of  
10 summary technical review that is typical in  
11 rulemaking, we will not only unfairly prejudge the  
12 licensing case, we will run the grave risk of making  
13 a serious technical mistake about what DOE is able to  
14 prove.

15 Finally, let me express my -- Nevada's  
16 hope that this committee will be allowed to contribute  
17 its independent expertise on the resolution of this  
18 matter of compliance period. I have the sense that  
19 the committee was never completely comfortable with  
20 the concept of an absolute cutoff of the licensing  
21 standard at 10,000 years, yet this is precisely what  
22 the old rule did.

23 To be sure, there is a requirement that  
24 the assessment be carried out to the time of peak dose  
25 for NEPA purposes, but NRC plans to adopt the DOE's

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1 environmental impact statement without any independent  
2 review. So while the peak dose calculation was there  
3 for safety reviewers to examine, NRC, in fact,  
4 carefully structured the rule so that the safety  
5 reviewers couldn't actually do anything with the  
6 information.

7 In closing, then, let me express my  
8 appreciation for giving -- being given the opportunity  
9 to present my views here today. And let me express  
10 the view, on behalf of the State of Nevada, that logic  
11 and sound science will prevail here.

12 Thank you.

13 CHAIRMAN RYAN: Thank you, Mr. Malsch. We  
14 appreciate your comments.

15 Any questions or comments for Mr. Malsch?  
16 Bill?

17 MEMBER HINZE: Well, Mr. Malsch, I  
18 understand that the Boston court, in 1987 -- and  
19 realizing that's before the 1992 Energy Policy Act,  
20 but they stated, if I understand correctly, that the  
21 EPA was allowed to set the time of compliance. Could  
22 you give us any further background on that 1987 ruling  
23 and how that came about? Give us some history? I'm  
24 sure that as a lawyer you've looked into that.

25 MR. MALSCH: It was one of the issues that

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1 was raised in the challenge before the U.S. Court of  
2 Appeals for the First Circuit. I think this was in  
3 the early 1980s. There was a number of challenges.  
4 Parts of the rule were upheld; parts were not.

5 The 10,000-year compliance period -- then,  
6 I guess part 1, I mean -- was upheld in the face of  
7 several kinds of challenges. It was upheld on a  
8 number of grounds. Among other things, they looked at  
9 the rule as a whole and concluded that if you met what  
10 was then the release standard in the rule it was  
11 probably likely that there wouldn't be any significant  
12 harm after 10,000 years.

13 They also deferred to the EPA's judgment  
14 at the time that you couldn't make any realistic  
15 predictions at all after 10,000 years. And there may  
16 have been some other factors that also were used by  
17 the court to uphold the 10,000-year period then.

18 Interestingly, that court decision played  
19 essentially no role whatsoever in the decision of the  
20 D.C. Circuit this last summer, because the legal  
21 framework had been changed, you know, substantially by  
22 the Energy Policy Act of 1992. So we are no longer  
23 talking about independent judgments by EPA or NRC,  
24 but, rather, the recommendations of the National  
25 Academy.

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1                   MEMBER HINZE: Thanks much. I think that  
2 clarifies it for me.

3                   CHAIRMAN RYAN: Any other comments?  
4 Questions?

5                   MEMBER WEINER: Mike, I have a question.

6                   CHAIRMAN RYAN: Yes, Ruth.

7                   MEMBER WEINER: I read very carefully the  
8 letter, and I was very impressed by it. My question,  
9 Marty, is why -- what is the difference between  
10 "consistent with" and "absolutely required by"? And  
11 if there isn't any difference, why aren't the same  
12 words used.

13                   MR. MALSCH: Well, the statute said that  
14 the rule had to be based upon and consistent with the  
15 recommendations of the National Academy of Sciences.  
16 It actually held not specifically -- well, it held  
17 that the EPA proposal was not based upon or consistent  
18 with, because, in essence, it actually had  
19 specifically rejected the National Academy's  
20 recommendation.

21                   I think we would have to say that the  
22 terms "based upon" and "consistent with" are a little  
23 bit ambiguous, but they certainly do not mean that  
24 you're allowed to reject the Academy's recommendation.

25                   MEMBER WEINER: But your paper uses the

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1 word "absolutely required by." And I'm just -- it's  
2 confusing to me, you know, the -- that I -- I  
3 understand "consistent with," I understand "based  
4 upon," and I understand your contention. But the  
5 language I find confusing.

6 MR. MALSCH: Oh, I see. You're talking  
7 about the language in the little paper that's --

8 MEMBER WEINER: Yes.

9 MR. MALSCH: Okay. Okay. That's because  
10 if you look at -- in our view, if you look at the EPA  
11 rulemaking and all the justifications they tried to  
12 offer for the 10,000-year period, and then compare  
13 that against the Academy's recommendation, I don't see  
14 as though there's much leeway but to do and to follow  
15 exactly what the Academy recommended, which is to  
16 extend the compliance period to the time of peak dose.

17 All of the policy justifications that were  
18 offered by EPA to get around that were rejected by the  
19 Court of Appeals. So we -- we couldn't see what the  
20 basis would be for there to be any leeway. Even  
21 though, in theory, there might be some, we couldn't  
22 imagine what the basis could possibly be at this point  
23 in time, without departing from the Academy's  
24 recommendation.

25 MEMBER WEINER: I see. Thank you. The

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1 other question I have is that if your -- in the paper  
2 that you added on to your letter, you mentioned a risk  
3 of  $10^{-8}$  in 100 million. And I'm just curious as to  
4 the genesis of that.

5 MR. MALSCH: Well, I think that's what the  
6 Academy mentioned as a number that would be associated  
7 with a feature, processes, and event, that could be  
8 safety disregarded from the performance assessment  
9 because of its pure low probability.

10 It also I think is related to the one  
11 chance in 10,000 of something occurring in 10,000  
12 years, which is this current screening value for the  
13 10,000-year performance period. So we just put those  
14 numbers together and came up with  $10^{-8}$ .

15 MEMBER WEINER: I see. Thank you.

16 CHAIRMAN RYAN: Any other questions or  
17 comments?

18 MR. LEE: Yes. Marty, a few minutes ago  
19 you made reference to the peak dose in the EIS. My  
20 recollection of the Nuclear Waste Policy Act is  
21 Congress directed NRC to adopt the EIS, to the extent  
22 practical, to the extent there's a licensing decision,  
23 but Congress also relies on the NEPA process to  
24 establish the adequacy of the EIS, which is the  
25 development of a draft and public comment thereon, and

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1 the like.

2           Could you explain what you think the NRC  
3 should have done in the review of that, or could you  
4 elaborate on that point that you referenced?

5           MR. MALSCH: Well, the -- yes, the Nuclear  
6 Waste Policy Act says that the NRC shall adopt the  
7 DOE's environmental impact statement to the maximum  
8 extent practical. NRC has a rule which fleshes that  
9 out in some detail. And while we may have some  
10 difficulty with that rule, at least it's currently  
11 still on the books and was on the books at the time  
12 Part 63 was adopted.

13           And that rule said that the NRC, including  
14 the licensing boards and the Commission itself, in  
15 deciding on the licensing case after the hearing, that  
16 the NRC would in fact adopt the DOE EIS unless: a)  
17 there was significant new evidence that became  
18 available after the DOE statement or supplement to the  
19 statement, or b) the actual proposal for action, the  
20 proposed repository had changed in some significant  
21 way.

22           Moreover, the NRC rule makes it clear that  
23 this is a rolling requirement in the sense that, in  
24 deciding whether to adopt the DOE statement, you're  
25 looking at the statement and any supplements that

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1 might be issued. So there was the possibility,  
2 therefore, that if the staff spotted some new piece of  
3 evidence, they would simply send it over to EPA, they  
4 would adopt -- prepare a new supplement and NRC would  
5 adopt -- and NRC would simply adopt that.

6 The important thing is that, absent some  
7 new evidence or some change in the proposal, the peak  
8 dose would have simply stayed there, and NRC would  
9 have not been able to change it, and it wouldn't have  
10 been a part at all of the safety review.

11 In fact, in the original notice of  
12 rulemaking in Part 63, the NRC even went so far as to  
13 say that you couldn't challenge the peak dose in the  
14 hearing at all. Period. That the peak dose estimated  
15 by DOE was fixed for all purposes of the licensing  
16 proceeding.

17 They have since retreated from that, but  
18 that, again, was part of the framework when Part 63  
19 was originally adopted.

20 My point here is that is a dramatically  
21 different approach than what one normally encounters  
22 in an NRC staff safety review, where whatever the  
23 applicant says is obviously open to completely  
24 independent review. I think the NRC actually  
25 contemplated that the DOE peak dose calculation in the

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1 EIS would simply be adopted, and that would be the end  
2 of it.

