BLUE RIBBON COMMISSION ON AMERICA'S NUCLEAR FUTURE

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MEETING

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FRIDAY,
DECEMBER 2, 2011

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The Commission convened, at 9:30 a.m., in Salons F and G at the J.W. Marriott Hotel, 1331 Pennsylvania Avenue, N.W., Washington, D.C., Brent Scowcroft and Lee Hamilton, Co-Chairs, presiding.

MEMBERS PRESENT:

LEE HAMILTON, Chair
BRENT SCOWCROFT, Chair
MARK H. AYERS
VICKY A. BAILEY
ALBERT CARNESALE

PETE V. DOMENICI
SUSAN EISENHOWER
CHUCK HAGEL
JONATHAN LASH
ALLISON MACFARLANE
RICHARD A. MESERVE
ERNIE MONIZ

PER PETERSON
PHIL SHARP

ALSO PRESENT:

TIM FRAZIER, Designated Federal Official

PUBLIC COMMENTERS:

GARY HOLLIS

BOB HALSTEAD

DAN BROWN

KARA COLTON

LINDA LEWISTON

ARJUN MAKHIJANI

RON JOHNSON

JUDY TREICHEL

ALEX PAVLAK

NORMAN MEADOW

KAREN MEADOW

EARL POTTER

KEVIN KAMPS

MICHAEL GLAAB

KATHERINE FUCHS

DOMINIQUE FRENCH

GEOFF FETTUS

C-O-N-T-E-N-T-S

C-O-N-T-E-N-T-S (CONTINUED)

C-O-N-T-E-N-T-S (CONTINUED)

C-O-N-T-E-N-T-S (CONTINUED)

Public Comment (Continued)

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

9:31 a.m.

MR. FRAZIER: Okay, if I could have everyone's attention, we are going to get started.

Commissioners, please return to your seat. The rest of you sit down.

I want to thank you all for coming today for this full Commission open meeting. We have most of the Commissioners here. Jonathan Lash is delayed, but he will be here as his flight gets in.

Today is an important day for us. We are going to hear from the Subcommittees as they review the comments and make perhaps suggestions on the Subcommittee reports, which will then roll into the final report.

So, with that -- by the way, my name is Tim Frazier. I am Designated Federal Officer.

If you are ready, Congressman Hamilton?

CHAIR HAMILTON: Good morning to all of you, and thank you very much for coming to our December 2nd meeting.

The purpose of this meeting of the Blue Ribbon Commission on America's Nuclear Future is twofold. First, we will begin with a discussion of the recurring comments received on the Draft Report and of proposed responses from the relevant Subcommittees.

Second, this afternoon we will receive the recommendation of the Ad Hoc Committee that we established to look into the issue of commingling of defense and commercial wastes.

The presentation materials used today will be posted on the Commission website at www.brc.gov.

As always, we will end our meeting by hearing from any member of the audience who wishes to speak. A sign-up sheet for the public comment period is available now. It will close at 1:30 p.m. We have allowed more

than an hour for public comment and we look forward to hearing what people have to say.

Speakers will be limited to no more than five minutes, but, of course, the amount of time allotted to each speaker will depend on the number of people who wish to speak.

Before we hear from our Subcommittee Co-Chairs, I will take a moment to thank the many thousands really of individuals and organizations who provided comment on the Commission's Draft Report over the last several weeks. We received many very helpful and very thoughtful comments, and we appreciate the many hours that people have dedicated to reviewing our work.

Of course, we cannot review every one of those comments today, but we will use this opportunity to respond to many of the major themes that emerge from our review of the body of public comment.

We should note that two of the

most commonly-heard messages in the public comments fall outside the scope of the Commission's review. The first is the view expressed by many that the Commission should take its recommendation about the need for expeditiously developing a geologic repository one step further and recommend that Yucca Mountain be that repository.

But in keeping with the direction we have received from the Secretary of Energy, we have not rendered an opinion on the suitability of the Yucca Mountain site or the appropriateness of the request to withdraw the license application for Yucca Mountain.

The second is the call for the Commission to urge the shutdown of the nation's nuclear power plants until a solution to the waste issue at hand. As we have said in past meetings, the Commission was not asked to make recommendations regarding the future use of nuclear power in the United States. We will, therefore, not offer any judgment about

the appropriate role of nuclear power in the nation's future energy supply mix.

As directed by the Secretary, we have offered draft recommendations related to DOE's ongoing nuclear energy R&D agenda, but those recommendations do not call for or presume a particular level of nuclear energy generation in the United States.

We presently have more than 65,000 metric tons of spent fuel in storage across the nation, and our Commission is committed to developing a disposal strategy for that fuel and other high-level wastes regardless of the future trajectory of nuclear power in the United States.

With that, by way of introduction, I will open the floor to the Commissioners for any statement or comment they wish to make before we hear from the Subcommittee Co-Chairs, if there are any such comments.

Yes, Per?

MEMBER PETERSON: Congressman

Hamilton, I would like to echo your statement about appreciation for the input that we have received from many different sources and comments on our draft reports.

We did hold a series of meetings in different parts of the country, in particular, hearing from representatives from state and local governments. I had the opportunity to attend two of those meetings, the ones in Atlanta and Denver. And then, because we have the tremendous technology today for broadcasting meetings, was able to listen in on the others by phone.

And I just want to also express my appreciation. An enormous amount of effort went into those meetings by people bringing additional insights and information to us. And it was very helpful to me to be able to attend and to listen to those meetings and, in particular, to hear the perspectives from state and local representatives about how to manage the problems that we are faced with.

So, I think that the other people that I would like to compliment at this point is the staff of the Commission who put an enormous amount of effort into reviewing these comments and making sure that we were able to see them as well and integrating them into a set of themes that I think we will try to present today.

But I just want to assure everybody that this effort that has been placed is very much appreciated by me and that I think it is important and it has allowed us to make some important additional changes in our recommendations that will go into the final report.

Thank you.

CHAIR HAMILTON: Thank you, Per, for your comments. They're right on the mark, of course.

These comments we received have been gone over in very, very great detail by staff and by some of the Commissioners. Most

of us I think have had a blizzard of emails on them over a period of weeks. We very much appreciate the effort that was made.

You're right, too, of course, to compliment the staff. They have done a wonderful job in going through all of that and distilling it for us.

Al, did you have a comment?

MEMBER CARNESALE: I just wanted to add briefly the comment you made about Yucca Mountain, so that it is clear to all. It is not only that we did not consider the suitability of Yucca Mountain, we did not consider the suitability of any sites.

CHAIR HAMILTON: That's true, yes.

MEMBER CARNESALE: We were specifically charged not to be a site-selection committee.

CHAIR HAMILTON: Yes.

MEMBER CARNESALE: And that applies to any other potential site as well as to Yucca Mountain. I think that is a useful

clarification.

CHAIR HAMILTON: It is, indeed. Thank you very much.

Any further comments, General, before we turn to the Subcommittee recommendations?

I'm sorry, yes, Senator, Pete.

MEMBER DOMENICI: I want to state for the entire Commission and the Co-Chairs, I personally think the most important part of the report, and the part that we have to be most concerned about, is the role of the local government and the state government and the United States as they attempt to follow the proposal we have before us.

That proposal says this is a consensual arrangement. As I read it, we start with the locality wanting it or we aren't rolling the dice.

CHAIR HAMILTON: Yes.

MEMBER DOMENICI: But they start it, but it is very important that we all

understand before we are finished just what the relationship is thereafter.

CHAIR HAMILTON: Yes.

MEMBER DOMENICI: They state they want it, and then how much authority does the state have over them and it, and what is the role of the federal government with them? That is the most important thing because everything else can rock along beautifully, but if you get stymied there with a fight that goes to court and then appealed and re-appealed -- we have been part of it. And, of course, we ended up with a wonderful consensual agreement that you have seen in WIPP, but it was preceded by many, many months of absolute argument because nobody knew where the rights and responsibilities were.

So, I hope, and I am asking now, that when we get to the work here today that is in this area of the municipality or the local community versus the state versus the federal government, that we pay attention

again to it if, for no other reason, than I would like to have it discussed one more time to make sure everybody knows out there what it is.

Thank you, Mr. Chairman.

CHAIR HAMILTON: That is a very important comment, Pete. And, of course, you have a great deal of experience there, and your State has kind of set the pattern as to how things ought to be done here. We appreciate your leadership.

Are there other comments?

(No response.)

Okay. We will move, then, to the Subcommittee reports of the Co-Chairmen. They will brief the Commission on the major comments that they have received in their areas of the Commission's investigation and the proposes responses.

We will ask the Subcommittee Co-Chairmen to speak from their seats, so we can promote discussion.

The first one reporting will be the Transportation and Storage Subcommittee. That is Commissioners Meserve and Sharp. My understanding, Dick, is that Phil is not able to join us from Boston. Commissioner Sharp has a serious health problem within his family, not him, but within the family, and is not able to be with us today.

So, Dick, the burden falls all on you, and we thank you very much.

MEMBER MESERVE: Yes, we had hoped that Phil would be able to join us be telephone, but we have learned this morning that proves to be impossible.

As Chairman Hamilton has indicated, I am going to be briefing on the Transportation and Storage Subcommittee. And I've already destroyed the slides.

(Laughter.)

Could somebody give me a hand?

As I think you all know, the Subcommittee report was issued publicly on May

31st. We received comments from a wide variety of stakeholders, I mean I think the full spectrum of stakeholders, on that report.

Of course, the conclusions that we had drawn were also embodied in the full Committee report that was issued on July 29th. As you have indicated, there were thousands of comments that were received on that, some of which obviously reflect on the work and jurisdiction of the Transportation and Storage Subcommittee.

Also, as Per has indicated, there were a variety of public meetings in which substantial additional input was received.

I think that I would characterize the overall thrust of the comments, a vast preponderance of the comments were very supportive of the main themes that were in our draft report, although, obviously, we also received some specific comments on individual items that were suggested that we make modifications. And we have reviewed those and

have suggested some changes.

The way we accomplished that effort was that the Transportation and Storage Committee had a conference call interaction, and then substantial subsequent email interaction, in order to start to move towards a revision of the Draft Report that we had prepared, which is a work that is still in progress, but I think we have substantial consensus within the group that constitutes the Subcommittee as to our reaction to the comments that we received.

This slide and the next one sort of define a whole series of the specific items that we had addressed. Rather than have me sort of walk through each of those individually right now, because I am going to come back to them and discuss of them individually, let's just jump to this slide, and I am going to deal with each of the items that were on the second and the third slides.

Of course, as our work of the

Commission was underway, the terrible events in Japan occurred on March 11th with the earthquake and tsunami and its impacts, in particular, on the Fukushima Daiichi nuclear plants.

As you will recall, we did have some comment on that matter in our report as to the need to learn the lessons from Fukushima. We also recommended that the National Academy of Sciences be invited to advise on the full suite of lessons that arose from Fukushima as some of the input on how the U.S. should respond.

The premise for that recommendation was, in part, the understanding that we had in the United States that there had been substantial impacts from the tsunami on the spent-fuel pools, and that it was believed that there had been a substantial draindown event and damage to the fuel as a result of that.

Now there are going to be huge

lessons and important lessons that are learned from Fukushima, and it will take some time until all of those lessons are revealed. There is a lot of work and a lot of mysteries that remain to be revealed. But most of them don't relate to the part of the problem that is the one that is within the scope of this Commission.

There are some apparent lessons, obvious lessons, I think that came out from the experience that we did not understand what was going on in the spent-fuel pools. That was as the result of a lack of appropriate instrumentation as to water levels and temperature in the spent-fuel pools. The Japanese, obviously, had very severe problems in introducing makeup water into the spent-fuel pools.

But, as we have learned in recent months, they evidently were sufficiently successful with doing that, that there was no substantial damage to the fuel, and apparently

the water levels never dropped down below the level of the fuel. So, the latest information is that the impact of the Fukushima event on spent-fuel pools is somewhat less than we anticipated originally.

The NRC has evaluated this, and they have, as an early action item, been dealing with the need for increased instrumentation. And before Fukushima, the NRA, for terrorism-related reasons, had substantial requirements to have redundant and diverse ways in which to introduce makeup water into spent-fuel pools. And those may well be strengthened as a result of the Fukushima accident.

But it is unclear at this moment whether there is much more to be learned from Fukushima with regard to spent-fuel pools because of the fact that not much happened, as it has been revealed.

There are issues that remain. One of them, of course, is the issue of whether

fuel should be withdrawn from the pools and put in dry storage. We have more densely-packed fuel in spent-fuel pools in the United States than is typical in Japanese spent-fuel pools, which means there is greater heat load and the possibility of danger arises. So, there is an issue that is there about whether fuel should be removed from the pools and put into dry cask storage earlier than is customarily the case.

Of course, the fuel as it comes out of the reactor is very hot and would have to go into a pool for some time anyway, but the issue would be as to the older fuel, whether it should be removed from pools.

That is an issue that the NRC has identified that is one that is of further consideration, but it is not clear whether Fukushima is going to provide much input on that issue.

We conclude that the NRC's evaluation of the processes appear to be

appropriate with regard to this issue, and we should reflect, have the reports be modified to reflect the somewhat changed factual circumstances.

We had also, as I mentioned, recommended an Academy report that would be undertaken in this area. I think that that report may well still be appropriate, not so much for this issue, but for the many other issues that arise from Fukushima that it could provide guidance. The timing of that, of course, as we said in our original draft, would depend on sufficient information being available as to the accident progression. And that is something that is still a matter that is being revealed as we work.