3 MR. LEE: I mean, I'm not trying to defend  
4 the staff, but didn't -- isn't this the process that  
5 Congress envisioned by putting those words in the  
6 Nuclear Waste Police Act, that NRC was to adopt the  
7 EIS?

8 MR. MALSCH: Oh, I think that's correct.  
9 No, that's not, though, to say that NRC's treatment of  
10 peak dose for safety purposes was thereby  
11 legitimized by the Congress' approach to NEPA. I  
12 think there has always been this distinction between  
13 NEPA and the Atomic Energy Act.

14 MR. LEE: Thank you.

15 CHAIRMAN RYAN: Other questions?  
16 Comments?

17 Well, Marty, thanks again for your  
18 presentation. And, again, if you could leave a copy  
19 of your comments, that would be great.

20 MR. MALSCH: Sure.

21 CHAIRMAN RYAN: Are there any other  
22 questions or comments for Bill's presentation? And,  
23 Marty, you're welcome to stay and participate in that  
24 discussion if you'd like.

25 One of the things I think I'd point out,

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1 Marty, before you get too far away is that, as we have  
2 with our other working groups, if we do -- if we do,  
3 and I'm not sure we've made any commitment to actually  
4 have one, but if we do have somewhere down the line a  
5 time of compliance commitment, we have always invited  
6 participants from the State of Nevada, and we will do  
7 that again for any future working groups on this topic  
8 that's obviously of importance to Nevada and to  
9 everybody else involved.

10 Questions or comments?

11 That kind of brings us to the end of our  
12 morning agenda. We're scheduled to reconvene at 1:20,  
13 which is a nice lunch break, so that's what we'll do.

14 Hearing no other business for the morning  
15 session, we'll adjourn until 1:20. Thank you.

16 (Whereupon, at 11:43 a.m., the  
17 proceedings in the foregoing matter went  
18 off the record and resumed at 1:21 p.m.)

19 CHAIRMAN RYAN: The first part of this  
20 afternoon, we've kind of got an open discussion on  
21 low-level radioactive waste.

22 I'm happy to report Jim Kennedy from the  
23 NRC staff who deals with low-level waste on a routine  
24 basis has joined us. So we'll perhaps call upon his  
25 knowledge and expertise and direction as I might need

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1 it.

2 What I had tried to do a few weeks ago is  
3 prepare some slides on the status of life in the low-  
4 level waste arena. And it became inaccurate in a  
5 recent development and so forth. So let me kind of  
6 summarize where I think things are particularly in the  
7 commercial low-level waste arena.

8 As I think most folks know, the Barnwell  
9 low-level radioactive waste site has operated since  
10 1971 and continues to operate now for a three state  
11 compact, the Atlantic compact, New Jersey,  
12 Connecticut, and South Carolina.

13 It does take waste under contract from  
14 other parts of the country but in 2008, it will cease  
15 to operate in that national mode. And will serve only  
16 its compact member states after 2008 with the focus  
17 being on having capacity for decommissioning wastes  
18 power plants.

19 MEMBER HINZE: Has Connecticut -- can we  
20 interrupt?

21 CHAIRMAN RYAN: Please do, yes,  
22 absolutely.

23 MEMBER HINZE: In what way has Connecticut  
24 contributed -- I believe you said Connecticut, right?

25 CHAIRMAN RYAN: Yes.

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1                   MEMBER HINZE: In what way have they  
2                   contributed to this? Do they pay South Carolina? How  
3                   do they cover their part?

4                   CHAIRMAN RYAN: To tell you the truth, I  
5                   don't recall the exact consideration. But when the  
6                   Atlantic Compact was formed, there was some  
7                   consideration of how the three states would  
8                   participate. Of course with South Carolina having the  
9                   authority over the site, they're kind of the lead of  
10                  that compact.

11                  But the other states, I believe, paid for  
12                  the access to that capacity as they addressed  
13                  decommissioning questions and so forth. But I don't  
14                  know the amounts. I don't recall them. I'm sure I  
15                  heard it at one point. But I don't know.

16                  MEMBER HINZE: Well, was South Carolina --  
17                  my impression was that South Carolina was making money  
18                  off of this at one point in time. Is that correct?

19                  CHAIRMAN RYAN: Yes, South Carolina now  
20                  pretty much sets the fees. For a long time, if you  
21                  recall, particularly in the early days, low-level  
22                  waste was very much a commercial enterprise.

23                  They would charge rates -- there were six  
24                  operating sites in the United States -- you know they  
25                  were Beatty, Nevada, Hanford, Washington still in

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1 operation for the Northwest Compact, Barnwell, South  
2 Carolina, Maxi Flats, Kentucky, Sheffield, Illinois,  
3 and West Valley, New York.

4 Back in those days, a fraction of a dollar  
5 per cubic foot was kind of a typical disposal cost.  
6 And now it's in the several hundreds of dollars per  
7 cubic foot currently.

8 For the longest time during the compact  
9 days, the Low-Level Waste Policy Act of 1980 and the  
10 Low-Level Waste Policy Amendments Act of '85 created  
11 the compact system.

12 Compacts were formed or the law was passed  
13 because the governors of Washington, South Carolina,  
14 and Nevada, you know, collectively sought to not have  
15 low-level waste exist only in those states but that  
16 two concepts existed in the '80 Act.

17 The first was the states may group up in  
18 regional compacts for the purpose of managing waste on  
19 a regional basis. That is an exception to the  
20 Interstate Commerce Clause that compacts can be  
21 allowed to manage an issue on a regional basis to the  
22 exclusion of other states.

23 I think water rights and water access are  
24 also regional compact kinds of issues that can allow  
25 precluding others states' participation.

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1           About ten or so low-level waste siting  
2 activities under 61. I could probably name them all  
3 if I tried hard. But there about 10, maybe 11. And  
4 so far the only forward movement was that California  
5 -- and again, Jim, correct me if I'm wrong -- was  
6 actually issued a license but they couldn't effect the  
7 land transfer from federal ownership so it failed on  
8 that point.

9           And no other license has been granted as  
10 of this time. And the price that's been paid of all  
11 those siting efforts is in the range of several  
12 hundred millions dollars, six or seven hundred  
13 millions dollars, in fact.

14           Currently the status is that there are  
15 three sites that operate, one in Clive, Utah, the  
16 Envirocare of Utah site, the Barnwell, South Carolina  
17 site, and the Hanford, Washington site that serves the  
18 Northwest Compact, which is compact-only waste. No  
19 outside generators of waste can use that particular  
20 compact facility.

21           MEMBER HINZE: Envirocare is on its way  
22 out?

23           CHAIRMAN RYAN: No, Envirocare has got a  
24 Class A -- essentially the Class A capability. That  
25 was one of the recent changes that invalidated one of

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1 my slides. It has recently changed ownership.

2 MEMBER HINZE: Yes.

3 CHAIRMAN RYAN: The sole owner, the sole  
4 proprietor was a fellow named Semnani. And he sold it  
5 to an investment group out of New York. I can't  
6 recall the name exactly. But they, as part of this  
7 transfer, have publically stated that they don't  
8 intend to take Class B or C waste.

9 And that was kind of an issue that the  
10 governor made some statements that he wouldn't be in  
11 favor of that happening in Utah even though  
12 technically the license was granted -- the technical  
13 of the review of the license was completed under the  
14 previous ownership.

15 And there were two requirements to invoke  
16 the license or make it active. One took an act of the  
17 legislature. And the second was an act of the  
18 governor. So far so good.

19 But that didn't happen. And as part of  
20 the transfer of the ownership of Envirocare, the Class  
21 BC license is off the table in essence. I'm not sure  
22 that's a good legal description.

23 MEMBER HINZE: Did they ever have a  
24 license Michael or did they just withdraw the  
25 application?

1 CHAIRMAN RYAN: No, the license was -- the  
2 technical review of the license was completed. And it  
3 was issued. But to implement it required a  
4 legislative act and a signature of the governor.  
5 That's my best understanding of it.

6 So, again, it's a site just west of Salt  
7 Lake City, about 90 miles to the west. And it takes  
8 -- kind of the character of it is it takes large  
9 trainload, bulk quantities of typically mostly dilute  
10 materials. They do now take things like steam  
11 generators and large components.

12 They have rail access so that's one  
13 practical aspect of how they operate the site. The  
14 things that, you know, need rail access, they kind of  
15 have the capability to handle those kinds of wastes.

16 Barnwell, on the other hand, has gone from  
17 a system where the company basically set the disposal  
18 costs or prices, in addition to the taxes that were  
19 levied, and operated the site to where they are now  
20 getting paid a fee to operate the site. And the state  
21 is in charge of pricing to customers.

22 So that's been a big shift in how Barnwell  
23 is operated. And that occurred over the last four or  
24 five years or so.