But, in any event, so these are the sorts of modifications that we suggest making in the report. They don't change the recommendations very much, but they do change the factual story that surrounds Fukushima somewhat from the way we had described it

because we have learned a lot more in the months since we issued our Draft Report.

We did receive, also, some comments that we should provide greater specificity as to how the storage will be handled, particularly as to what sort of capacity would be necessary for the storage facilities that we had recommended, how long it would be there, and so forth.

And we concluded that this was an area in which flexibility remains essential, that a common theme of our report is a need to adapt to circumstances, to take opportunities as they arise and as they are needed, but that to sort of lay down and imagine we can lay down appropriately a complete roadmap as to how exactly things should happen and when they are going to happen and at what volumes is, quite frankly, completely inconsistent with the main theme of our report, which is one of adapting and learning as one proceeds. So, on this issue, we do not suggest that there be a

change that is made.

We had also made some comments about the fact that there are a variety of different waste management and storage systems, particularly the casks, the size of casks, and so forth, that are in use today, and the diversity may well present some challenges down the road because of possible incompatibility of what people are doing with what we eventually will need for storage or disposal and transportation.

And so, there is a definite value in discussion standardization. One of the problems with defining it now is exactly how we should standardize. What route we should take is unclear, and we have emphasized adaptability as being an important factor.

So, we have softened the report somewhat to urge standardization, indicate that it is a very desirable outcome, but recognize that this is something that has got to reach an accommodation of the interests of

the various stakeholders that are involved, and urge that some mutual accommodation of an appropriate track be something that is resolved and addressed.

We also had received comments where we had urged at various places that we should move expeditiously to establish some centralized storage locations, for example, and that they should be done promptly. It should be something to which attention was given at an early stage.

And some of the commenters apparently interpreted that language to suggest that we should rush to do this and that that might somehow compromise safety. It is hard for me to imagine that anything that occurs with spent fuel could be seen as happening with undue haste. But we carefully read that part of our report, and we fully concur that safety has to be the highest priority. We did not see our language as suggesting anything different.

So, as to our Subcommittee report, we didn't see the need for emphasis because we reemphasize over and over the importance of safety. But I think it is an issue as we go forward in our Commission report to make sure to be sensitive to this was an issue and there was a possible misunderstanding. And we should make sure that there is no misunderstanding on the point that safety and security are prime criteria.

We received a very large number of comments on the case for hardened onsite storage. Now, as you will recall, what we are talking about there is that the way the system operates now for dry cask storage, they go into these massive, the limited amounts of spent fuel, once it is of a certain age, goes into these massive casks. Some of us have visited sites, and I think maybe all of us have visited sites and seen these massive structures in which the spent fuel is stored.

And the suggestion is that there

should be an additional structure, heavily-reinforced, sort of bunkered structure that is put over those casks to provide additional security from them in order to make them even more immune to a possible terrorist attack.

And so, we received substantial -- there is a community for which this is a very important issue; it is one we should be sensitive to -- urging that we adopt or urged the adaptation of this so-called HOSS approach for the storage of fuel.

This is a matter in which there is some factual dispute. There is concern expressed by some that the addition of a structure over the casks, in fact, could increase risk because of the need for a flow of air through the cask as the means, the passive means, for assuring cooling and the danger that you could have a collapse of the structure that is subject to attack on top of the cask, and it would disrupt the flow of the air through the cask. And you would end up

with defeating part of the function for cooling the cask with this structure.

Of course, there are other sensitive issues as to the nature of how one would attack these casks, what the consequences of an attack would be, what the tradeoffs would be in terms of costs and benefits, and so forth.

We in our report have suggested that there is an ongoing process within the Nuclear Regulatory Commission to review this and a whole series of other security issues related to spent fuel. Some of us had the benefit of a classified briefing on the work that has been done specifically related to the vulnerability of casks and how they would fare, and what the consequences would be if there were a terrorist attack.

We don't see ourselves as being in the position where we have the capacity to really second-guess that process. It is one that is subject to evaluation. It is one

where there is a lot of classified work that has been done and is being done.

And so, our suggestion for dealing with that issue is to raise it as an issue, to recognize that it is a matter that is under evaluation at the NRC, and to suggest that that process be allowed to complete its process going forward, and determine how exactly to deal with that issue.

We also received questions or comments about the portions of our report that dealt with the transportation system. On reflection of this, this was a very prevalent comment and there were concerns that we had perhaps treated the transportation issue more lightly than we should have.

And let me say that, on reflection, the Transportation and Storage Committee agrees with that comment, that we had not perhaps dealt with this with the depth that might be appropriate to the subject.

And let me say, in defense of the

Committee, that there was quite a comprehensive recent study by the National Academy of Sciences, the Going the Distance Study, which had done a thorough evaluation of the transportation issue. And, of course, the record of transportation has been excellent so far. That is not to say that one doesn't need to continue to work at it, but it was something where we had the benefit of a very comprehensive evaluation that had been done, and we basically referred to that in our report.

But, on reflection on this comment, we do believe that it is appropriate that the report be expanded to encompass more of the material that we have drawn from the Academy report. And as we will come to in a minute, we do propose, given the importance of the transportation system and the overall process, that there be a recommendation that we add to our Commission report as one of the prominent recommendations. We have seven

major recommendations today. None of them deal with transportation.

And the proposal we will offer is that the transportation which the Subcommittee has come up with with regard to transportation be one that the full Commission consider for addition to the overall report of the Commission.

We did receive some comments as well that we should say some words about how recycling and reprocessing should be included as an element of the consolidated storage facilities that we had urged being placed. They noted that having the opportunity to have such facilities be co-located could provide some efficiencies and perhaps some security advantages. It could be attractive to a particular local community to have that opportunity.

We see that, first of all, that was beyond the jurisdiction of our Subcommittee. But, beyond that, it is the

sort of issue that I think adaptability and accommodation needs to be reached with the local community and, of course, with the broader issue that we deal with in our other Subcommittee of about we should approach reprocessing and recycling.

So, this is not an area where, let me say, obviously, having recycling or reprocessing co-located with a storage facility is not essential for accomplishing the storage mission. So, this was not an area that we proposed that there be any change to the report.

We did receive some comments on a matter that is a narrow matter, but an important one. That is that one of the basically developments in the usage of nuclear power in the United States is the process of keeping the fuel in the reactor at power for longer periods of time and so-called higher burnup of the fuel. That changes the character of the spent fuel and, therefore,

has impacts on the risks associated with moving it about.

And as it turns out, the NRC regulations, as they are currently written, deal with burnup of certain levels that are not yet up to the levels where, in fact, some of the utilities are currently burning the fuel. So, this is a current issue. It is one that has to be dealt with as we move fuel from reactor sites to either disposal or to a storage site. And we do suggest that the report should be modified to reflect the fact that regulatory changes in this area are needed.

Let me just say, parenthetically -- and this is noted in the second bullet there -- this is an issue that the NRC is examining as part of a rather comprehensive reexamination of how it is handling the regulatory requirements surrounding spent fuel.

We did receive some comments about

the issue of the stranded fuel dilemma was overstated. As you recall, we have a number and made the point that there are nine sites in the United States that no longer have operating reactors, but do continue to have spent fuel that is present at the reactors. And absent a centralized storage facility or a disposal facility, that material is condemned to stay there, perhaps for extended periods of time.

And that is just one of the arguments that we had made in support of the notion that a centralized storage would be something that we should consider, particularly as we envision within a few decades there are going to be a lot more sites where the plants are going to be shut down and there will be more and more fuel that is at sites where there is nothing else going on.

One of the comments we had suggested is that a proposal has been to deal with this, that the DOE take title to the

fuel, but keeping it at the reactor sites. This is a proposal that has been made.

We do not have the view that the stranded fuel is an urgent safety risk. We had said that in the report. We continue to believe that it involves cost, prevents the usage of land that could be put to other beneficial uses. There is taxpayer liability associated with it. And as I have noted, it is a problem that is going to grow over time.

So, we do think this stranded fuel is a problem and it is going to be a growing problem, but we don't think that taking title is the solution. It actually doesn't solve anything. The fuel will stay right where it is. And, in fact, it may well not affect the liability at all because of the contractual commitments associated with the obligation to remove the fuel.

We also had received comments that our discussion of cost for consolidated storage was unclear or incorrect in some

respects. As you will recall, we had indicated that was at least the possibility that consolidated storage, in fact, could be a cheaper path by which to proceed as a result of the fact that, if we had fuel that is remaining at shutdown reactor sites all over the country, there is a very large security cost that has to be met at each of those sites. It is not a significant cost when it is still an operating reactor because there has to be a security force and security capability that is there for the reactor, but if all you are doing is guarding the fuel, then the whole cost has to be borne by the fuel. And so, there were some possible cost advantages that would come from having a consolidated storage.

But let me say that we did have a paper that is available on our website that went through all of the various cost studies that have been made on this issue. We believe that all of those studies could be subject to

some criticism. There are different assumptions that are made, and some of them could well be questioned.

But our main argument for consolidated storage did not turn on the cost issue. We saw other benefits that we have discussed in both our Subcommittee report and the Commission report about the benefits of the overall system of having a consolidated storage, cost being only one of the possible benefits.

And moreover, a challenge to the cost studies is somewhat in the idea that you are going to go whole hog on a full-scale storage facility right at the beginning, and all of the costs are going to be associated with that. This was an area where we have, in fact, urged that there be the same sort of flexibility and adaptability in learning-as-you-go, building-as-you-go sort of approach.

So, we have proposed to keep the main thrust of our report where it is, but to

add additional discussion of the cost findings and the justifications for the consolidated storage recommendation.

We had received some comments about using existing DOE, Navy, and other federal facilities for storage. That is one that we saw as being outside the scope. As Al has indicated in his comments, we are not a siting Commission. So, we don't propose any modification of that.

There was a suggestion that the report was somewhat skimpy in its discussion about how dry storage works, what types of facilities are, and more descriptions of them would be useful to a person who is not familiar with them. And so, we have proposed to add some further discussion, both the horizontal and vertical storage systems, as part of the report.

And then, there is this problem that we have spent extensive time discussing, about the fact that there is a linkage between

storage and disposal and a concern that, if we establish a storage facility, it will end up being a disposal facility or being effectively a de facto disposal facility because we might never have a disposal facility.

I think that this is something that we have weighed very heavily, the entire Commission has weighed very heavily in our discussions previously, as you know. I think that we have emphasized over and over again that we do not think that storage and disposal should be seen as alternatives to each other, that proceeding to establish appropriate disposal facilities is something that is essential, regardless of how we proceed with disposal.

And so, we don't see this as an area where we need to add to the report, but, again, I think we do need to make sure that we emphasize in our final report the fact that disposal has got to be done, it is an important issue, and we need to proceed with

that, regardless of how we deal with the storage issue.

Now I had mentioned earlier that we had received a large number of comments about the inadequacy of our discussion of transportation, and which I have acknowledged was somewhat the result of the fact that we were very highly-dependent on the quite comprehensive study by the Academy's Going the Distance Report, issued just a few years ago.

But we fully agree with the comments that preparing for, planning for, working out the arrangements that are necessary in order to accomplish the transportation function effectively in a way that meets the public acceptance is an enormously-important issue, and it is something that you need to be thinking of. You don't think of this just as an add-on. This is something you need to think up from the very beginning, as you are contemplating disposal.

And so, as a result of that, we have suggested that we consider a new recommendation on transportation that be incorporated in our main report. This is drawn from the Subcommittee report. And let me just read it.

"Prompt initiation of programs to prepare for future large-scale transport of spent nuclear fuel and high-level waste consolidated storage and disposal facilities, including implementing transportation-related recommendations issued by the National Academies in 2006, undertaking planning activities with potentially-affected states and tribes, and providing funding and technical assistance for related activities."

That is a proposal that we make to you, and this probably isn't the right forum in which to do the precise editing of the language, but you can see the general thrust that we are proposing as something for your consideration for the Commission report.

Mr. Co-Chairmen, that completes my summary of the work of the Transportation and Storage Committee.

Let me invite any of the other members of the Committee who would like to add some thoughts to correct or supplement my comments.

CHAIR HAMILTON: Dick, let me thank you and Phil for the very careful way you have gone through these comments and reacted to them, and given us a quite comprehensive report. Thank you very much.

So, the question really is on the recommendation, and I will ask the Commissioners if they have any objection to this recommendation, understanding, as he said, that maybe the precise wording of it might be altered.

Dick, one of the things I noticed is the word "safety" does not appear in that language. I wondered if you said "prompt initiation of programs to prepare for future

safe large-scale transport". I'm sure it is included in the recommendations, but I think using the word "safe" might be helpful. Is that all right?

MEMBER MESERVE: That is certainly consistent with our intention.

CHAIR HAMILTON: Yes. Okay.

Any other comments? Let's see, Pete and then Per.

MEMBER DOMENICI: Who pays for this?

MEMBER MESERVE: There actually is funding that is already part of the nuclear waste disposal act for the federal government to pay for this work that is being part of the elements for being successful in transport. And so, it is part of existing statute, and I think my presumption would be that this would be something that would carry over to any amendment of that statute that would occur in the future.

MEMBER DOMENICI: I would hope we

would make that clear.