25 So -- and U.S. Ecology operates the site

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1 in Hanford, Washington, again serving a small number  
2 of generators in the Northwest Compact. It's not a  
3 large compact nor is there a lot of wastes.

4 MEMBER HINZE: Is there any legalism who  
5 controls who sends their wastes where to minimize the  
6 transportation distance of the low-level waste?

7 CHAIRMAN RYAN: None that I'm aware of.

8 MEMBER WEINER: No, there is not. The  
9 compact, the laws that set up and continue to set up  
10 the compacts just simply didn't address it. But it's  
11 not that there is any particular risks or problems  
12 with transporting low-level waste.

13 CHAIRMAN RYAN: When you do the detail and  
14 look at the number of road miles that low-level waste  
15 actually travels compared to anything else, either  
16 radioactive or not, they're pretty trivial.

17 In the very busiest peak at Barnwell, for  
18 example, there would be typically -- on average let's  
19 say ten shipments per day or so. That's for a five-  
20 day workweek. So, you know, that's not a large number  
21 of trucks or material. And now it's on the order of  
22 a few shipments per week.

23 Barnwell, in its peak period back in the  
24 late 70s, received 2.4 million cubic feet of waste per  
25 year. That was changed to a license cap of 1.2

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1 million in the early 80s.

2           And now they're receiving perhaps -- and  
3 I think the limit is 35,000 cubic feet for the  
4 remaining years of their existing license. So it's  
5 gone from a million-plus cubic feet down to 35,000  
6 cubic feet.

7           Just to give you a perspective, a typical  
8 low-level waste ion exchange resin shipment will be  
9 oh, 180 cubic feet. So you can do the math and find  
10 out the number of shipments per week or per month is  
11 a much, much smaller number than it used to be.

12           And having -- at Hanford, for example,  
13 having weeks without a shipment is not unusual. On  
14 the other hand, Envirocare get the low activity waste  
15 and debris and decommissioning waste and things of  
16 that sort in bulk quantities. And they'll have  
17 trainloads of cars per day, you know, of those kinds  
18 of materials.

19           They've taken a lot of the fuse-wrap  
20 materials, from the fuse wrap program and from some  
21 decommissioning activities and contaminated sites and  
22 so forth.

23           MEMBER HINZE: So the increased cost has  
24 served a very useful function in that it has caused  
25 people to consolidate waste? Is that the idea?

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1 CHAIRMAN RYAN: You know I don't see it  
2 that way. I guess -- you know, if you said what have  
3 been the three advantages that pricing -- and, again,  
4 I'm kind of speaking not for the DOE side because the  
5 DOE profile of all low-level waste is different for  
6 lots of different good reasons.

7 But, you know, if you go back through the  
8 history of generation of low-level waste, three things  
9 changed that changed it. One was the price. I don't  
10 think that was a driver for most of the industry. For  
11 example, the nuclear power industry costs for low-  
12 level waste was not a huge portion of their budget.

13 For a long time, it was a pass-through  
14 cost because of their rate structures and, you know,  
15 being a rate-based, rate approval industry. That was  
16 something that got approved and got paid. But now  
17 that they're in a kind of a for-profit mode, that's  
18 much more of interest.

19 Another major thing that happened is a lot  
20 of focus -- and you can see this in whatever  
21 measurable for reactors you want to look at, you know,  
22 the impo measurables are not bad surrogates for this,  
23 focus has been on cleaning the water in the cooling  
24 system to reduce maintenance.

25 And if you reduce maintenance and do a

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1 much better job of keeping the water clean, you reduce  
2 the generation of low-level waste, for example, during  
3 an outage.

4 And power plants tended to focus more and  
5 more -- and there are people who are active in this in  
6 this building -- you know, they tend to generate a lot  
7 less low-level waste waste. And what they do generate  
8 is, you know, fairly concentrated and in much smaller  
9 volume. So that's another aspect.

10 Now is the price a driver? Perhaps it was  
11 an attention getter but I don't know that it was a  
12 driver.

13 Now, you know, smaller generators, for  
14 example, you know, medical community generators and  
15 things like that, that was a bigger issue to have the  
16 cost higher. But at best, again looking just at the  
17 commercial portion, nuclear power generates 75 percent  
18 of the waste, 99 percent of the curies, and industry  
19 generates about 25 percent of the volume, and just  
20 that tiny little extra bit of the curies.

21 MEMBER HINZE: But this really means that  
22 you've increased the radiation coming from the waste  
23 because you've compacted it and you have made it into  
24 a smaller volume. And that smaller volume has as much  
25 radioactivity as a much larger volume.

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1           CHAIRMAN RYAN:  There is a competing thing  
2           that happens as well.  I mean you think that at first  
3           blush.  But the competing thing that happens, because  
4           the material is now much denser, the self-absorption  
5           is such that it's not exactly but kind of a wash.

6           MEMBER HINZE:  Not linear.

7           CHAIRMAN RYAN:  Well, no, it's denser so  
8           that the self-absorption in the waste package is  
9           higher.  I mean a fully compacted 55-gallon drum will  
10          weigh about 850 pounds.  That's much denser than what  
11          you see in a routine 55-gallon drum of say soil.  You  
12          know so the self-absorption is a big part of it.

13          But the general question that you're kind  
14          of hinting at is operation radiation protection for  
15          handling low-level waste is certainly something that  
16          has also evolved over time as these issues of waste  
17          characteristics, waste packaging, waste pretreatment,  
18          waste treatment and disposal techniques have evolved  
19          as well.

20          So that's kind of a very brief view of the  
21          history and some of the key facts and figures.  If you  
22          have any questions on that holler.

23          But the kind of point in time we're at now  
24          is we've recently all seen the GAO report that I think  
25          summarized things pretty much as I summarize them to

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1 you. That there is existing access to capacity for  
2 all classes of waste. And things seem to be moving  
3 through the system fairly well at this point.

4 But the thing I always have kept in my  
5 own, which I think the GAO report alluded to, was that  
6 there could be some sort of a force major of some sort  
7 that access all of a sudden doesn't happen any more.

8 For example, if one of the existing sites  
9 was found to have some regulatory compliance problem  
10 and they said well, we can't accept waste until we  
11 resolve that. I mean that could be something that  
12 could happen.

13 Or, you know, one site decides to close or  
14 whatever it could be that access to capacity for B or  
15 C or A waste could be interrupted in some way. That's  
16 really the question.

17 In 2008, if everything holds the way it  
18 is, you've got Envirocare not taking BC waste and  
19 Barnwell closing to everything out of compact.

20 Now a couple other interesting provisions  
21 are I believe the NRC has access, the Commission has  
22 access to allow emergency access through the disposal  
23 capacity. They can make that happen. They have the  
24 authority to do that. So that's one aspect of it.

25 MR. MARSH: So that means what? It means

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1 they can reopen --

2 CHAIRMAN RYAN: Well, and the interesting  
3 thing about Barnwell is their volume capacity will not  
4 be used up and closed. There's plenty of license  
5 space. It's just not -- there won't be access to it  
6 except for the compact members.

7 MR. MARSH: Because their license time  
8 runs out?

9 CHAIRMAN RYAN: Well, no. Well, it's not  
10 really their license that runs out. It's just that  
11 that's the way they decided to operate.

12 So all of that being said, I think, you  
13 know, the reason I think we had originally decided  
14 that low-level waste was a topic is recognizing that  
15 in the bigger picture, the timeline between now and  
16 2008 is not such a long time. It's that we were  
17 trying to be a little proactive by saying, you know,  
18 what's on the agenda.

19 The other -- I have not yet mentioned but  
20 there is one other siting activity now and that's in  
21 the State of Texas, Waste Control Specialist has  
22 applied for and is in the process of having a license  
23 application reviewed for a 61 site in Andrews, Texas.

24 MEMBER HINZE: That's near El Paso?

25 CHAIRMAN RYAN: No, it's on the border

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1 with Mexico.

2 MEMBER HINZE: Yes, okay.

3 CHAIRMAN RYAN: Not Mexico, New Mexico.

4 MEMBER HINZE: New Mexico?

5 MEMBER WEINER: Yes, it's the Sierra

6 Blanca site.

7 MEMBER HINZE: Oh, okay.

8 CHAIRMAN RYAN: No, it's not. It's --

9 MEMBER WEINER: Did it move from Sierra  
10 Blanca?

11 CHAIRMAN RYAN: It's on the border and  
12 it's just outside of Andrews, Texas.

13 MEMBER WEINER: Yes.

14 CHAIRMAN RYAN: And it's 90 miles west of  
15 Midland-Odessa. And it's literally on the state line.

16 They are operating with taking some mixed  
17 waste now, norm and some RCRA D-cell where they take  
18 some raw materials and they're trying to expand that  
19 facility to take low-level wastes as well as some 11e2  
20 wastes.

21 MEMBER HINZE: And that will be the State  
22 of Texas and not a private --

23 CHAIRMAN RYAN: Well, Texas is in a  
24 compact with is it Maine?

25 MEMBER HINZE: Maine, yes. And Vermont?

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1           CHAIRMAN RYAN:  And Vermont.  But they're  
2           looking also to take 11e2 materials from more of a  
3           nationwide base.  And they're also hoping to take  
4           wastes, in part, from the DMV complex.

5           I don't know exactly what all their  
6           profiles are anticipated to be.  But they are in the  
7           midst of a license application and review process now.

8           MR. MARSH:  So what's this like is a  
9           physical plant?  Is there warehouses on the surface?

10          CHAIRMAN RYAN:  No, they're shallow  
11          engineered disposals cells of one sort or another.  
12          And the ones at Barnwell, for example, use all  
13          concrete over-packs to all waste packages.  There's an  
14          under-drainment system and a sump interception system  
15          for monitoring.

16          And then there's a cap put over all the  
17          shallow cells and all other closed areas of the site  
18          that has a lot of the characteristics of a RCRA cap.  
19          There's a polyethylene layer and a drainage layer and  
20          the usual stacking of the shell all-surface  
21          infiltrate.

22          Yes, it's comparable.  You know, a little  
23          difference in materials tailored to that site, to the  
24          sizes and all of that.  And then, of course, surface  
25          drainage becomes a civil engineering design issue and

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1 so forth.

2 Now at Andrews, I'm not sure what they're  
3 specific designs are going to look like, but it will  
4 be the same kind of shallow engineered disposal cells  
5 as is the case, by the way, at Hanford.

6 Now Utah, because they take bulk  
7 materials, tends to operate in more of a traditional  
8 landfill kind of way where they build lifts. And, you  
9 know, again they have a multilayered kind of cap  
10 design. And, you know, a water management system.  
11 But it's a much larger scale.

12 In Barnwell, for example, the licensed  
13 property is 235 acres, of which there's about -- I'm  
14 guessing at this point, 120 acres of disposal cells  
15 from 1971 until now. That's not a lot of acreage.

16 You know when you think of 200 or 300  
17 trucks a day going into a municipal landfill in a  
18 modest-sized city as opposed to a couple of trucks a  
19 week, it's a much different flow rate of material.

20 MEMBER HINZE: Do any of these three take  
21 mixed waste?

22 CHAIRMAN RYAN: No.

23 MEMBER WEINER: No.

24 CHAIRMAN RYAN: No, not at all. Except  
25 for WCS, which does have a mixed-waste cell, and for

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1 Envirocare does take a mixed cell, but compact sites  
2 do not, either the Barnwell or the Hanford. But  
3 Envirocare does have a mixed-waste capability both for  
4 treatment and disposal.

5 MEMBER HINZE: Is that covered with the  
6 same license application?

7 CHAIRMAN RYAN: No, they have a RCRA Part  
8 B permit as well as a radioactive material license.  
9 And they're been carefully dovetailed so that they  
10 don't conflict. And they address the same issues.

11 MR. HAMDAN: So Mike are there steps that  
12 the generators are taking right now? I mean those  
13 that are going to Barnwell in order to take their  
14 waste somewhere else after 2008 if they are not in the  
15 compact?

16 CHAIRMAN RYAN: That's a good lead-in  
17 question for the next activity which is Senator  
18 Domenici, as you may recall, had a hearing.

19 And I think there were several generators  
20 there, if I'm not mistaken it was Allen Pasternak from  
21 the Cal Rad Forum, that's the California Radioactive  
22 Materials Users Group, who gave testimony and asked  
23 specifically that the Senator look into this access  
24 question and capacity question.

25 And I think the real focus is on access,

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1 not capacity. The capacity exists. It's access to  
2 capacity that is viewed at a reasonable price by the  
3 generator that really the heart of it.

4 And the argument that you'll hear from the  
5 Cal Rad Forum and others is well, do you want low-  
6 level waste stored at a whole bunch of licensee  
7 facilities across the state for months, or years, or  
8 decades? Or do you want all in one place where it is  
9 monitored, and maintained, and properly disposed?

10 Jim, how did I do? Is that a fair history  
11 of the world, Part 1?

12 MR. KENNEDY: Jim Kennedy from the NRC  
13 staff.

14 You did great. Everything you said was  
15 right on. Good summary.

16 CHAIRMAN RYAN: Thank you. I don't think  
17 I left out any of the bigger pieces.

18 MR. KENNEDY: No.

19 CHAIRMAN RYAN: There's lots of detail on  
20 what's going on.

21 So if you look at the regulations, 61 is  
22 kind of pre-risk-informed. If you look carefully at  
23 the doses, you'll see there are organ doses is in it  
24 which is not the same as 10 CRF 20 or other parts.  
25 And that's because it's based on ICRP2, which is the

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1 older guidance from ICRP.

2 And the siting criteria in subpart B tend  
3 to be -- some are fairly clear, for example you can't  
4 be in the flood plain map. You're in or you're out.  
5 That's an easy determination. Or easier.

6 And some are less well defined in terms of  
7 how we might do it today if were risk informing  
8 things.

9 No groundwater, perennial or otherwise,  
10 shall intrude into the disposal unit. The site shall  
11 be sited so it avoids area of natural resources.  
12 Anybody want to guess on how we interpret those  
13 exactly?

14 So I think, you know, one sort of  
15 productive thing to think about is we did, you know,  
16 offer comment, perhaps how do you take what we have  
17 now and move it toward a better risk-informed setting  
18 might be a way to think about things.

19 Or how do we provide the translation code  
20 so we get from organ doses to what would be more of  
21 the kind of dose we think about for say it's in the  
22 license termination rule or how we protect workers or  
23 things of that sort. There might be some things on  
24 that list we could think about.

25 MEMBER HINZE: TOC is 500 years?

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1 CHAIRMAN RYAN: That's a good question.  
2 It varies. It's all the sites, with the exception of  
3 Envirocare, which wasn't licensed under 61 exactly.  
4 It existed before 61 did.

5 At all the sites, there were  
6 underdevelopment or that are in operation today are  
7 regulated in agreement states. So the time of  
8 compliance has really been a bit variable. Barnwell  
9 is now using the couple thousand year time frame for  
10 looking at their model and what they've done.

11 The other thing that's kind of an  
12 interesting difference and an advantage is the  
13 existing sites now have 34 years in the case of  
14 Barnwell. And it's about the same for Hanford. Real  
15 data.

16 And they've been doing ground water  
17 modeling and monitoring. Monitoring in terms of  
18 radioactivity, content, or lack of content, for a  
19 compliance demonstration but also geohydrologic  
20 modeling-related measurements are, you know, constant  
21 water level modeling, and all sort of other things to  
22 enhance the robustness of their predicted models for  
23 site performance.

24 So it's a little different setting. But  
25 to answer your question more directly, it's on the

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1 order of 1,000 or so years is probably appropriate.  
2 And the reason for that is if you look at the global  
3 decay of a typical low-level waste mix in the  
4 commercial environment, two-thirds of the curies are  
5 Cobalt 60 typically, seven percent is cesium 137,  
6 three percent or so is nickel 63 and it trails on from  
7 there.

8 And the global decay is shut off of sites  
9 in a given day, 25 years from closure, there will be  
10 25 percent of the curies remaining. At the 100-year  
11 mark it's about eight percent. And then, you know, on  
12 up into the 300-year mark, you dribble off into the  
13 couple of percent, which is mainly the source material  
14 that is allowed to be disposed as all other waste.

15 So it kind of matches up with the physical  
16 longevity of the waste.

17 MEMBER HINZE: And that's true of B and C.

18 CHAIRMAN RYAN: Yes, B and particularly C,  
19 which, you know, obviously garners a lot of attention,  
20 is about 90 percent of the activity in a low-level  
21 waste site. And is almost -- all cobalt.

22 Most of it is irradiated hardware from  
23 core internals. And most of the radioactivity is  
24 Cobalt 60 with a little bit of nickel 63 and a few  
25 odds and ends tucked in with the other radionuclides

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1 in the rarer radionuclides and the irradiated steel.

2 And the interesting part about it from a  
3 performance assessment standpoint is the concentration  
4 tables -- and you know, we've touched on this perhaps  
5 already but let me go through it again.

6 If you looked at the draft environmental  
7 impact statement for '61, there's a lot of detail in  
8 that that is not in the final. And the table is  
9 actually controlled by the intruder scenario rather  
10 than by some sort of a long-term agreement at a  
11 boundary.