MEMBER MESERVE: It is in the text that we have in our report on the draft. We didn't incorporate that in the recommendation, but the surrounding text does make that point.

MEMBER DOMENICI: My second question is similar. Who is charged by this language with doing this kind of --

MEMBER MESERVE: This is a partial sentence here, obviously. The idea is that this new entity that we propose to be created --

MEMBER DOMENICI: The corporation?

MEMBER MESERVE: -- the corporation would have responsibility, incident to its accomplishing its role on storage and disposal, to have the responsibility as well to make sure that transportation is done appropriately. So, this would be something, as I see it, would be something that the new corporation would be.

This is a fragment of a sentence

here, I now see as I look at it, that is put on the slide. And so, it doesn't capture the context in which we have it in the Draft Report.

CHAIR HAMILTON: Per, and then Vicky. Per?

MEMBER PETERSON: Thanks.

I also have not had the opportunity to read the Transportation and Storage Subcommittee report because I am not on that Subcommittee. I do think it is important to assure that it is integrated with the other recommendations.

In particular, before starting large-scale transportation, it is important to perform it at smaller scale. This is one of the additional arguments for moving spent fuel from shutdown reactor sites, because that provides the opportunity at smaller scale to demonstrate safe operation and learn from experience.

I also would like to go back and

reemphasize that to address the taxpayer liability, the courts have made it very clear that the only way to perform on the contracts is to begin to move the fuel from the sites, that taking title at the sites will not end the taxpayer liability.

And that is another reason why I think it is important for us to move towards removing spent fuel from shutdown reactor sites, because it addresses taxpayer liability and it gives experience at small scale that then could be applied, which I think in many respects may be even more important than having further studies about how to do this safely, but to get the experience at smaller scale.

MEMBER MESERVE: I fully agree. That is an element that is emphasized in our report. It is part of the benefit of doing storage, is that you develop experience that is going to be relevant as you get to a larger-scale operation for disposal.

CHAIR HAMILTON: Vicky?

MEMBER BAILEY: Dick, I just simply want to be supportive of the proposed new key recommendation on transportation. It is something that we heard at the regional meetings, and it was articulated very well by someone actually from my own State of Indiana.

But to the extent that this is a major concern, and the issue of route selection and the fact that we should give states ample lead time, is why we have raised this to the level of a recommendation. The condition of railroads across the country, inspection of those railroads I think is very key. Just like the interstate highway, the railroads will be very key to the transportation system for nuclear waste. So, I am extremely supportive of this recommendation.

CHAIR HAMILTON: Allison?

MEMBER MACFARLANE: Can we move off of the transportation issue now and talk

about the whole report? I have a comment on another --

CHAIR HAMILTON: Sure.

MEMBER MACFARLANE: -- part of the Transportation and Storage report.

But, first, let me say that I am really glad to see all the hard work that is gone into revising the transportation and storage report.

Let me echo Per's comments earlier on that the found these regional meetings really useful and Vicky as well. I found them incredibly useful, too. It was really good to get the feedback in person and to have some discussions more informally with folks on these issues. I think it really helped clarify what some of the issues were, and certainly the transportation issue was one that came up at a couple of the meetings that I attended.

And I would like to also applaud all the members of the public and all the

people who commented and took the time to make these thoughtful comments.

Let me say that, in attending these meetings, one of the comments that I heard over and over was about this issue that you talked early on about, Dick, on de-densification of the spent-fuel pools. This was a significant issue for a number of people.

I understood it as separate from this overall HOSS concept. It seemed to be part of the HOSS concept, but there was sort of a separate discussion around this issue.

And given that there is a recent Royal Society report looking at the nuclear fuel cycle, they made a specific recommendation on this particular issue which says -- let me quote it -- "The amount of spent fuel stored in ponds in the vicinity of reactors should be minimized by removing spent fuel as early as feasible for interim storage elsewhere, whether onsite or offsite."

Given that, given these comments, and given that the previous National Academy report on spent fuel that was done in 2004 and 2006, classified and non-classified versions, where there was no explicit request for guidance on whether to increase the rate of removal of spent fuel from the pools, I would like to suggest -- sorry, it has been long-winded -- I would like to suggest that we expand the scope of the National Academy study that is requested in this Transportation and Storage Subcommittee that is on Fukushima to include an analysis of moving the spent fuel out of the pools more rapidly.

I think that this would provide public assurance that not just the Nuclear Regulatory Commission is looking at this issue, but others are as well. I think that it is not completely unreasonable to request such a thing.

So, that would be my request.

MEMBER MESERVE: This issue has

been raised as a post-Fukushima issue to be addressed. I think that is consistent with our recommendation that there be an Academy study, that this could well be one of the issues that they might examine.

CHAIR HAMILTON: Any further questions?

MEMBER DOMENICI: Mr. Chairman?

CHAIR HAMILTON: Pete? Per, are you seeking recognition? All right, Pete and then Per.

MEMBER DOMENICI: I didn't hear your comments. Did you say you accept the amendment?

MEMBER MESERVE: I said that that suggestion that the Academy study look at the density of the packing of the fuel in the spent-fuel pools is something that has been raised as a post-Fukushima element. We had suggested the Academy look at that, at the Fukushima lessons learned. I think that Allison's recommendation is within the scope

of what we thought the Academy might well do.

MEMBER DOMENICI: So, you are accepting the --

MEMBER MESERVE: So, I am accepting the suggestion that the Academy study might well include the issue that Allison has raised.

CHAIR HAMILTON: Per?

MEMBER DOMENICI: I have no --

CHAIR HAMILTON: Oh, I'm sorry, Pete.

MEMBER DOMENICI: I am not going to make an objection, but I do want to comment that, as one who has participated in both transportation of waste, almost high-level, in a very regular manner, very, very big transportation contracts through my State, and as I view these last efforts, I hope we are aware that those who oppose things out there look for any little thing to delay or litigate. We ought to watch how much language we add to this report that gives that kind of

activity substance out there in the real world, because it is out there.

I have no objection to this, but I do believe that you already said what was to be said about the water and the spent-fuel rods in the ponds. The findings that you made are really the most significant and important part, without question, and the rest to be done and people are to think about other things, but you have already concluded that there is no urgency in moving them.

MEMBER MESERVE: That's correct.

MEMBER DOMENICI: That is correct?

MEMBER MESERVE: There's no urgency. We did not see -- what we saw would not suggest there was urgency in this matter. But it is something that is worth considering and evaluation. The NRC acknowledges that.

MEMBER DOMENICI: That is our report and that is our conclusion when we vote for it, right?

MEMBER MESERVE: That's correct.

MEMBER DOMENICI: I am not going to object, but I just wanted to insert my own thoughts about it.

Thank you.

CHAIR HAMILTON: Per?

MEMBER PETERSON: I would like to also endorse Allison's comments with respect to the National Academy study that has been recommended. I think that it is valuable, given what has happened in Japan and the importance of this set of issues around assuring safety and security of spent fuel, to have this independent study performed.

But I also think it is important that the Nuclear Regulatory Commission is taking early actions on these issues associated with the ability to monitor inventories of water in pools and to assure that there is adequate means to make up water in pools expeditiously.

Again, the National Academy study that has been recommended I think is going to

be important in terms of providing additional confidence that these issues have been looked at carefully and that the storage safety is appropriate. So, this is something I also would like to endorse.

CHAIR HAMILTON: Any further comments?

(No response.)

Dick, I would ask that you work with the staff so that the language of this is translated in such a way that it is consistent with the language in the Executive Summary, where we have very brief descriptions of the recommendation and then several paragraphs of explanation. We will leave that pretty much up to you, but it is very clear that the Commissioners accept with the modifications indicated your recommendation.

Okay. Now we are to move to --

MEMBER DOMENICI: Excuse me.

CHAIR HAMILTON: Oh, I'm sorry, Pete.

MEMBER DOMENICI: Mr. Chairman, excuse me for my lapses today. I apologize.

I wanted to engage in a conversation with Dick, if I could.

Dr. Meserve, that section, prompt initiation of programs to prepare for future large-scale transport, let me just ask: let's assume laws had been past by the Congress that included that language and included the rest of the things that you have talked about on transportation, and we find a site. City X comes forward and says, "I want to answer. I want to be one." And they proceed down the line, and they are moving everything.

Can somebody come along and say, "Wait, you can't do anything because you have not been prompt in the initiation of programs to prepare large-scale transport."? Is that a condition to proceeding with the program we have in mind of site location based on consent and moving ahead? Do you have to have that? And can somebody test that against what we are

doing?

MEMBER MESERVE: It was not our intent to have this create an obstacle to the achievement of disposal. Rather, it is our intent to recognize having thought through the transportation and having the capacity to work through all the issues is essential to be able to have a successful disposal site. So, that is the context in which this recommendation is made. It is not to create a barrier. It is actually to help ensure success in being able to go forward.

MEMBER DOMENICI: If, in fact the federal government or the entity charged is doing this -- what if they are not doing this? What if they don't do this?

MEMBER MESERVE: Well, our fear is not that it would be a legal challenge, but that if the new corporation failed to think through the transportation issue early, our concern is that they would fail to be able to be successful in establishing a disposal site,

that you need to worry about transportation because a lot of people are affected by or believe they might be affected by transportation as a result of fuel that is moving down the highways or on the railroad lines. The idea is think about, the whole thrust of this is to think about this early and prepare for it because you aren't going to succeed if you don't prepare for it.

MEMBER DOMENICI: I want to make it clear for the record that I am supporting it only on the premise that, in fact, there is a desire on the part of this Commission that this kind of study go on, that it take place by the United States, but not that if you find a site, that you then have to take whatever time is necessary to make sure there is a program of this type. You already have language in your report on the transportation, and it does not include these studies.

I don't know how that is going to be worked out. But from my standpoint, the

studies are not precursors to the establishment of a site. And I think Dick is saying that. Isn't that correct?

MEMBER MESERVE: That's correct.

MEMBER DOMENICI: All right. Thank you.

CHAIR HAMILTON: Okay. Anything?

(No response.)

Dick, thank you very much for an excellent presentation.

Now, under the agenda, we are to move to the Disposal Subcommittee, but we still do not know exactly where Commissioner Lash is. He is, we hope, in route from Miami.

So, we would move at this time to the Reactor and Fuel Cycle Subcommittee. I understand that both Per and Pete are prepared to do that.

I might also say the agenda calls for a break, but not for another 15 or 20 minutes. So, Per, if it is okay, let's proceed now. Is that all right with you?

MEMBER PETERSON: That's all right, yes.

CHAIR HAMILTON: Pete, is that okay, Pete, with you?

MEMBER DOMENICI: That's fine, Mr. Chairman.

CHAIR HAMILTON: All right, and we will go ahead, and then maybe in 20 or so minutes we will take a break. Okay.

Who's up here?

MEMBER DOMENICI: I am going to just take the first slide and then I'm turning it over to him.

CHAIR HAMILTON: Okay, Pete, you're recognized.

MEMBER DOMENICI: All right. I am going to make a comment that is included on slide 1, if you are ready. If you are not, I am going to read it anyway because you can get it from me.

You have already heard from the other Subcommittee, the first one. And I want

to reiterate that the process we used, we used the same process that they used, except to say that we did receive many public comments which we considered very closely as we revised our report.

We thank you. Thank you's go out to those of you who took the time to provide your responses and your input.

My Co-Chairman, Dr. Per Peterson, will walk you through the main comments that we received and how we took these comments into account.

Before he does that, let me give you a little preview and a highlight of some of the issues that I think are particularly important. In all of the comments we received, there was broad support for continued research in advanced nuclear technologies and fuel cycles. We can say that unequivocally.

Our Subcommittee's main recommendation is that the United States

provide stable, long-term support for R&D efforts in order to maintain a U.S. leadership role in nuclear technology. To date, the U.S. has been a leader because of the strengths of its existing research and development of infrastructure, particularly the National Labs like Los Alamos and Sandia.

Our revised report more clearly affirms the strategic importance of existing U.S. facilities. These facilities and the scientists who work there are irreplaceable and will be critical to our country's continued R&D efforts.

Having made that summary statement, Dr. Peterson will continue with the presentation. I thank you for listening.

MEMBER PETERSON: Thank you, Senator.

So, what I will do is to cover, first, overview of the major themes in the public comment that we received on the Draft Report and then to discuss some of the changes

and methods of addressing those comments that we have implemented.

So, the first point that I think is important is that we have received a very wide range of different comments and perspectives about what the future role of nuclear energy should be and what the future of the nuclear fuel cycle should be. And, in fact, this is an area where clearly in our nation we do not have a consensus about what should happen.

These comments range from immediate efforts to adopt a closed fuel cycle as a part of an expanded use of nuclear energy to comments about avoiding the use of reprocessing and maintaining a once-through fuel cycle, to comments that recommended prompt shutdown of reactors and stopping the generation of spent fuel.

So, this range of perspectives is something that I think is important for us to take into account because these are deeply-

and firmly-held beliefs by many different people that are quite in disagreement. I think that, in the end, the recommendations that we have with relationship to research and development are consistent with a middle ground that is appropriate for our nation to take.

In fact, this does reflect the fact that a major fraction of comments that we receive are supportive of performing research and development and demonstration for advanced reactor and fuel cycle technologies. In fact, there is a lot of recommendations that came in related to additional technologies that could be or should be considered and, also, considerable numbers of recommendations that related to the importance, the strategic importance of having these capabilities.