12 And that's why, for example it's a problem  
13 I give my students, why is strontium allowed at higher  
14 concentration in Class C waste than cesium? So we're  
15 all in touch, strontium is the most restricted  
16 radionuclide in fission product inventory.

17 While it is if it is an internal ingestion  
18 in groundwater or water of any kind of internal  
19 intake. But if it external exposure, cesium drives  
20 the bus while it is the external exposure of the  
21 intruder that control the concentration of cesium.

22 Now, talk about risk informing, what's the  
23 probability of intrusion one at year 100? What's the  
24 probability that the intrusion will occur into the  
25 very hottest waste? It's also one. What's the actual

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1 random probability that would happen in 235 acres?  
2 Well, it's about 10 to the minus 7 or so.

3 So that's an interesting, you know, just  
4 a point that if we were to think about risk informing  
5 the table, we might think about it differently today.  
6 I'm not saying it is right or wrong or should be  
7 changed or shouldn't be changed. I'm simply pointing  
8 out that, you know, a risk informed view of it might  
9 lead to a different conclusion. But it's interesting  
10 to think about.

11 MEMBER HINZE: Well, what is the status in  
12 terms of making it risk informed? Is this on the  
13 table?

14 CHAIRMAN RYAN: As far as I know, there's  
15 no movement to do too much to the regulation itself.

16 MR. KENNEDY: That's right. Not at this  
17 time. You know maybe it's something that we want to  
18 look into in connection with a white paper or just  
19 looking ahead in general to the low-level waste  
20 situation in the U.S. and what we might do to make it  
21 better. But it's not something that we've been  
22 looking at recently.

23 CHAIRMAN RYAN: And I think if you think  
24 about where we are at the moment, if the ACNW was to  
25 take on the task of actually preparing a white paper

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1 that would summarize kind of what I at least outlined  
2 verbally, and put some more meat to the story and  
3 references and so forth, I think that would be a  
4 pretty good contribution to both the Committee's  
5 activities, any communication we might have with the  
6 Commission about it, as well as with the staff.

7           Because I think it would allow us to, you  
8 know, maybe draw on lots of knowledge and experience  
9 base that now spans, my goodness 40 years or so, and  
10 bring that together. Because there has been lots of  
11 activity. I mean if you look at new siting activities  
12 that didn't work, I mean there have been ten of them  
13 across the country, if you look at the current state  
14 of access, the GAO report, it's a very interesting  
15 story.

16           And I think we're at a good place where  
17 that kind of a well thought out white paper would be  
18 of great value.

19           And then I think from that in a more  
20 careful and thoughtful analysis that we might  
21 undertake, and might even have some additional staff  
22 input on or presentations we could perhaps suggest  
23 areas that would be beneficial to think about, of how  
24 we would effectively move to being more risk informed  
25 or to, you know, looking at how low-level waste might

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1 be addressed in the future.

2 MEMBER WEINER: Mike, if we move to a more  
3 risk informed reg, wouldn't that require a rule  
4 change?

5 CHAIRMAN RYAN: Well, no necessarily,  
6 Ruth. I mean you could certainly think about that.  
7 But you know there might be lots of things you could  
8 do, you know, in a regulatory guide or in NUREG-kinds  
9 of documents to advise applicants, licensees, or users  
10 how to do things in a risk-informed way that could  
11 then, you know, flow into the actual work.

12 I don't know that you necessarily have to  
13 throw the baby out with the bath water and start over.  
14 But I think, you know, you could address things in a  
15 piece-wise way. And what I think we could add value  
16 on is to perhaps offer at least our view of perhaps,  
17 you know, what might be at the top of the hit parade  
18 on issues that would be a big help if --

19 MEMBER WEINER: Yes.

20 CHAIRMAN RYAN: -- we had, you know, some  
21 more consensus on how to address this question or that  
22 question. I mean I think that could add value.

23 If that lead to something in, you know,  
24 terms of a modification down the line, so be it. But  
25 I think it's always easy to say change the rule.

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1           But I think it's much more valuable to say  
2 here's a real serious and detailed look at the status  
3 of things. And here's kind of some items that need  
4 attention. And here's some perhaps strategies to  
5 address those key items.

6           MEMBER WEINER: I don't want to get away  
7 from that point because I think it's very important.  
8 A number of people who are involved with low-level  
9 waste don't want to change the rule because it's a  
10 rule they've been living with for as you say 40 years.

11           CHAIRMAN RYAN: Well, not quite 40. I  
12 mean the rule has been since `82.

13           MEMBER WEINER: Okay. So it's 28.

14           CHAIRMAN RYAN: But I think clarity is  
15 what my own experience tells me folks would want.

16           MEMBER WEINER: Yes.

17           CHAIRMAN RYAN: Whether it comes in a rule  
18 change or in guidance that's clear, that's really the  
19 secret. And I think there are ways to perhaps offer  
20 clarity.

21           MEMBER CLARKE: Mike, do you think there's  
22 an opportunity for a performance-based piece as well?

23           CHAIRMAN RYAN: Yes, I think all of that  
24 should be in play in our thinking. You know the  
25 interesting thing, I think, to keep in mind, and,

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1 again, I defer to Jim's point, I can't point to  
2 anybody at any site that has received a dose from any  
3 low-level waste activity.

4 MEMBER WEINER: No, and --

5 CHAIRMAN RYAN: Member of the public.

6 MEMBER WEINER: -- the U.S. Ecology sites  
7 monitors their workers very carefully.

8 CHAIRMAN RYAN: And I'm thinking not only  
9 the workers but members of the general public. And  
10 even the core failed sites that are closed really  
11 didn't fail in the sense of exposing anybody to  
12 members of the public.

13 MEMBER WEINER: No.

14 CHAIRMAN RYAN: So I think that's, you  
15 know, how do you move ahead with things that, you  
16 know, that's why I say the wholesale, let's rewrite  
17 the rule doesn't necessarily make sense to me.

18 But I think if we could offer them some  
19 improvements that would be, perhaps, incremental to  
20 throwing the rule out but clarifying improvements,  
21 that moves the ball forward in a productive way.

22 So again, my own view is the white paper  
23 should be aimed at that kind of a input.

24 MR. LARKINS: Unless revision of the rule  
25 would facilitate siting and removing some unnecessary

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1       burden.  If there were some key objective goal down  
2       the road that the Commission could possibly see or  
3       have a motivation for wanting to do that, maybe if we  
4       could articulate that.

5                   CHAIRMAN RYAN:  Yes, that's what I'm  
6       saying.  I think the study of the white paper might  
7       help us to systematically tease out some of those  
8       opportunities, John.  I don't disagree.

9                   And it may be more than just say well  
10       let's get regulatory-type guidance and maybe well if  
11       this part of the rule was clarified with regard to  
12       these issues, you know, it would be a much clearer  
13       package to perform siting and so forth.  That could  
14       very well be.

15                   But I'm trying not to prejudge it and sort  
16       of, at least in my own mind, get the information  
17       organized before you decide what the right approach to  
18       an answer is.  And certainly that's one.

19                   MEMBER WEINER:  Do we want to address the  
20       question of access?

21                   CHAIRMAN RYAN:  I don't know how I would  
22       do that frankly.  You know access --

23                   MEMBER WEINER:  That's why I'm asking.  I  
24       know you don't.

25                   CHAIRMAN RYAN:  Access is, at the moment,

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1 in the hands of the states that run the facilities.

2 MEMBER WEINER: Yes.

3 CHAIRMAN RYAN: There's also the  
4 capability -- again, Jim, you'd have to explain the  
5 details, but there is a provision where NRC can grant  
6 emergency access.

7 MR. KENNEDY: Right.

8 CHAIRMAN RYAN: How that would work  
9 precisely, I don't know.

10 MR. KENNEDY: Well, Jim Kennedy from the  
11 staff. Those criteria for emergency access are laid  
12 out in 10 CFR Part 62. And it's all laid out there.  
13 That was the requirement that we promulgate that rule.  
14 It was a requirement in the Low-Level Waste Policy Act  
15 of 1985.

16 Now the threshold is very high. There has  
17 to be a genuine and immediate health and safety issue.  
18 So in practice, we think that provision is going to be  
19 rarely, if ever, used.

20 Regarding access, you know, generators  
21 getting into compacts where they currently don't have  
22 access or getting into facilities in compacts where  
23 they don't have access now, that's something that we  
24 don't have any legal authority over at the moment.

25 In the June 2004 GAO report, they thought

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1 that NRC ought to be overseeing the national program  
2 and going to Congress, for example, when we thought  
3 there was a significant problem in low-level waste  
4 disposal, access included.

5 And basically in our comment letter back  
6 to them, we disagreed that we were the agency to do  
7 that. We see our mission as health and safety and  
8 security. And whether a generator in one state or  
9 another has access to Barnwell or other facilities, we  
10 just don't see that within our responsibility so far.

11 CHAIRMAN RYAN: To go back to the history  
12 for just another minute, recall that the three states  
13 in the late 70s went to Congress and generated the  
14 momentum to create the Low-Level Waste Policy Act,  
15 which formed the law that gave every state just two  
16 obligations.

17 And can group up and manage low-level  
18 waste as groups or compacts as long as you get them  
19 approved by Congress. And two, every state has the  
20 obligation to manage its own low-level waste. It's a  
21 very clear principle in the '80 act.

22 And the '85 act actually implemented a  
23 system to kind of push states in that direction with  
24 penalties for access if they weren't forming compacts  
25 and having site development activities and so for.

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1           And so I think you'd have to ask the  
2 question, and again it's beyond our purview, but if a  
3 state or group of states went back and said well, we  
4 think you ought to take this back now and give it back  
5 to the NRC, you might say you asked for it, you got  
6 it.

7           MEMBER WEINER: Yes.

8           CHAIRMAN RYAN: So I again I think it's  
9 beyond kind of the technical arena where we could  
10 provide our best advice and guidance. And that's, you  
11 know, again beyond what I view to be our purview.

12           MEMBER HINZE: Are there any external  
13 drivers to changing the rule or changing this? Ruth  
14 is saying that the states want to keep it the way it  
15 is? Or the repositories want to keep it the same?

16           Are there any external drivers? Are the  
17 states involved in this that they want it changed?

18           CHAIRMAN RYAN: I'd have to say as a  
19 general matter that there's not any groundswell to do  
20 anything with the exception of the Cal Rad Forum  
21 that's been kind of pushing on a national level.

22           As I mentioned, one of the Cal Rad  
23 representatives was at the Domenici hearing asked  
24 that, you know, this be addressed. But, you know,  
25 there's all kinds of generators in California.

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1           And, again, they're the ones that raised  
2 this issue of storage of lots of locations throughout  
3 the state. And should there be a national program to  
4 address it.

5           And that's where the question that has  
6 recently been asked came from was, as I understand it,  
7 the Cal Rad Forum. Alan Pasternak was the individual  
8 that spoke about it at the hearing.

9           MEMBER WEINER: Well, there is a general  
10 sense that the compact system, as it was originally  
11 envisioned, kind of failed. I mean you never got any  
12 more sites under the compact system than you had in  
13 the first place.

14           But at this point, we can all just say so  
15 what. I mean so it failed. That's not a driver for  
16 anything anymore as far as I can see. I don't know.  
17 What do you think?

18           CHAIRMAN RYAN: It's hard to see a clear  
19 picture of any drivers. And I think that, you know,  
20 the industries that have been served by -- again, I'm  
21 focusing solely on commercial low-level waste, have  
22 been resilient in the sense they've responded to these  
23 various cost changes or changes in strategies or  
24 availability or how they would process waste and  
25 dispose of it and so forth.

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1 I know that during the early period of the  
2 '80s, there were a couple of occasions where access to  
3 Barnwell was in serious question.

4 MEMBER WEINER: Yes.

5 CHAIRMAN RYAN: During that time frame,  
6 and again, there are experts in this building that  
7 know all about our utilities deal with both, you know,  
8 spent fuel, which we talk a lot about in this room  
9 but, you know, low-level waste and other waste they  
10 have to manage, that they have on-site storage  
11 capability that is monitored, has over-site and so  
12 forth.

13 And, you know, a lot of utility companies  
14 spent a lot of time making they had disposal capacity  
15 for the waste they were generating that could buffer  
16 any deprivations in access to the low-level waste.

17 MR. HAMDAN: Mike?

18 CHAIRMAN RYAN: Yes?

19 MR. HAMDAN: Can the white paper address  
20 the low activity such that if you have a category  
21 within the Class A that's exempt from regulations or  
22 where the regulation can be waived?

23 CHAIRMAN RYAN: You know I guess you can  
24 certainly think out loud about that. But I think  
25 that's, frankly, already being addressed in this

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1 disposition of solid materials rulemaking and others.

2 So it might be just for the purposes of  
3 clarity of what our white paper is addressing is draw  
4 a brighter line. And say we're dealing with the Class  
5 A waste as it is classified. And not try and deal  
6 with things going out the other way.

7 I think that's being handled quite  
8 effectively though the solid material rule. That's my  
9 own view of the solid material rulemaking. That's  
10 underway.

11 MEMBER HINZE: But aren't you discussing  
12 BRC? Below regulatory concern? Is that still  
13 something that Mike can talk about.

14 CHAIRMAN RYAN: I don't the NRC as a  
15 concept is productive at this point because it was  
16 ended. What is ongoing is a disposition of solid  
17 material where there are some small quantities,  
18 perhaps, of radioactive material. And that's a  
19 rulemaking that's underway.

20 Again, I would not want to, you know,  
21 intrude on that. We're scheduled to hear about that  
22 soon and that will be a separate matter. And I would  
23 suggest strongly that we keep it separate because we  
24 wouldn't want to cloud any issues of low-level waste  
25 that we might want to comment.

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1           Now they obviously touch one another at  
2           some point. But I would say let's just draw the line  
3           there for the purpose of convenience of our white  
4           paper. And make it clear that we're doing that so  
5           that we don't intrude onto other activities that are  
6           ongoing.

7           MEMBER HINZE: Mike, is there anything in  
8           the -- required in the license application concerning  
9           the use of monitoring wells around the perimeter of  
10          the site?

11          CHAIRMAN RYAN: A site must be capable of  
12          being monitored, modeled, and analyzed. That's the  
13          criteria of the site.

14          MEMBER HINZE: For what kind of distance?

15          CHAIRMAN RYAN: It doesn't say.

16          MEMBER HINZE: Okay.

17          CHAIRMAN RYAN: So the point is, that, you  
18          know, you can envision -- and that's -- you know  
19          picked on an interesting point, Bill, where I think  
20          that's something where we could offer some clarity.  
21          You know what should those horizons be for these kinds  
22          of plannings and so forth?

23          But, you know, my own personal approach  
24          had always been there's two reason to put in a  
25          monitoring role.

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1           One is if I'm demonstrating compliance or  
2 measuring something that somebody is interested in at  
3 a point of interest; and two is I'd better be  
4 measuring the water level, I'd better have some help,  
5 you know, is it telling me something about zone water,  
6 or Zone 6, or, you know, whatever so that I can  
7 enhance to robustness of the modeling exercise as time  
8 goes on.

9           I mean just the very structure of how to  
10 do that and so you get sort of, you know, two for the  
11 price of one. If you monitor for compliance and you  
12 monitor for modeling, that would be an interesting  
13 aspect to think about how to enhance that. A site  
14 must be capable of monitored, modeled, and analyzed.

15           MR. HAMDAN: But to answer your question,  
16 we have --

17           PARTICIPANT: Do we have CFR 61 here?

18           CHAIRMAN RYAN: Sure.

19           MR. HAMDAN: In the sites --

20           CHAIRMAN RYAN: Right.

21           MR. HAMDAN: -- you give us guidance.

22           CHAIRMAN RYAN: Right.

23           MR. HAMDAN: And the point of compliance  
24 is usually at the boundary; however the definite  
25 concentration limits allows you, if you meet certain

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1 requirements, to put the point of compliance away and  
2 you go as far as the property boundary. But then you  
3 have to verify concentrate properties.

4 So you could use a similar, you know,  
5 model.

6 MEMBER HINZE: It's more proscriptive  
7 isn't it --

8 MR. HAMDAN: It is.

9 MEMBER HINZE: -- than the low-level waste  
10 sites.

11 MR. HAMDAN: Yes.

12 MEMBER HINZE: It's very paradoxical.

13 MR. HAMDAN: Yes, it is.

14 MEMBER HINZE: Yes.

15 CHAIRMAN RYAN: Areas must be avoided  
16 having no natural resources which, if exploited, would  
17 result in failure to meet the performance objectives.

18 The disposal site shall be capable of  
19 being characterized, modeled, analyzed, and monitored.  
20 That's the requirements.

21 Now again I think the experience where we  
22 can offer a white paper some clarity perhaps on where  
23 that begins and where the middle of is and where the  
24 end of that is, to meet the performance objectives, I  
25 think we would be adding some value perhaps.

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1           And just to review the four criteria are  
2           the general requirement, land disposal facilities must  
3           be sighted, designed, operated, closed, and controlled  
4           after closure that so reasonable assurance exists, that  
5           exposures to humans are within the limits established  
6           in the performance objectives below, 41 through 44.

7           So there is a protection of the general  
8           protection of the general population from releases of  
9           radioactivity, 25 millirem whole body, 75 millirem in  
10          the thyroid, and 25 millirem to any other organ.