In addition, we received comments that noted that we should take into account fuel cycle activities elsewhere in the world and be more aware of those; also, that the

nuclear industry needs to be actively engaged with the government efforts to develop these technologies. And then, finally, many of the comments related to the importance of taking into account the accident in Fukushima in working on these topics.

So, with these major themes, we have proposed a set of both changes and in other cases keeping the report in its original form. Now the first is recommendations that relate to closing the fuel cycle or abandoning the reprocessing and maintaining a once-through fuel cycle.

This, again, as I had emphasized, is an area where there is not a national consensus. Indeed, on our Subcommittee and on the Commission there is not a full consensus about what should be done.

But, in fact, what we end up recommending is that it is premature at this point for the United States to commit irreversibly to any particular fuel cycle as

a matter of government policy. Instead, there are benefits to preserving and developing new options, and that this is the appropriate strategy for us to take at this point.

There's also discussion about taking into account actions since Fukushima to address reactor safety worldwide. Our report has been changed to reflect support for actions taken by the international community since the accident. This includes IAEA's focus on enhanced international safety standards, the World Association of Nuclear Operators, and also a variety of actions that have been taken by vendors.

I was personally involved in some of the major U.S. Government actions to support the Japanese during the course of this accident. And I would like to emphasize that in managing the accident and in supporting the Japanese, U.S. scientists and researchers at our National Labs who work on fuel cycle and reactor R&D played a major role in providing

advice to our government, which then went on to support our ability to provide advice and assistance to the Japanese.

And I think that this actually is additional evidence of the value for the United States maintaining scientific and technical competence in the field of nuclear energy, is that you need to have this type of capability available when you may have events like Fukushima happen elsewhere in the world. So, I think that our new report, the final report, will address these issues in a more comprehensive manner.

Next, there is the set of recommendations that relate to stopping the production of spent fuel by stopping the operation of reactors, either immediately or at the time that their licenses expire. The Commission has not offered judgment about the appropriate role of nuclear power in the nation or the world's future energy mix. Instead, we note that there is wide support

for research and development of nuclear energy technologies.

And we have not taken a position, and will not take a position, on the advisable funding levels, but emphasize that this should be decided in the context of the nation's overall efforts to develop energy sources and to maintain innovation in energy technologies.

There is also the recommendations that the U.S. should reprocess spent fuel in the way that some other countries do. Our Subcommittee members did visit facilities in France and Japan and in the United Kingdom where reprocessing of commercial spent fuel takes place.

The Subcommittee believes that reprocessing like France does does not fundamentally change the waste management challenge in the United States. That is, these technologies do not eliminate in the end the need to develop an integrated management strategy that includes the capability to store

and to transport and to place into geologic disposal these materials or at least some of the materials that are generated from the use of nuclear energy. And so, we think that it is important that the major recommendations of the Commission to move forward to develop capabilities for transportation, storage, and disposal be implemented.

Then, we also received considerable number of recommendations about additional reactor technologies that various stakeholders believe need further attention and investment. We have edited our report to reflect the importance of trying to identify technologies that have the potential to be game-changing, that is, to change the nature of the fuel cycle.

Some of these options may not be completely obvious. And so, for example, one that has been suggested and that we have introduced as a potential game-changing technology is one, a nuclear energy system

that would eliminate need for reprocessing and enrichment, but through the use of uranium that is abundant, would be abundant if it could be abstracted from sea water and the use of a disposal technology, such as deep boreholes, that could be able to provide effective and nearly-irretrievable long-term disposal of the spent fuel.

So, this is an example. There is actually a wide number of different potential technologies that could be developed. And so, we emphasize that we should be seeking this sort of game-changing type of technology.

We also had recommendations that the nuclear industry should be more involved in the government actions that relate to the nuclear power enterprise. We concur and have edited the report to emphasize the importance of industry collaboration with the government.

And there is also the set of recommendations that relate to understanding better what is happening around the world in

terms of nuclear energy technology. We have edited the report also to reflect these comments and, in particular, to note that there are substantial efforts elsewhere in the world to develop advanced technologies in China, Russia, and India.

I would note that in China, for example, there are major development programs that have been started to demonstrate thorium molten salt reactors, sodium fast reactors, gas-cooled high-temperature reactor technology. All of these areas are moving forward elsewhere in the world.

And in fact, in the United States our industry faces challenges in terms of being able to compete with these other countries because of the fact that these other countries are providing substantial support to their industry to develop advanced reactors and fuel cycle technologies.

So, the final set of comments that we have received relate to the importance of

existing U.S. facilities and of sustaining the capabilities that the United States already has. We have also edited the report to reflect these comments.

In particular, we recommend that the DOE should continue to leverage its existing and nearly-irreplaceable nuclear energy RD&D infrastructure and the human capital to the greatest extent possible.

And I would go back and note personally that in the management of the Fukushima accident, again, the capability to have scientifically- and technically-trained people who can come to work on this problem when needed was extraordinarily important in enabling an effective response from the United States. And so, there are multiple benefits that come from sustaining this research and development enterprise at a level that it can be effective.

We also also that decommissioning of the facilities that exist could cause the

loss of capabilities that would in the end potentially significantly limit our RD&D efforts in critical areas. And one of the ones we cite is providing technical basis for extended dry cask storage.

So, this is an overview of both the comments and themes, the major themes, of discussion that we heard in the public comments that were received and also what the Subcommittee recommends be done to update our Subcommittee report. And then, of course, these recommendations will flow into the full Commission report, which we hope will be issued before the end of January.

Thank you.

CHAIR HAMILTON: Pete and Per, we appreciate very much your presentation. It is obvious to me that you have made a number of adjustments as a result of the comments, and I think that is commendable.

Are there any questions to the Co-Chairs here?

Yes, Al?

MEMBER CARNESALE: Just two points. One is it is unlikely you are going to receive very many comments from people who oppose more R&D on advanced fuel cycles and technologies. So, I think it is the merit of the comments, not the number, that should carry weight. I think that is true in democracies generally. There are interested groups, and then there are groups that have a small interest and are not organized. I favor it. I mean, it is a question of how strong it is.

Second is, given the financial situation of the country in the future, I think more R&D in something means less R&D in something else. There is going to be substantial reductions -- there have been -- in the R&D budgets of the country. I think the sciences in general are going to suffer and the like. It is Senator Domenici's usual question of, where will the money come from

for this?

As I understand it, the disposal piece can't be used for this purpose. So, I just say we should have some measure of modesty here in proposing more of each thing, lest our other recommendations be given less credibility for that reason.

MEMBER PETERSON: Al, you are correct. It is important to note that under the contracts between the Department of Energy and utilities, the waste fund fees cannot be used for generic R&D of the sort that is recommended here. And the current funding, therefore, comes from a combination of industry funding, which funds work at the Electric Power Research Institute, as well as federal funding, which funds the DOE efforts in this R&D.

The broader question of our capability to invest in energy R&D is addressed also in the report, both in our original draft and here, which is that there

is a PCAST report and study on this question of how do we assure going forward sufficient general investment in research and development in the field of energy, which, of course, is of extraordinary importance to our economy and to our national security.

We have endorsed the PCAST recommendations, which include recommendations on how additional funding might be generated for energy R&D, such as the potential for line charges on electricity and other things of that nature.

But this is a general issue that I think is important for our nation because, if we don't adequately invest in research and development in energy, it will be to our detriment in the long-term.

MEMBER DOMENICI: Mr. Chairman?

CHAIR HAMILTON: Pete?

MEMBER DOMENICI: I would like to say to you, Al, what my thoughts are on this. I'm certainly of the opinion that looking at

the next decade America is not going to have growing budgets on that side of the ledger that is called domestic appropriations. There's no question. We will either diminish that program in an orderly manner, such as the Committee that just failed should have done, or it will be thrust upon us by default, which will bring quick disaster to the country.

We will have disorder in our economic system, the likes of which we have never seen. If we let this ratio of GDP to debt go to 100 and on up, there is no question something big happens. If you don't want to believe it, and wait until it happens, then make sure you enjoy life while you have it because sooner or later it is going to be different if you don't fix it.

But I still think that we have a responsibility to state that we think research and development in this area is important. I do. I don't think we can even measure it. What comes out of the scientists at our

institutions as part of our infrastructure is unparalleled. I think we should continue it in this area.

I don't know whether we want to try to say this is better than that with dollar signs attached. I think we would spend another year doing that. I believe what we have done heretofore on R&D is adequate and we ought to keep it that way.

But we understand that the people opposed and the people for in something like this, we don't look at them equal because one is a very active group, the other is just latent citizens or institutions with an interest. Obviously, they are not -- we don't get even response, but that happens both ways, as you know, both sides of an equation.

Thank you very much. Thank you, Mr. Chairman.

CHAIR HAMILTON: I think it is very important that our final report reflect the tone of the comments that have been made

by the last two or three speakers. We have to be realistic about the fiscal environment overall in which we are operating and how that will impact some of the recommendations we make. So, your comments are very well-taken.

Any further comments? Susan?

MEMBER EISENHOWER: I would just add to that, yes, we are in an increasingly resource-constrained environment. So, it is really up to us to make a case on why research and development in this area is critical. Because it is not just for nuclear energy, it is for energy in general.

Natural gas is a huge boon for the nation's energy picture. But if we are serious about climate change, it is really only a transitional fuel. So, R&D has to be playing to the longer game, which is addressing climate concerns ultimately.

CHAIR HAMILTON: Yes. Okay. Any further comments? Per?

MEMBER PETERSON: I would just

like to add that there's objective evidence that U.S. investments in this area have yielded very substantial results, because today the only nuclear reactors commercially available that you could procure that have passive safety systems, that is, that don't require any electrical power for long-term decay heat removal, which post-Fukushima is a very desirable safety feature, those are U.S.-origin designs, licensed by the U.S. Nuclear Regulatory Commission. And no other countries have developed technologies for passive safety and brought them through to commercialization.

So, I think this is an illustration of how the United States has demonstrated the capacity to be innovative in reactor technology in ways that other nations have found challenging. I would hope that we can continue to make these types of improvements and exhibit the leadership.

There are reasons why utilities today would prefer to buy reactors that have

these passive safety features. In fact, the ones that will be entering into construction in the United States just in this coming year will be reactors with passive safety systems, the ones at the Vogtle sites and Summer sites in South Carolina and Georgia.

CHAIR HAMILTON: Well, Pete and Per, we appreciate very, very much your report. You have already identified the changes, the proposed changes. Those are acceptable, I'm sure, to the Commission.

And you do not have, as I understand it, a specific recommendation for a new recommendation in the full report; not necessary on the basis of what you have said.

MEMBER PETERSON: That is correct. We have, instead, just modified the text of the report to reflect the input.

CHAIR HAMILTON: Right.

MEMBER PETERSON: But the basic recommendations remain the same.

CHAIR HAMILTON: Very good.

Now I am informed that Jonathan's plane is going to be landing in about a half-hour or so. I think what we will do at this point is take a break.

Chuck, if this is all right with you, we will wait until Jonathan is here, and then you and he can report.

Will we be eating lunch this break? We may very well have an early lunch.

So, we will break at this point, and then we will come back when Jonathan is available to hear the report on the Disposal Subcommittee.

So, we stand in recess. It has been suggested we give you a specific time, so you don't wander off somewhere. 12:30. 12:30 we will plan to meet again.

Thank you.

We are in recess.

(Whereupon, the above-entitled matter went off the record at 10:52 a.m. and resumed at 12:33 p.m.)

A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

12:33 p.m.

MR. FRAZIER: Okay, so we are going to get started.

Commissioners Moniz and Carnesale will sit momentarily, I hope.

So, I am going to turn it over now to General Scowcroft, sir, whenever you're ready.

CHAIR SCOWCROFT: Thank you very much, Tim.

We will now proceed with the Disposal Subcommittee discussion. The Co-Chairs are Senator Hagel and Mr. Lash.

Do you want to start? Okay.

MEMBER HAGEL: General, thank you.

First, Jonathan and I wish to thank our Subcommittee members who put a lot of time into this project. They have enhanced what we think is a pretty good product to this point by their diligence and their time and effort, as well as thanking the staff who put

a remarkable amount of time and effort into this effort. So, to each of you and all of you, thank you on behalf of Jonathan and myself.

Our Co-Chairmen of the Blue Ribbon Commission have asked Jonathan and I to review the major themes in the public comments that we have received over the last few months relevant to the Disposal Subcommittee Draft Report and discuss in some detail how we propose to address these comments and how, in fact, we have addressed them.

That will be done through slides that will appear on the screen. Jonathan and I will, in some narrative form, walk everyone through this. Then, at the end, I know we would be happy, and speaking on behalf of the staff, they would be exceptionally happy to answer questions.

So, with that, I would ask my Co-Chairman, Dr. Lash, for his thoughts and to begin taking us through this Subcommittee's

recognition of the comments that we received, which have been very, very helpful to our efforts in what we heard and the investment of time and thought that we received over the months.

So, with that, Jonathan Lash.

MEMBER LASH: And, Mr. Chairman, I apologize for having not made it this morning. I got stuck in the Miami Airport waiting for the maintenance staff to replace a broken bulb on a door indicator. They insisted that it had nothing to do with the fact that American Airlines had just declared bankruptcy.

(Laughter.)

I want to add my thanks to the members of the Subcommittee. Over the course of recent months, members of the Committee and the staff have attended dozens of meetings to take comments, have made a variety of site visits, and have reviewed hundreds of pages of very excellent comments.

I will summarize today the major

themes that we heard in the public meetings and in the comments, and the way that we responded to that. We have made significant changes and are grateful to the public because I think what they have helped us to do is to improve both the clarity and the substance of the report, as you will hear as I describe some of those changes.

The process that we used is very much like the process that other Subcommittees used. So, I won't review that again.

I would emphasize, first of all, that there was quite general and widespread acceptance of the fact that the United States will need at least one geologic repository for waste under almost any scenario that we can imagine. And the premise for all the other recommendations of the Disposal Committee was affirmed by public comment. We have to move forward with this process to identify a site for a geologic repository.

Secondly, there was very broad

support for the notion that the process of developing such a repository should be the responsibility of an independent federal entity especially established for this purpose, one of the prime recommendations of the Subcommittee.

And third, there was broad public acceptance of the importance of assuring that the flow of waste fees is made available to that authority to complete the process of identifying/siting a facility. I will come back to that later in the discussion. But it is a particularly important matter. None of this works without money.

Another theme was that, while people accepted the basic idea that we should have a consent-based process for siting and development, they thought we should be clearer about what that constituted; what would amount to consent; what was the role of the states; what kind of agreement might be established between the authority and the states; at what

point could a state or locality make the decision to opt-out of a process. And at what point would their agreement to participate be binding? And finally, what kinds of incentives would be available to the authority in order to develop agreements with potential host communities?

A number of commenters asked us to assure that the report better reflected the support that exists currently in Nye County for the Yucca Mountain Project. A number of commenters urged us to call for completion of the NRC review of the Yucca Mountain license application. And finally, a number of commenters expressed doubt about whether the existing waste fee collections would ever be adequate to complete the process of citing and developing a facility.

Members of the public commented that we should do more to explain the extent to which public fear of radiation makes the process of facility siting and waste

management generally more difficult. They urged us to reconsider the use of the word "prompt" in our description of the development of storage and disposal capacity because they felt that that might be seen as undue haste, and as a tradeoff of haste against safety, which was certainly not our intention.

And a number of commenters suggested that we should develop some kind of schedule so that people could see what the timing might look like for the development of a new facility.

They asked us for more details, as I said earlier, they asked us for more details on the consent-based process. And in response to that, we have suggested adding to the list of characteristics that we believe should be embodied in the future siting process, including a sixth characteristic in response to requests to get more specific about the nature of the arrangement between the waste management authority and state, tribal, and

local governments.

What we intend is that host states, tribes, and communities should have the opportunities to become partners with the waste management organization in repository development or at least, at a minimum, should have a court-enforceable agreement with the organization to assure that commitments to the states, tribes, and communities are upheld. A number of commenters observed that there is a long history of failing to meet those commitments, which undermines the willingness to enter into negotiations.

In the Subcommittee's visits to currently-successful programs in Scandinavia, we found that these kinds of agreements were an important part of the ability of the authority to proceed with siting. Such a partnership arrangement would contain specifics about the process to develop a potential site, the regulatory roles of the state and other units of government, the

amount and nature of benefits to be provided, and other factors.

Regarding the issue of when consent has been achieved, some commenters suggested that consent within a state be measured by a statewide referendum or ballot question.

On the other hand, we saw in looking at the WIPP facility that the facility was sited, opened, and has been operated without the use of such a statewide referendum, but rather in direct negotiation with the State government.

The Subcommittee has taken the view that the question of determining consent ultimately has to be answered by the potential host state, using whatever means and timing it seems fit to demonstrate that it is acting in the best interest of its citizens. We conclude that a good gauge of consent is the willingness of the state to enter into a legally-binding agreement with the facility

operator, where the agreement enables the state to have confidence that it can protect the interests of its citizens.

That also extends to the regulatory role of the state. It is clear to us that potential host states must have the opportunity to negotiate a regulatory role that it believes is sufficient to satisfy its citizens that their interests will be protected.

Some suggested that giving the state the right to regulate radionuclides is the solution to this issue. We heard mixed reactions to that suggestion from state representatives themselves. And our conclusion is that it should be an element of the negotiation between the state and the authority, and that all options should be on the table.

The Committee has taken the view that defining the point at which the right to unconditionally opt-out expires must also be

part of the negotiation of the agreement between the affected units of government and the waste management organization. That is, we should set up a framework within which these different representatives of public interest should be able to negotiate a specific and reliable agreement for working with the authority.

Commenters asked that the Commission provide guidance on how long the waste management organization should be given to attempt to employ a consent-based siting process. There is, of course, significant frustration about past delays, some skepticism about whether a consent-based process can be made to work, a fear that this could be the cause for further decades of delay, and a desire to set some sort of deadline.

The Committee acknowledges the frustration and observes that it certainly will take many years to develop a new facility, and it can't be rushed if public

trust in the Nuclear Waste Management Program is to be restored.

That said, we all agree that there has to be some end point. It makes sense for Congress and other stakeholders to allow a lengthy period, but not forever for this process. Fifteen to 20 years seemed reasonable to us, following the resumption of the Waste Management Program before passing judgment on whether the consent-based process has been making meaningful progress.

Finally, with respect to the nature of the incentives that might be used to negotiate agreements with host communities and the host state, we recommend that the Nuclear Waste Policy Act be amended to authorize the new corporation to negotiate substantial benefits, benefits far in excess of those specified in Section 171 of NWPA, to be provided to local communities, tribes, governments, or other organizations. The specific use of these benefit funds and the

performance metrics that would determine the amount of the payments should be an element of the negotiation between the new entity and local and state government.

As I mentioned earlier, Nye County and several other neighboring counties commented affirming their existing support for the Yucca Mountain Project. We acknowledge this fact in our Draft Report and recommend that it be reflected in the final BRC report.

We also heard comments suggesting that we urge completion of the Yucca Mountain license application review. Those suggestions urged that the results of this review might inform future depository licensing efforts in the United States and abroad. This issue is before the courts.

As our Co-Chairs stated earlier, we have not rendered an opinion on the suitability of the Yucca Mountain site or the appropriateness of the request to withdraw its license applications, and we have not made any

change in respect to this particular suggestion.

Regarding doubts about the adequacy of the Nuclear Waste Fund fees, and whether they will be sufficient to cover the cost of the program, the Nuclear Waste Policy Act requires that the fee be adjusted as needed to cover the actual cost of disposal.

We would note that a 2008 DOE analysis estimated that the life-cycle cost of disposing of 109,000 metric tons of commercial spent fuel would be approximately $77 billion in 2007 dollars. Another DOE study concluded that the level of the current waste fee at one-tenth of a cent per kilowatt hour is adequate to cover those costs. However, it also concluded that providing assured access to the nuclear waste fee and fund will be essential to the long-term success of the nation's Nuclear Waste Management Program.

I would emphasize this again, as it has been a frequent subject of discussion

within the Subcommittee, the importance that the fee collected be available for the purposes for which it was collected in order to have the program succeed. It is essential for the long-term success of the Waste Management Program to provide assured access to the nuclear waste fee.

The Commission was asked to explain how public fear of radiation makes the waste management problem more difficult. We acknowledge the importance of this fact and suggest that the issue be reflected in the final BRC report.

Finally, we have responded to the concern about the use of the word "prompt", possibly suggesting undue haste, and have made appropriate changes.

And we were asked to also provide a notional schedule so people could understand how long the steps in the plan are likely to take. We don't think that's possible and did not provide a specific timeline for all of the

actions required to be completed, but we do suggest adding greater specificity in the BRC reports where appropriate.

Thank you very much, Mr. Chairman.

CHAIR SCOWCROFT: Thank you very much, Jonathan and Chuck.

Are there comments, questions, observations?

Yes, Dick?

MEMBER MESERVE: Mr. Chairman, I think the Subcommittee has done a very admirable job in what is probably the most important, most significant of the work of all the Subcommittees.

There was one of your comments, however, that did raise a little concern with me, which was the notion that state regulation of radionuclides should be on the table as part of the discussion. As a former regulator, I have some concerns about that from the perspective of one of the objectives one should try to seek is to have stability in

the regulatory program and the dangers that always arise when you have dual regulation.

What it might subject you to, for example, is that one of the parties with a change of Administration would have an opportunity to change regulatory requirements, if they have jurisdiction, going forward.

What I would suggest that might be an appropriate subject for negotiation is not the jurisdiction about to set limits for radionuclides, which I think that should be clearly defined and should be in one entity. But this authority would have, could have the capacity to adopt more stringent limits as part of a negotiation.

And if that were to be something that was worked out at the outset and decided upon as part of a deal, that would be fine. But I do worry somewhat about the downstream consequences of the instability that could result if you give the opportunity for either of the parties going forward to change the

regulatory requirements as they deem appropriate because they have the jurisdiction to do so.

So, I would suggest a somewhat different response to that comment that might be more consistent with getting the consent, which we obviously want to make sure you can do and reflecting local interest without adding possible future problems to the already-difficult task of succeeding.

MEMBER LASH: I will let Per comment in one moment.

I think the suggestion you are making is excellent, actually. It is very useful.

I believe that it is important to emphasize that this negotiation be a negotiation over implementation responsibility, not the establishing of the basic standards. But, still, your point is well-taken.

CHAIR SCOWCROFT: Per?

MEMBER PETERSON: Yes, I would like to echo I think that Dick has raised a very important point, that any facility that is built should meet federal safety standards and that any additional requirements that could be more stringent, if that is what state government officials deem to be necessary, should be one of the elements of negotiation, but that the federal safety standards have to be met as well.

I would like to also point towards what I think is the importance of this general idea that an important measure for state-level consent is the development and negotiation of a legally-binding set of agreements that govern how a facility will be operated, that a state can count on the ability to uphold those agreements because they are court-enforceable.

This goes back to another important element of why we, I think, should assure that flexibility is available in the

negotiation, and that we don't overly constrain this process through the amendment to the Nuclear Waste Policy Act. And it is because what I have learned serving on this Commission -- for example, this last set of meetings that we had, where we had the opportunity to meet with state and local officials in Denver; I was in Atlanta and in Minneapolis -- is that you need to talk to people and learn from that discussion what are the issues that are important, so that you can then take the proper action.

This is why this negotiation process needs sufficient flexibility for it to work out properly. The value of doing that I think is enormous. This is one of the reasons that I believe this is one of the most substantive changes or additions to our Commission's recommendations that have emerged out of this process that we have had over the last few months of engaging public comment on our draft recommendations.

Because the idea that negotiating legally-binding agreements with states and with the local communities and tribes, if those are involved, being a basis for actually establishing a framework for consent, I think is something that is new and that is very valuable. I believe we have previous examples where such agreements have worked.

I benefitted enormously -- sorry for going on a little bit further -- but I benefitted enormously from discussions with Geoff Fettus at the Natural Resources Defense Council, who has been involved in the negotiation of such agreements. It has given me confidence that this is a path forward that can work in terms of ultimately getting states, local communities, and tribes to enter into partnerships and solve these major problems our nation has to safely manage and dispose spent fuel and high-level waste.

CHAIR SCOWCROFT: Thank you, Per.

And are there other comments?

Yes?

MEMBER CARNESALE: A brief caution, really, that relates to this one. Explain how public fear of radiation makes the waste management problem more difficult. There is some level of public fear of radiation that is warranted, right? I don't like to get excessive exposure myself or members of my family.

So, I think we have to be careful. I think we do generally believe that there are levels of fear in some cases that are not based on the facts, but some level of fear is based on the facts. And so, we have to be very careful about how that is addressed.

MEMBER LASH: I don't think the point was to suggest that there should be no fear, but rather that, because there is fear, this process is a difficult process and requires special openness and concern for safety.

CHAIR SCOWCROFT: Vicky?

MEMBER BAILEY: Jonathan, can I go back to this point on the regulatory role of the states and the request to amend the Atomic Energy Act? And maybe give for the audience and for the record a little more flavor of maybe where the Committee was coming from. I think that is important.

Having been at the federal level and at the state level myself, a lot of issues are regional, a lot of issues are state-specific. And I don't necessarily think those issues go to any kind of instability in the process. I just think having a role, a specific opportunity to I think give some credence to some of the specific issues, be it the state -- or in this case, state -- so maybe just a little more flavor of the discussion of why this is in here.

CHAIR SCOWCROFT: Any others?

(No response.)

If not, I thank you, Jonathan and Chuck, once again, for your report.

We will now turn to Commissioner Macfarlane for a briefing on the work of the Ad Hoc Subcommittee on Commingling of Defense and Commercial Waste.

As background, let me point out that the decision to commingle was made in 1985 by President Reagan. In the comment period, a number of commenters have recommended that this decision be revisited or even reversed, in the light of developments that have occurred, and others have urged that the decision not be revisited.

As a result, at the May 13th meeting of the Commission, we directed the Disposal Subcommittee to investigate whether the U.S. should consider reversing the 1985 decision and provide its views for consideration by the full Commission.

More recently, as a result of the comments, we decided to create an Ad Hoc Subcommittee to specifically focus on this issue. And Commissioner Macfarlane graciously

agreed to chair the Ad Hoc Subcommittee.

And I turn the microphone over to Allison.

Thank you.

MEMBER MACFARLANE: Thank you, General.

Well, you have given part of my introduction already, which is great. That moves us along here. So, actually, you can move to the first slide.

I don't get a thing? Oh, Jonathan has it.

(Laughter.)

Which is the right way? To the right? The right arrow. Thank you.