11          Let's pick on the thyroid dose just for  
12          fun. I-129, if it is distributed in the iodine pool  
13          in the diet, can't produce a large dose. That's the  
14          long-term radionuclide of interest. Now that would be  
15          interesting to figure.

16          What are these, you know, full-body organ  
17          and any other organ doses mean in the parlance of more  
18          modern views of dosimetry and say Part 20 and others.

19          Protection of the individual from  
20          inadvertent intrusion. Design, operation, and closure  
21          of the land disposal facility must ensure protection  
22          of any individual inadvertently intruding into the  
23          disposal site and occupying the site or contacting the  
24          waste at any time after institutional controls over  
25          the disposal site are removed.

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1           That's two. That's the actually case in  
2 the draft EIS, that limited the concentrations. That  
3 was the limiting case as I read it.

4           Protection of individuals during  
5 operations. Of course, that refers out to Part 20.

6           And then stability of the disposal site  
7 after closure.

8           Facility must be sited, designed, used,  
9 operated, and closed to achieve long-term stability of  
10 the disposal site. And to eliminate to the extent  
11 practicable, the need for ongoing active maintenance  
12 of the disposal site following closure so that only  
13 surveillance, monitoring, or minor custodial care are  
14 required. All things that could probably benefit from  
15 some definition or discussion.

16           So I think, you know, that's why I started  
17 with the idea that I don't know -- you know, I mean  
18 you can always say oh, let's redo the rule. That's  
19 easy to say.

20           But I think if you just put some  
21 experience, you know, and get some helpful guidance on  
22 how to, you know, apply some of those requirements and  
23 then some of those siting requirements, we could add  
24 a lot of value.

25           Yes, sir?

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1 MR. LEE: Just as a data point. Staff  
2 previously issued a staff position on the former NUREG  
3 1573, which tries to get into some of the  
4 implementation issues for Part 61.

5 And it's my understanding that there's  
6 still even -- that was published, I think, in 1996, I  
7 think, and they're still getting regular requests for  
8 that. So to a certain extent, some of the technical  
9 aspects of the regulation the staff have tried to  
10 address.

11 But the nevertheless, like Part 61, or  
12 Part 60 rather, there's many deterministic aspects to  
13 Part 61.

14 CHAIRMAN RYAN: And that, I think, was the  
15 issue at the moment at that time that it was not clear  
16 how you'd take deterministic issues and make the  
17 linkages that we probably have better clarity on now.

18 MR. LEE: Yes. And given that there's  
19 almost decades now of PA work, both in many aspects of  
20 NRC's regulatory programs, there's probably  
21 opportunities to look at Part 61 and make  
22 recommendations on how to have a more risk-informed  
23 regulation that doesn't lead to sub-optimization in  
24 design and things like that. I mean there's -- with  
25 the deciding criteria, for example, in other things.

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1           And that may be another starting point is  
2           to look at the NUREG because they do deal with certain  
3           policy issues as well as technical issues.

4           CHAIRMAN RYAN: You know and you could  
5           refine the bins of the questions. Do you want to  
6           focus on the issues that might be addressed by new  
7           applicants? You know, what's there? And I think  
8           that's the most productive area.

9           Because, again, as we've noted, sites  
10          that, you know, exist then are closed or operating  
11          have not had exposures to members of the public that  
12          have exceeded any limits. So what's the best way?  
13          And I think that's where some insight from the staff  
14          would be helpful and, you know, prioritize what might  
15          go on a list as, you know, it would be really best to  
16          do it that way.

17          MR. HAMDAN: The reason why the case for  
18          changing the rule for low-level waste is so important  
19          is that you have this wide range of activity in what's  
20          now called waste. You have Class A on one hand. You  
21          have greater than Class C and all that. And all this  
22          is called low-level waste.

23          CHAIRMAN RYAN: Well, low level doesn't  
24          mean small quantity. You know if you say what does  
25          low level mean to me, it means that it is waste that

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1 contains relatively short-lived radionuclides. And as  
2 I explained, after 100 years, you're down to a few  
3 percent of what you started with.

4 That's what low level means. There's a  
5 low level of it left at a time when there's not a lot  
6 of, perhaps, oversight or scrutiny or a need for it.

7 So high activity waste, you know, I mean  
8 the terms are not clear in terms of conveying anything  
9 about the risk. That's a flaw of the 1946 Atomic  
10 Energy Act. And we still live with those fundamental  
11 definitions today.

12 MR. HAMDAN: If we are thinking disposal  
13 and waste disposal, I think the distinction between  
14 Class C and Class A and may B is really significant.  
15 From the waste standpoint.

16 CHAIRMAN RYAN: Well, you know, I don't  
17 know. I don't know. I think, to me, what is  
18 important is to understand the definition.

19 Low-level waste is a definition of  
20 exclusion.

21 MEMBER WEINER: Yes.

22 CHAIRMAN RYAN: There's no such thing as  
23 "low-level waste is". Read the definition. Low-level  
24 waste is not high-level waste, you know, and on down  
25 through the list. It's everything else but the things

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1 that it is not.

2 So that's, you know, there's a Rosetta  
3 Stone that you need to help you sort all of these  
4 definitions. But once you get it, it's not hard to  
5 follow.

6 MR. HAMDAN: But isn't that part of the  
7 problem though?

8 CHAIRMAN RYAN: Well, it is in terms of  
9 the transparency of it all. But I think, frankly,  
10 that's something again we could be effective at trying  
11 to shed some clearer light on how to, you know, sort  
12 that out so that it is a little clearer.

13 And I think that is part of the confusion  
14 that, you know, high activity Class C waste sounds  
15 different than 5.6 year Cobalt 60 that's gone in 50  
16 years. That's something to think about.

17 MEMBER HINZE: How do you see a white  
18 paper come together.

19 MEMBER WEINER: Well, Mike, that's what I  
20 was going to ask. What do you see as the steps  
21 towards this white paper? Looking at the rules with  
22 the idea of clarifying it?

23 CHAIRMAN RYAN: I guess I'd be happy to  
24 take a crack at an annotated outline. And maybe  
25 suggest how this could be organized and what might be

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1 under chapter headings or something of that sort.

2 And get it around to the members and John, the  
3 staff, as we might talk about what might be on some  
4 productive areas to talk about. Then expand it as we,  
5 you know, get input and get people's thoughts on it.

6 MEMBER WEINER: Yes, I think --

7 CHAIRMAN RYAN: I'd be happy to --

8 MEMBER WEINER: -- that's a good idea. I  
9 think you've hit on some very key things, especially  
10 this clarification idea. And I think people have been  
11 working with the rule and to say, you know, to throw  
12 it out or start over, I don't think that's a good idea  
13 at this point.

14 MR. LEE: But Ruth, not to contradict you  
15 though, no sites have been licensed under Part 61.  
16 The existing sites were licensed under Part 50.

17 CHAIRMAN RYAN: Not exactly right.  
18 Envirocare, which has a license that has all the  
19 features of a 61 license for Class A waste has been  
20 licensed.

21 It went through an evolution of license  
22 amendments to get there because it started out as  
23 taking more materials similar to the uranium mill  
24 tailings pile to which the Envirocare site is  
25 adjacent. But there has been a site license.

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1 MR. LARKINS: No, I think the idea of  
2 outlining what might be in the white paper, we'll see  
3 what's the objectives and goals. And what various --  
4 I mean there's lots of different pieces that you could  
5 bring into that what would be the priorities and  
6 focus.

7 And then I think then to engage in a  
8 conversation with some of the people who have been  
9 working in this area in NMSS and some of the senior  
10 managers who have some strong view on that, maybe a  
11 dialogue. And then a reiteration of --

12 CHAIRMAN RYAN: Absolutely. I assume it  
13 would be an iterative process for sure.

14 Jim, does that make sense to you as a path  
15 forward to begin the discussion?

16 MR. KENNEDY: It does, yes.

17 MEMBER WEINER: I think that's a really  
18 good way to start.

19 MR. LARKINS: This committee as had some  
20 discussion of this subject in the past. Remember we  
21 reviewed the BTP associated with this, branch  
22 technical position from a couple of years back --  
23 right -- and so its on the record of providing some  
24 things in this area.

25 And it might be good to go back and pull

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1 up that record. And Mike if you, in our compilation  
2 of documents, if we can make those letter reports  
3 available that the committee has written on this  
4 subject in the last, I think it would be good to sort  
5 of -- and Bill, you're probably familiar with some of  
6 those.

7 MEMBER WEINER: That would be really  
8 useful.

9 MR. LEE: We can take that as an action  
10 and have that available at the next meeting.

11 CHAIRMAN RYAN: Okay.

12 MEMBER HINZE: I'm not sure if Jim has  
13 any ideas or concerns that he has or problems that  
14 arise as you do your job.