So, as the General explained, the Co-Chairman explained, this Ad Hoc Subcommittee is established to consider this issue of whether the defense and commercial high-level waste should be unmingled or continue to be commingled, or whatever terms you would like to use, mixed or not mixed.

And so, we were set up in the October-ish timeframe to do this. The membership on the Subcommittee is as you see here. All have been active participants in this issue that we have considered recently.

What we have done is, this issue has been highlighted for public comment at a number of the regional meetings. We actually had a separate panel discussion on this topic particularly in the October 20th meeting that we had here in Washington.

And the staff kindly prepared some background information on this and an options paper, which is posted on the website for you all to read.

And we have had a couple of discussions as a Subcommittee since then, remotely for the most part. And so, we are in the process of dealing with this issue. So, let me show you what we have come up with so far.

As many of you know, in 1985,

President Reagan issued a decision to not separate defense high-level waste and commercial high-level waste and just put them together for disposal in one repository. And that is how the Department of Energy has been operating since then.

But, as the Co-Chairman pointed out, we have heard comments both for and against, and quite a few comments for and against revisiting this decision, reversing this decision, not reversing this decision, not revisiting this decision. Let me highlight a couple of those for you.

We have heard from state agencies, from non-governmental organizations, from others, other experts who are interested in this issue. Just to highlight a few comments:

For example, from the Washington State Department of Ecology, they said, "We suggest" -- I'm quoting -- "a change to the recommendation stating that the United States Department of Energy high-level waste and

spent-fuel waste should be considered separately."

From the South Carolina Department of Health and Environmental Control, "The Department of Health and Environmental Control believes that breaking the waste into two categories, while retaining DOE as the managing organization for its waste, is a more practical option for several reasons," which they went and listed.

The Yakama Nation said that they thought a separate repository process would be beneficial for defense high-level waste.

The State of Idaho believes that managing the DOE inventory separately from commercial fuel will achieve the DOE and Navy's obligations best.

At the same time, during that October 20th public comment meeting, when we had that panel discussing commingling, many, most of the panelists felt actually the opposite.

Mike Lawrence, who was the former DOE Hanford Site Manager, said that he didn't believe that commingling would be the right thing to do.

Brian O'Connell, representing NARUC, which is the National Association of Regulatory Utility Commissioners, I think, said, "Our preference is for a combined facility," meaning don't unmingle.

Beatrice Brailsford from the Snake River Alliance said, "Reversing commingling would cause additional problems. We have one waste stream now and, all of a sudden, we would have two."

And Steve Kraft from the Nuclear Energy Institute noted that, "I don't see how that success" in managing the back-end of the fuel cycle "is aided by undoing a commingling decision that has withstood the test of time."

So, we really did get comments very strongly on both sides of this issue.

And as we started to discuss the

issue ourselves, we realized that it is actually quite a complex issue. There are quite a few issues, sub-issues that relate to this issue that we should consider.

The current context that made us really begin to rethink this at all is that, since 1985, there have been some changes. One is a shift in the Department of Energy away from the production of these materials to a cleanup mode. That is very different from the situation in 1985.

A second was the establishment of these legally-binding commitments, which you just heard a fair bit about as potential in the future, but that these legally-binding commitments exist now, especially with the State of Idaho, for example, to clean up these sites.

Another issue is that, currently, the lack of statutory authority to develop a repository other than Yucca Mountain exists under the Nuclear Waste Policy Act. So, we

are kind of stuck in that position. At the same time, we have seen the successful operation of the Waste Isolation Pilot Project repository in southern New Mexico. But, of course, the mission of WIPP is limited explicitly to TRU waste from defense activities only.

We, ourselves, have been recommending the establishment of a new organization outside of the Department of Energy to develop and operate repositories.

There is, in addition, the existence of wastes, of nuclear wastes, for which the Department of Energy has assumed disposal responsibility other than those specifically named in the Nuclear Waste Policy Act. Those include greater than Class C wastes, the West Valley high-level waste glass now, the damaged Three Mile Island spent fuel, and there are a number of other small volumes of wastes that need to be considered.

So, these are some of the issues

that have changed. In addition, there are a number of issues that I think remain unresolved. These issues are such as the falling -- did I miss one? Yes, I did. Okay.

These issues tend to be technical, organizational, policy-oriented, such as: should the definition of wastes that go to a defense repository be broadened? If so, how? Would the responsibility for disposal of Department of Energy wastes remain with the Department of Energy or go to a new management organization, say if the wastes were unmingled? Could a repository first developed for defense waste later be used for commercial waste, and how would that work? What are the implications of the fact that much of the defense waste, especially the high-level waste, the liquid high-level waste at places like Hanford, is not yet in a form suitable for disposal?

How could pursuing the separate paths for siting defense and commercial waste

affect either? In other words, would siting a commercial repository potentially be slowed down by the establishment of a defense repository?

What are some of the technical issues associated with the performance of these different waste types in different repository environments? And how can appropriate compensation and incentives be provided for a host community of a defense-only site, for instance, relative to a commercial site?

These are just a small subset of some of the issues that reflect how complicated the overall situation is here. And so, let me just tell you where we are in terms of our Subcommittee.

We are still in the process of developing a recommendation. But, mostly, and most importantly, we believe that the implementation of our overall recommendations, many of which you have heard discussed today,

should not wait for this issue to be resolved. The most important thing is to move forward with our recommendations, our seven or eight recommendations that we have outlined in our Draft Report.

And, of course, congressional or Administration efforts to implement these recommendations can and should proceed as expeditiously as possible.

So, that is mostly where we are falling out on this, is that we need to move forward with our recommendations. This issue is an important one. It does require attention, and we are working on it. But we have come to it late.

CHAIR HAMILTON: Mr. Chairman?

CHAIR SCOWCROFT: Thank you very much, Allison.

Yes, sir?

CHAIR HAMILTON: I just wanted to thank Allison. Brent, you and I handed her a difficult assignment, and we handed it to her

very late in the game. She and the other members of the Subcommittee have really, in a very diligent way, gone at the commingling.

So, Allison, we are very grateful to you for the way you have brought this forward to the Committee, and I know you have got additional work to do. But I want everybody to understand that we gave her that assignment quite late. And she and the Committee members have done an excellent job thus far.

CHAIR SCOWCROFT: I concur. I think Lee speaks for the whole Committee on that issue.

Are there comments, questions, observations?

Per?

MEMBER PETERSON: I would like to reinforce Allison's point that is made about the importance of moving forward expeditiously to implement the Commission's recommendations, both the actions by the Executive Branch on

the fee collection, which are needed and recommended in the draft and will be in the final report, I would believe, and then, also, the changes in the Nuclear Waste Policy Act.

I do think it is important for us to reexamine, in parallel with that, these questions associated with commingling. But I would just point out that, while in theory it might be possible to move forward under the existing Nuclear Waste Policy Act to develop a defense-waste-only repository, that as best I can tell in reviewing the statute, it really would be strictly limited to defense waste, which means, for example, you could not use it for the wastes that are currently stored at West Valley because they have some civil content in addition to defense content.

And so, the most important point is that all of these issues can be resolved in a much better way if they are under a new legal framework based on amendment of the Nuclear Waste Policy Act to implement our

recommendations. We need to be moving forward working with the Administration, with Congress, to get these actions taken as soon as possible because that is the best way to get us restarted and managing these materials that we need to be taking care of.

CHAIR SCOWCROFT: Thank you, Per.

Other comments?

(No response.)

If not, that concludes our formal agenda.

I want to remind everyone again that the recommendations we just heard may or may not be adopted by the full Commission. We will now integrate the proposed comment resolution offered by the Subcommittees and the views expressed here today into a final report to the Secretary at the end of January.

And now, we will take a 15-minute break before we go to the public comment portion of our meeting.

(Whereupon, the above-entitled

matter went off the record at 1:15 p.m. and resumed at 1:31 p.m.)

MR. FRAZIER: General, sir, are you ready?

CHAIR SCOWCROFT: I am ready.

MR. FRAZIER: Let's go.

CHAIR SCOWCROFT: All right.

We now have the opportunity to hear public comments. Based on the number of people who have signed up, we can allow four minutes per speaker.

I will call the names of the speakers in the order they have signed up, along with the name of the following speaker, so he or she can be ready when it is his turn.

With that, we will hear now from Gary Hollis, followed by Bob Halstead.

Mr. Hollis?

Oh, I might mention we do have a little green, amber, and red light here, which will indicate to you. When the amber light goes on, you have one minute left, and when

the red light goes on, that's a red light.

(Laughter.)

MR. HOLLIS: Good afternoon.

My name is Gary Hollis. I am Chairman of the Nye County Board of Commissioners.

We agree with most of your recommendations, especially your consent-basis siting and your prompt efforts recommendation.

Nye County is a consenting host county. We have a major head start on most scientific and technical issues associated with geological disposal. DOE has already provided information and data that documents more than 30 years of study. That should put Nye County at least 20 years ahead of any other community that volunteers.

Mr. Chris Kouts testified at the House Subcommittee on Environment and the Economy that the Office of Civilian Radioactive Waste Management could be restarted in 18 months, whether reestablishing

a DOE role or creating a separate corporation.

Continuation of the Yucca Mountain license is the only proper way possible to develop a geological facility for nuclear waste. Most importantly, the Yucca Mountain process is the law, and I outraged it is so blatantly being ignored. I believe the American people are similarly outraged.

To paraphrase former President Ronald Reagan, "The public, through its elected officials, has the means to change a law if we disagree with it, but we cannot, as citizens, pick and choose the laws we will or will not obey."

Congress passed the Nuclear Waste Policy Act. It needs to be followed or it needs to be changed. The BRC is not a siting commission, but remaining silent regarding the abandonment of the Yucca Mountain Project has nothing to do with repository siting. Your silence makes you complicit in the violation of federal law.

Claiming that the Secretary's direction prohibits you from considering Yucca Mountain is just wrong. Your Charter makes no such prohibition, and the Federal Advisory Committee Act does not allow a sponsoring authority to unduly influence you as an independent commission.

So, follow the law. Put the organization in place and find a better way to access the Nuclear Waste Trust Fund, and start moving the waste for emplacement.

Your conclusion that disposal is needed and that deep geological disposal is a scientifically-preferred approach has been reached by every panel that has looked at the issue and by every other country that has pursued a nuclear waste management program.

So, exercise your independent and your political courage to include a recommendation endorsing completion of the NRC's review of the Yucca Mountain license application.

Thank you.

CHAIR SCOWCROFT: Thank you very much, Mr. Hollis.

Bob Halstead, followed by Dan Brown.

MR. HALSTEAD: Thank you, Mr. Chairman.

I am Bob Halstead. I am Executive Director of the State of Nevada Agency for Nuclear Projects.

The State of Nevada applauds this Commission and the staff for the process that was used in developing the Draft Report. In our opinion, the Commission and its staff have done an admirable job with a difficult task.

The State of Nevada strongly supports the Draft Report recommendations regarding consent-based siting and waste program reorganization.

Regarding commingling of defense and commercial waste, we believe the critical implementation issues for a defense-only

repository would be the same as for a commingled repository, that is, consent-based siting and NRC licensing. And we support the staff recommendation in the background paper that was prepared for you that any reexamination of the 1985 commingling decision should be done independently of DOE.

And we were pleased to hear this morning the Transportation and Storage Subcommittee recommendations. We certainly will look forward to seeing how they are reflected in the Commission's final Report. And I will take just a minute to talk about the transportation issue.

As you know, we have provided a considerable amount of documentation and testimony to the Commission on the transportation issue. This is because future spent nuclear fuel shipments will certainly be dramatically larger than current shipments and because routine shipments and accidents both create the potential for radiation exposures

to workers and members of the public, and certainly create perceived risk, even in cases where actual radiation exposures are far below regulatory concerns. Certainly, we expect terrorism and sabotage to continue to be serious concerns in the future.

And so, we continue to urge the Commission to expand the discussion of transportation issues into a separate chapter in the final report and to adopt the following five recommendations:

One, a recommendation that the implementing entity should give equal consideration to transportation as it does for storage and disposal as part of the planning and designing of a new national nuclear waste management system.

Two, the implementing agency should address transportation requirements for storage and disposal facilities, such as mainline railroad access and interstate highway access, in the earliest possible

stages of site selection.

Three, the implementing agency should adopt all of the National Academy of Sciences' 2006 recommendations for transportation risk management. We were happy to hear that that seems to be the same recommendation coming from the Subcommittee.

And in particular, we note that adoption of the NAS recommendations regarding full-scale shipping cask testing and social impact management, if done early, would be especially helpful regarding the site selection process.

Finally, or point 4, the implementing entity should follow the WIPP transportation model in developing a national transportation plan in cooperation with states, tribes, and local governments and state regional groups.

And finally, the implementing agency should insist, if it is not already required because of its legal status, upon

full NRC regulation of all shipments to storage and disposals.

And let me conclude by restating the State of Nevada's opposition to any future consideration or further consideration of Yucca Mountain for nuclear waste disposal, storage, or any related activity.

Just on a personal note, I think this Commission has done a terrific job. I have been to a lot of the meetings. I have come to have enormous respect and fondness for the members of the Commission and working with the staff.

On behalf of the State of Nevada, I would say that we really appreciate the way that you have approached this subject.

Thank you.

CHAIR SCOWCROFT: Thank you, Mr. Halstead.

The next speaker is Dan Brown, followed by Kara Colton.

MR. BROWN: Good afternoon.

My name is Danny Brown. I am with Securad, Incorporated of Canada.

I would like to follow up on the last speaker's comment that it is about time you guys got some compliments for the work that you have done as unpaid volunteers for the last 16-18 months. I think you have done a phenomenal job, and the choice of Commissioners was excellent right from the beginning. You have proven that whoever made the decisions was wise. I think you have done a fabulous job.

The staff, Tim Frazier and John and the different people, are so professional. It has been a pure pleasure to be here.

My one complaint is the hearings are coming to an end and I won't have the chance to have regular contact with you in the future.

In regard to a corporation, if you create a quasi-government entity, I would recommend that you take a look at the Crown

corporations of Canada. It is routine in the Canadian system to create quasi-government corporations to manage various areas of activity, and the result has been less than stellar. So, you might want to take a good look at that.

Personally, I think you would be better to have a private corporation, a private sector corporation manage this solving the used-fuel problem and getting assistance where and as needed from the appropriate government agencies. But let the private sector lead the effort, and I think you will get better results in the long run.

Lastly, I would like to say that my organization, thanks to this Commission, has met a number of people from different corporations, et cetera. We are forming a consortium to build a global deep repository. When and if we succeed in that effort, we are going to be crediting this Commission as having been the catalyst that allowed us to

meet the right people, talk to the right people, hear from wise people, experienced people, and build a consensus that we really need to solve this problem, and we need to solve it now. We shouldn't be kicking the can down the road another 25, 50, 100 years.

The world needs to move forward with American leadership into a clean energy future. I think nuclear will become the baseline power source. We need a new energy grid. We need to create 2 million jobs. Both Republicans and Democrats see the need for redeveloping our energy sector. Republicans support it to support the energy industry; Democrats support it because they want to deal with climate change and issues of that kind. It is one of the few areas where both sides agree that we need to rebuild our energy grid. I would like to see modular reactors become a major part of that new energy system.

So, again, I want to thank you very much. It has been an absolute pleasure

working with all of you.

And one last thing. I would like to encourage the Commissioners -- and I know you have been volunteering; I know it has used a lot of your time -- but I would really like to see you stay involved and pursue it, keep pushing until we do get a solution. You are in a position to be listened to by a lot of different people, decisionmakers. It is nice that you are producing a great report, but it would be really good if we make sure it gets implemented.

Thanks very much

CHAIR SCOWCROFT: Thank you very much, Mr. Brown. We appreciate your comments.

The next speaker is Kara Colton, followed by Linda Lewiston.

MS. COLTON: Hi. My name is Kara Colton. I am the Director of the Nuclear Energy Program at the Energy Communities Alliance. ECA is a member organization of local governments working on and impacted by

nuclear issues and the likely potential hosts of sites for new nuclear reactors, technology demonstrates, and waste storage.

ECA believes the BRC's process is the first step in rebuilding trust that has eroded over time among DOE, the NRC, states, and the communities which are most affected by the federal strategy regarding nuclear waste management.

We appreciate the opportunity to comment. We have appreciated the opportunity to comment throughout this whole process and again today.

While our detailed comments have been submitted in writing, my comments will address some of our key issues today.

First, ECA believes that defense high-level waste should be decoupled from commercial used fuel. There is defense high-level waste that is older, colder. It has been vitrified and it is ready to go into a repository, its only disposition path. It can

be addressed immediately. It doesn't need to wait for an NRC process to start.

While the industry has for years argued to keep the waste together for political reasons, we no longer agree. We think that we should pick a pilot program, like we did with TRU waste at WIPP, and move forward with it now. Doing so should save billions of dollars.

With estimates of 20 to 30 years to establish a disposition path for commercial used fuel, it doesn't seem to make sense to wait to move the waste when we can alleviate the risk in the communities now that helped support our national security efforts in the past.

In fact, demonstrating that the high-level waste can be successfully dispositioned can increase public confidence that the federal government can safely manage and dispose of nuclear waste.

ECA agrees with the BRC's

recommendation for a new consent-based approach to site future nuclear waste management disposal facilities. We agree that any new approach should have the transparency, flexibility, patience, responsiveness, and a heavy emphasis on consultation and cooperation, as you noted in the Draft Report.

ECA would add that any new approach prescribed that impacted local governments and communities, those adjacent to the specific sites, be engaged early and actively in the process to ensure that their involvement is meaningful.

We also ask that the final report include what the Draft Report did not, a specific oversight role for communities and funding, so that the local governments have the resources necessary to carry out their oversight responsibilities.

In regard to developing a new organization to implement waste management, ECA could potentially support its

establishment, but we have concerns about how long it will take to create this new entity, given that legislation will be required. We are pleased that the BRC has looked at past efforts and we encourage you to continue to do so, look at why past efforts failed, and avoid significantly increasing the period of time before waste is moved from existing sites.

We also hope that there will be a specific requirement for any new entity that is created to include a local government official on its board of directors from the jurisdiction where the nuclear waste will be located.

ECA agrees that there should be access to funds in the Nuclear Waste Policy Act independent of the annual appropriations process. The funds should be used as originally outlined and intended in Section 302 of the Nuclear Waste Policy Act.

However, our members are concerned about how assured access will be defined and,

also, how long it will take to implement changes, given the need to pass new legislation.

Finally, I just want to remind you that our members will be impacted by any actions taken on the recommendations and any actions not taken on the recommendations. We are concerned about whether the political will exists to implement any of the recommendations and, also, how we can work to ensure that it does.

We are thrilled with your work, and we are pleased to offer any assistance as you all prepare your final report.

Thank you.

CHAIR SCOWCROFT: Thank you very much, Ms. Colton.

The next speaker is Linda Lewiston, followed by Diane D'Arrigo.

MS. LEWISTON: Hi. My name is Linda Lewiston, and I represent Nuclear Energy Information Service of Illinois.

I was going to say that John Rowe and I were the only people here today from Illinois, but I don't see him here, either. So, I guess I am the only one from what we call "Nuke Central" because, as many of you know, we have more radioactive waste in Illinois from nuclear reactors than anywhere else.

We support the recommendations of the Blue Ribbon Commission as far as we can on reprocessing, that reprocessing should not be an option, but we disagree that not even at the R&D level, that the proliferation issues in regard to reprocessing have not been adequately addressed yet, and that it is a costlier and more environmentally-damaging technology than once-through disposal.

We disagree with the BRC that regional interim storage of high-level radioactive waste should not be adopted. As mentioned, the high-level radioactive waste can be safely stored in dry casks for as long

as 100 years onsite with appropriate maintenance and license renewals.

Interim storage proliferates more high-level radioactive waste sites, contaminating even more sites nationwide. Something Congress disingenuously said in 2003, we should be reducing by opening Yucca Mountain.

Which of these positions is the hypocritical one? It will necessitate unnecessary and costly double-transportation, and Illinois would be a prime candidate to host such a facility, given its already large quantity of high-level radioactive waste and elaborate transportation network.

On the front page of The Chicago Tribune several years ago, it exposed the exact routes that would be involved in the Yucca Mountain transport plan. It would have brought thousands of shipments through Chicago, many on barges on Lake Michigan, and come within a quarter mile of the Art

Institute. Terrorists just need to gather their weapons and wait for the trains to come. The transport casks are not designed to withstand anti-tank missiles, for example.

The 2006 NAS study said to wait at least 10 years because of these risks, and we support the use of hardened onsite storage in the meantime. The risks onsite will inevitably continue for the whole decade.

And one example of the transportation risks that has already occurred, the highly-radioactive Big Rock Point reactor pressure vessels, weighing 290 tons, traveled by train from northern Michigan to Barnwell, South Carolina -- this was a few years ago -- to be buried in a ditch at a leaking pump. The weight on the damaged train tracks in Grand Ledge, Michigan, as well as a spot in the Carolinas, caused train derailments in its wake with trains that came along later. These are incredibly-heavy containers.

A dedicated train with five 100-ton transport casks could put 500 tons of weight on a single train bridge at various places in this country. Will the bridge collapse under the weight? How high up is that bridge? What is below it?

In conclusion, we support recommendations that would keep the high-level radioactive waste onsite in more protected technology under hardened onsite storage.

Thank you.

CHAIR SCOWCROFT: Thank you, Ms. Lewiston.

The next speaker is Diane D'Arrigo, followed by Arjun Makhijani.

(No response.)

Do we have Diane D'Arrigo here?

(No response.)

Okay. All right. Could we go to Arjun Makhijani?

MR. MAKHIJANI: Thank you very much, General.

I really wanted to thank the Commission. You started your work by everybody complaining about a lack of openness and lack of public comment, and how everything was predetermined. And you listened right away. You opened it up. You transcribed the proceedings. You webcast the proceedings. You expanded the public comment. And in this culminating session, you showed that you took the public comment seriously. So, I think that is really very exemplary, and I want to thank you for doing that.

Of course, you are not obliged to agree with all the public comment because you possibly couldn't because so much of it was contradictory. But, nonetheless, I will plug for my own public comments, as you will likewise understand.

I want to address the commingling question first. I want to preface that by saying, as you probably know, I wrote the comments for the Yakama Nation, which they

reviewed and endorsed and sent on to you their comments. I am not representing the Yakama Nation today. I haven't cleared what I am going to say with them because I hadn't reviewed your paper before then. So, I just want to make it very explicit on the record that I am speaking for myself here. They may agree with me, but they may not.

The commingling paper, I want to thank you for including these other wastes, at least mentioning them somewhere in the Commission record, that they are an important technical issue to be considered.

For me, however, it is not enough. My central reason for wanting commingling was that these other wastes should be designated to go to a repository. The source term just for the graphite blocks at Hanford is three and a half times bigger than what would have been allowed at Yucca Mountain emissions from 70,000 tons of nuclear waste disposal. That means that stuff should go to a repository.

If this Commission doesn't feel that it can say that, I think you should leave the commingling issue alone. If you cannot say the depleted uranium, that stuff that is going to pollute groundwater to hundreds of times and thousands of times above drinking water limits, and here we are going to protect water that is thousands of feet below a level, and we are going to leave the Columbia River alone, then I think the Commission should leave that issue alone.

My main reason for putting that issue forward was to hope that the Commission will fully seize its Charter to address the nuclear waste question. I did reread your Charter today. I can understand you didn't have the time to address everything. Fine. But I took your charter seriously and proposed that, and if you cannot accommodate that within your deliberations -- it is last-minute -- I think you should leave the existing policy alone.

The second thing, I think the DOE cannot be allowed to have a role in the defense repository process or in the spent-fuel process. It just cannot. I cannot support that. The DOE has messed up the repository process from day one, 1983 -- year two. I should modify, not exaggerate.

So, I think on those two grounds I would strenuously oppose if you did not support putting all these other wastes in a deep repository and you did not support this thing being in your new organization. Both repositories should happen in the same process. Having a different process for defense waste is not a supportable idea to me, anyway.

One area in which I am not very happy about your response to public comment, I made a presentation to you quite a long time ago in which I demonstrated that, no matter what your position on nuclear power, reprocessing existing spent fuel makes no

technical or economic sense whatsoever.

I don't see that you have addressed it. I don't see that you have seen it. Yes, you have addressed the technical issues. Whether you like breeder reactors or advanced technologies or not, I just cannot see how that makes sense, and I would love for you -- you have technically some of the most technically-eminent people in the country. I would really like to hear from those technically-eminent people as to why you haven't addressed what I think was a carefully-done piece of presentation to you.

Thank you.

CHAIR SCOWCROFT: Thank you, Mr. Makhijani.

The next speaker is Ron Johnson, followed by Judy Treichel.

Ron Johnson? Okay.

MR. JOHNSON: Good afternoon.

Thank you, Chairmen Hamilton, Scowcroft, and members of the Commission.

My name is Ron Johnson. I am Assistant Secretary/Treasurer for the Prairie Island Indian Community in the State of Minnesota, on the tribal council.

We are pleased that Commissioner Bailey and Commissioner Peterson were able to visit our homeland on Prairie Island the day before the Blue Ribbon Commission's public meeting in Minneapolis on October 28th, 2011.

After hosting similar meetings with federal, state, and representatives over the years, we have learned, unless you actually come to Prairie Island and see it for yourself, you really can't appreciate just how close the community is to the Prairie Island Nuclear Generating Plant.

We met in our tribal council chambers, a mere three-quarters of a mile from the plant's dry cask facility. Looking out the window through the 340-kilowatt power lines that run adjacent to our community, you can easily see that the containment domes of

the two nuclear reactors are less than a mile away.

We truly appreciate that Commissioner Bailey and Commissioner Peterson and other members of the Commission staff took a few hours out of their day to see with their own eyes what our tribal members live with every day of their lives on Prairie Island.

The spent fuel is piling up less than one-half of a mile from our nearest tribal residence, and it will remain an unwelcomed threat to our tribe until it is removed, as promised, to a permanent repository.

We have 40 years of failed federal policies with the only progress being to rewrite the promises to remove the spent nuclear fuel. It is hard to have any faith in a 40-year policy whose only measured successes are regulatory amendments that simply kick the can down the road 10, 30, 60, and now maybe even 200 years at a time.

Please understand I mean no disrespect to the members of the Commission and your staff, who I know are working very hard to fulfill the BRC's mandate. But, as I am sure you can appreciate, our tribe is sick and tired of hearing more promises that will in all likelihood be rewritten, be broken in another 40 years.