15 MR. KENNEDY: Well first, let me add one  
16 thing real quick and then I'll address your question.

17 I'm told that -- and I know that Research  
18 has a Monitoring Strategies Program that might also  
19 have some ideas that can be incorporated into the  
20 white paper.

21 CHAIRMAN RYAN: Excellent, Jim.

22 MEMBER WEINER: Yes, that would be good.

23 MR. KENNEDY: But to address Dr. Hinze's  
24 question. You know we're always interested in doing  
25 things better and certainly Part 61 it was written and

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1 promulgated more than 20 years ago. And we know it  
2 can be improved and made more risk informed than it is  
3 now.

4 And were we to ever do that, we would go  
5 out and talk to the states, for example, who are using  
6 it or might be using it, to licensees and so forth and  
7 get their view on it, but it's a process. And I  
8 certainly think it is appropriate to look at it and  
9 think about where it might be improved and how it  
10 might be improved. And go from there.

11 You know it's a long process in terms of  
12 where the changes might be made and how they might  
13 benefit folks out beyond here who are using it, but,  
14 you know, I think this sounds like a good first step.

15 CHAIRMAN RYAN: That's a good perspective.  
16 When you look back on the siting efforts, no site was  
17 an applicant to the NRC. They were all applicants to  
18 the agreement states.

19 MEMBER WEINER: Yes.

20 MR. LARKINS: Yes. And I think Jim brings  
21 up a very good point because there are probably a  
22 number of key stakeholders in this, you know, states  
23 which have tried to initiate compacts or done some  
24 things with siting.

25 And bringing them in and get the benefit

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1 of their experience, the problems that they went  
2 through. And maybe those would provide the nexus or  
3 hook to making some proposed changes to Part 61.

4 CHAIRMAN RYAN: And you could, you know,  
5 you could look states that were relatively small in  
6 terms of the volumes they were projecting. And some  
7 that are relatively large and, you know, folks there.

8 Massachusetts, for example, is really  
9 focused on non-utility generators. Whereas Illinois  
10 was almost all utility-generated waste and so on. So  
11 you might get a range of opinions based on those  
12 characteristics.

13 MR. LARKINS: And we might even learn  
14 something from the international community. I'm not  
15 sure what's being done in other --

16 CHAIRMAN RYAN: Well, get one example, it  
17 may.

18 MR. LARKINS: Yes.

19 CHAIRMAN RYAN: And so yes, this would be  
20 fruitful. Thanks.

21 Yes, sir?

22 MR. NICHOLSON: Mike, this is Tom  
23 Nicholson. You might also think about contacting the  
24 ITRC. And Tom Schneider and those people. The states  
25 have been very much involved. They've funded, up to

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1 this point, by DOE.

2 But we had a meeting in Reston last April  
3 dealing with the issue of performance monitoring. And  
4 there were quite a few people from DOE, Tom Schneider  
5 from ITRC, and the National Labs there. So we could  
6 provide that information to Jim and coordinate with  
7 Jim.

8 CHAIRMAN RYAN: Tell us a little bit about  
9 what you mean by performance monitoring and what that  
10 is all about.

11 MR. NICHOLSON: Basically we asked the  
12 question why are you monitoring with regard to showing  
13 evidentiary information with regard to the performance  
14 as you've modeled it. So the performance indicators  
15 could be a variety of topics such as you mentioned  
16 earlier groundwater levels. But for us it may be  
17 water contents, water fluxes, concentrations, certain  
18 contaminants.

19 And it's how to understand how that  
20 hydrologic system performs. And then what are the key  
21 indicators that you can both monitor and model.

22 CHAIRMAN RYAN: Yes, exactly.

23 MR. NICHOLSON: So there is that very  
24 strong relationship between the two. And you're  
25 asking questions as how dynamic is the system if I do

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1 model abstraction, which virtually all models do.  
2 Then how am I simplifying and to the point of I may be  
3 losing valuable information and creating uncertainty.

4 CHAIRMAN RYAN: Or just the opposite. Do  
5 you know that your conservative yet reasonable --

6 MR. NICHOLSON: Right.

7 CHAIRMAN RYAN: -- in some way. Have you  
8 gotten to that place. I mean there are other issues,  
9 for example, connecting the surface water hydrology,  
10 the ET cycle with the groundwater and, you know,  
11 there's lots of interesting aspects to that. See,  
12 that's a very fruitful area.

13 MR. NICHOLSON: And in March we're going  
14 to be speaking to you about some research we're doing  
15 in Beltsville --

16 CHAIRMAN RYAN: Yes?

17 MR. NICHOLSON: -- at the ARS that's  
18 looking at some of those issues of performance  
19 indicators for their system.

20 CHAIRMAN RYAN: And, you know, the other  
21 benefit to this, frankly, that I see is that if you're  
22 thinking about a decommissioning situation or waste  
23 disposed in place, those kinds of things, some of  
24 these sorts of concepts might have value in these  
25 other areas where materials are being managed as well.

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1                   MEMBER CLARKE: Tom, did you say you had  
2 a workshop on that recently?

3                   MR. NICHOLSON: Well, we had it last April  
4 over in Reston and the USGS was the most but we had a  
5 lot of people from the DOE labs. We had people such  
6 as Phil Jardine, he's involved in the Navy program  
7 down at Oakridge. We had people like Earl Mattson  
8 from INL, Tom Fogel from the Hanford site. He works  
9 for Hanford site.

10                   And we basically were asking the question  
11 not jut for the NRC but for DOE and EPA. Ron Wilhelm  
12 was also there. And he's from EPA's Office of  
13 Radiation and Indoor Air.

14                   The question is how do you go about  
15 setting up monitoring programs that both inform you as  
16 to the characterization of the site but also key  
17 performance indicators that demonstrate that yes, in  
18 fact, these models are correct. Or they are  
19 reasonable.

20                   MEMBER CLARKE: Were there proceedings?

21                   MR. NICHOLSON: No, there was a series of  
22 papers. I can get you those from the standpoint of  
23 preliminary program in a notebook that was put out by  
24 Florida State University. There was the contract to  
25 the DOE who actually facilitated the meeting.

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1 PARTICIPANT: In the technology group.

2 MR. NICHOLSON: Right, yes.

3 MEMBER CLARKE: You know and that kind of  
4 brings up the next thought as well how do you get that  
5 sort of approach tied into, you know, site  
6 requirements. Or, you know, does that information  
7 flow into how you can make judgments about some of  
8 these criteria that are a little less analytic than  
9 might be easily interpreted and so on.

10 There's lots of potential to make good use  
11 of that information.

12 The other aspect of it, you know thinking  
13 about siting, is that there is some standard for, you  
14 know, saying yet to a site. But then there's also the  
15 thought that if it operates over some period of  
16 decades, you can also have requirement to do exactly  
17 what you're saying, it's how do you improve the  
18 robustness of that for the longer, you know, term  
19 predictability and so on there's some interesting ways  
20 to think about that.

21 CHAIRMAN RYAN: That's all I know.

22 (Laughter.)

23 PARTICIPANT: Good to see you, Bill.

24 CHAIRMAN RYAN: Anything else? Any other  
25 thoughts?

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1 MEMBER WEINER: I think you've covered it.

2 CHAIRMAN RYAN: Thank you.

3 MR. LARKINS: So the path forward if for  
4 you --

5 CHAIRMAN RYAN: I will take a crack at  
6 putting together a draft of maybe an annotated outline  
7 for a white paper. And get it around to members of  
8 the staff. And then we'll take a broader view of how  
9 to get to that effort.

10 MR. LARKINS: Shall we plan on asking some  
11 of the staff to come in in March? Or do you want --

12 MEMBER HINZE: Sure.

13 MR. LARKINS: I'll have something that's  
14 really quick right here on this.

15 MEMBER HINZE: Let's have some  
16 distinction, too, if possible.

17 CHAIRMAN RYAN: Yes, I think as we flush  
18 out the white paper content a little bit more, that  
19 would be great, absolutely.

20 MR. LARKINS: I think sequence-wise, you  
21 might want to interact with the staff first. And then  
22 have the states come in later on.

23 CHAIRMAN RYAN: We're at a point where  
24 rather than jump right into the slides and take a  
25 break, why don't we take a break now until, let's say,

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1 ten minutes to three? And then we'll go ahead and  
2 jump into our slide show.

3 So why don't we go off the record?

4 Do we need to be on the record for the  
5 slide discussion?

6 PARTICIPANT: I don't think so, no.

7 CHAIRMAN RYAN: Okay. So I think that  
8 concludes our need for the transcript today. Thank  
9 you.

10 (Whereupon, the foregoing meeting of the  
11 Nuclear Regulatory Commission Advisory Committee on  
12 Nuclear Waste was concluded at 2:24 p.m.)

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