There are those who will all quickly dismiss the concerns of our tribe. They say the risk of harm to our community is so low that we really shouldn't be concerned at all. We say, "Tell that to the residents of Fukushima, Japan." I'm sure they received the same assurance, platitudes, that we hear every day, assurance and platitudes that are all too easily made, but will mean absolutely nothing if there's any kind of event at the plant or the dry cask storage facilities.

Nine months after the disaster in Japan, members of our tribe truly are haunted by the images of abandoned homes and abandoned

communities. The people of Japan are living out our worst fears, forced removal from their homes and the loss of their homeland with little hope of ever returning.

We didn't ask for the plant or its dry cask storage facility. All we ask now is that the federal government fulfill its promise to remove the spent nuclear fuel from our homeland.

Thank you.

CHAIR SCOWCROFT: Thank you, Mr. Johnson.

The next speaker is Judy Treichel, followed by Alex Pavlak.

MS. TREICHEL: I am Judy Treichel of the Nevada Nuclear Waste Task Force.

I, first, just wanted to say that I was really surprised with Commissioner Meserve's report on, the point that he made about Fukushima and that there was not extensive damage to the fuel because that goes against everything that I have heard. And

perhaps I misunderstood, but I was surprised by that.

Secondly, I think it is a mistake to consider separating the treatment of defense waste and commercial waste because I don't think that the dangers are separate, and I don't know why DOE would be competent to handle the defense waste; whereas, a new entity must be created to handle commercial.

And I think part of that goes to the problem of the way that we classify nuclear waste and the fact that the danger isn't the primary concern, but what is looked at is where and how the waste was produced.

So, if you look at the issues that were listed for considerations for or against commingling, there were six of them. The first was cost-efficiency, and I cannot believe that separating the waste and treating them separately would save any cost. It would certainly cost a lot more to do that.

Health and safety, I'm not sure,

either. Because if there is any thought out there that getting a repository for defense waste is easier than getting one for commercial waste, that can only happen if health and safety and consent are sort of cast to the winds.

The regulation should be the same for both. With transport, possibly there would be increased transport if you've got two separate repositories with waste going in different directions. And I don't believe that it does anything for public acceptability.

It seems to me that it would be a confusing and just a sort of overwhelming thing for the public to be faced with sites being chosen for repositories, for storage, whatever, in tandem for two different kinds of waste. It just seems to me that it makes a lot more sense to keep them together because they are all dangerous, and the danger and the public health and safety has to be the first

requirement, regardless of what you are doing.

So, I thank you very much.

CHAIR SCOWCROFT: Thank you very much, Ms. Treichel.

The next speaker is Alex Pavlak, followed by Norman Meadow.

MR. PAVLAK: Thank you for allowing me to speak to you this afternoon.

My name is Alex Pavlak. I am an unaffiliated engineer. I would like to talk for a couple of minutes about the big picture.

Society doesn't trust nuclear power. Their vision of the future is based on Three Mile Island, Fukushima, Chernobyl, waste dumps that are toxic for 100,000 years. Society needs a credible vision of nuclear power that is cheap, safe, sustainable, and secure. That is the BRC Charter. It is in your Charter, not exactly those words, but that is your Charter.

So, where is it? Where is the vision? The BRC has been fixing a broken

waste management system, and in my view doing an excellent job. I applaud its work. But I don't see a big picture. There is no context.

Nobody is mentioning the fact that WIPP and Yucca Mountain are excellent solutions, if we are dealing with fission products where you isolate it from the biosphere for 100 years.

The actinides, on the other hand, will have lifetimes of 100,000 years. This is going to going to create some difficulties at some point.

So, what's next? How does one go about developing the big picture? And I would like to use Apollo as an example.

In 1961, Jack Kennedy announced that America was going to put a man on the moon. At that point, NASA was confronted with exactly the same issue that nuclear power is confronted with today: how are we going to deal with this?

When the politicians made the

decision, they assumed that we would launch a rocket from the surface of the earth to the surface of the moon and come back. The comic book hero Flash Gordon does it every day. What's the big deal?

The rocket scientists knew better. The rocket scientists wanted to launch a number of rockets and assemble a big rocket in earth orbit, go from earth orbit to the surface of the moon and return.

And then, we had a guy down in the bowels of NASA-Langley saying, "No, no, no. The right way to do this is a lunar orbit rendevous." You go from the surface of the earth to a lunar orbit, drop a guy down, pick him up, and come home.

It took NASA one year to run those scenarios, one year to do the system tradeoffs and the risk assessments. At the end of one year, NASA chose the lunar orbit rendevous, and the rest is history. If they had chosen either one of the other two approaches, we

would not have done it in 10 years, if at all.

The process here is important. NASA had a goal, a clear and stable goal. It took them one year to run the scenarios, to do the system trades, and the risk assessments. They ran the scenarios and then they chose one.

This is not science. This is engineering. This is how we build bridges. Maryland and Virginia decide we are going to replace the Wilson Bridge. The engineers run the scenarios: high bridge, low bridge, drawbridge, tunnels, upriver, downriver. the politicians pick one. There is a sequence of steps you go through to get the big picture.

Likewise, nuclear power has a goal: cheap, safe, sustainable, and secure. This is your charter. We need to run the scenarios.

Unlike Apollo, nuclear power has a strong political component. Everybody is an expert. Everybody has an opinion, and

everything looks confusing.

The way to manage this conflict is to separate the roles and establish a visible formal interface. This is the way you do it for large public works projects. This is the way we need to do it for nuclear power.

First, the experts identify factual scenarios; these are your choices. Then, the public and society can make value choices.

These ideas are developed and summarized in a paper that is posted on your website titled, "What's Next?" The key recommendation, I would suggestion, is the Department of Energy needs to establish a classic engineering development program with a formal public interface. That is my main conclusion.

Thank you.

CHAIR SCOWCROFT: Thank you, Mr. Pavlak.

The next speaker is Norman Meadow,

followed by Karen Meadow.

MR. N. MEADOW: Thank you for the opportunity to present these thoughts here today.

My name is Dr. Norman Meadow, and I am a principal research scientist in the Department of Biology at Johns Hopkins. I am now retired from that position. But I have been the Vice President of the Maryland Conservation Council, which is one of the oldest environmental organizations in the State and perhaps the only such organization in Maryland to support nuclear power.

We believe that nuclear power is essential for the elimination of global warming and that the plants affect much less biological habitat than fossil fuel or industrial-scale wind and solar installations.

We approve of the recommendations of the Draft Report and thank you for your effort. We do, however, think that there is a weakness in the draft. It fails to

adequately acknowledge the central role that fear of ionizing radiation in any dose, no matter how small, has had in creating opposition to the entire nuclear fuel cycle.

The word "safe" appears in the draft 346 times. The radio-phobia is so pervasive that it seems to be taken for granted, as is illustrated by the Yucca Mountain controversy. It is treated as a given that, because Yucca Mountain involves radioactivity, that the project must have the potential for causing widespread health problems.

However, the estimates of dose from Yucca are not mentioned in the news media. I found them only by reading the Environmental Impact Statement. The doses are low and greatly delayed in time. The most likely dose to the maximally-exposed individual is unlikely to even double the annual background dose, and this doubling is not expected to happen for 400,000 years after

Yucca's closure.

It is well-established that doubling of background is extremely unlikely to cause health harm, as I will talk about next.

Further, to be crafting today's energy policy in anticipating of events that will not occur for a period of time longer than homo sapiens has existed seems misguided.

The Draft Report devotes only about four pages to the crucial topic of radiation and health. We understand the limits imposed by the Commission's Charter, and we are not suggesting that you delve into radiation health physics. But we suggest that those few pages mention the conclusions made by agencies such as the National Research Council and the results from the Lifespan Study of the atomic bomb survivors, which is producing the strongest data on the relationship between the dose of ionizing radiation and the risk of cancer or birth

defects.

The most recent paper on radiation-induced cancer among the atomic bomb survivors finds that there may be a threshold for radiation-induced solid tumors at a dose of 40 millisieverts. The existence of a threshold has been hotly and strongly debated. If this threshold for harm is validated after more complete data are available from the Lifespan Study, it will force a reduction in the estimates of harm from both Chernobyl and Fukushima.

Another important finding from the Lifespan Study is the small number of cancers that is attributable to the radiation received by the bomb survivors. Among the 49,000 exposed people who developed 7900 cancers in 53 years following the bombings, very surprisingly, only 850 of those cancers is attributable to the radiation.

In conclusion, we think that risk, which we believe is the core issue of the

back-end of the nuclear fuel cycle, has not been summarized adequately in the draft. Figure 7 is good, but other doses and the prospective threshold should be inserted into the figure. The web links associated with the figure are of mixed quality.

And finally, we suggest that radiation health specialists should be consulted about the content of the pages, the few pages in the Draft Report that deal directly with risk.

Thank you.

CHAIR SCOWCROFT: Thank you, Mr. Meadow.

The next speaker is Karen Meadow, followed by Earl Potter.

MS. K. MEADOW: Good afternoon.

I am Karen Meadow, and I am Treasurer of the Maryland Conservation Council.

Adding to Dr. Meadow's suggestions, the Draft Report mentions birth

defects as a major concern, but another paper from the Lifespan Study states that, "The clinical assessment of nearly 12,000 offspring of A-bomb survivors who have reached a median age of about 50 years provided no evidence for increased prevalence of adult-onset multifactorial diseases in relation to parental exposure."

Additionally, the National Research Council's Committee on the Biological Effects of Ionizing Radiation, the BEIR report, states that, quote, "The aim of the early genetic studies carried out in Japan was to obtain a direct measure of adverse effects in the children of A-bomb survivors." The BEIR Committee concludes that, quote, "There are no statistically-significant adverse effects detectable in the children of exposed survivors."

These data from atomic bomb survivors show that the probability of birth defects from any dose even remotely possible

from the nuclear fuel cycle is vanishingly small. Although you must mention the possibility of birth defects resulting from exposure to ionizing radiation, the statements about birth defects should incorporate the conclusions from the Lifespan Study and the BEIR reports that reactor accidents are extremely unlikely to cause any birth defects.

By overlooking the research results from groups that are as eminently qualified as this Commission is, the report tacitly supports the radio-phobia which is the basis for the controversy. The health issue has been sidelined even though it is the core issue, and we urge you to give it a more objective treatment.

We recommend that radiation health specialists should be consulted about the content of the pages in the Draft Report that deal directly with risk. Frequent assertions that the risk of cancer is orders of magnitude higher than those estimated by the Lifespan

Study and the BEIR Committee both include and depend upon the allegation that the nuclear power industry has manipulated the IAEA, WHO, and UNSCEAR. A lack of objectivity on the part of the NRC has also been alleged. Absent these malign implications, estimates of risk from radiation fall dramatically.

Up to the moment that the tsunami engulfed the Fukushima Daiichi power plant, the industry had relied on the absence of a serious accident for 25 years to persuade the public to accept the resurgence of nuclear power. This strategy assumed that another serious accident was highly unlikely. The industry deliberately avoided a discussion of risk.

A new approach is necessary, and there must be an effort made to disseminate solid medical evidence that even accidents like Fukushima are not nearly as harmful as they are often purported to be, not to mention considerably less harmful than the public has

routinely accepted from fossil fuel power generation for more than a century.

Thank you.

CHAIR SCOWCROFT: Thank you very much, Ms. Meadow.

The next speaker is Earl Potter, followed by Kevin Kamps.

MR. POTTER: Members of the Commission and staff, for 10 years I served as a Senior Counsel and Senior Advisor to the WIPP Project in the negotiation of what became called "The Deal with Next Mexico", essentially, a partnership arrangement.

That experience led me to write a letter to this Commission and to staff on the proposition that the key concept in successfully constructing a program for the management and disposal of nuclear waste in the United States is a partnership with the states.

I would like to thank the Commission staff, particularly John Kotek,

Glenn Paulson, and Tom Isaacs, for listening to those of us who made that comment, and express my great pleasure in seeing the word "partnership" in the revisions to the Draft Report that were submitted today.

I would like to leave you, though, with two thoughts which I think are critical. I think this is the most important issue in front of this Commission: recognizing and defining the role of the states and tribes and localities in your report for a new consent-based siting process going forward, which you have, in my view, magnificently done in the Draft Report and in the revisions that are proposed today. It is the most critical issue.

I would like to express my hope that these changes appear not only in the Draft Report of the Subcommittee that is being proposed today, but in your main report and, more importantly, in the Executive Summary, which is the provision of the report that 99

percent of the public is going to read, even if this means leaving something else out.

Thank you.

CHAIR SCOWCROFT: Thank you very much, Mr. Potter.

The next speaker is Kevin Kamps, followed by Michael Glaab.

MR. KAMPS: Chairmen, Commissioners, thank you.

My name is Kevin Kamps with Beyond Nuclear.

And given the short time, I will focus my remarks mostly on pool risks. At your October 20th meeting here in Washington, D.C., I heard the phrase for the first time "no unmanageable risks with pools or dry casks onsite here in the U.S.," and I was perplexed by that.

Today I heard Mr. Meserve say that there is no urgency in moving the irradiated nuclear fuel from pools to dry casks. And I came late, so I missed what was said earlier,

but I have heard that it was said that there were no significant releases from pools in Japan and no significant damage to pools in Japan. That first point I would like to rebut directly.

There is a study that has been out for a number of weeks now. It was published by the European Geosciences Union. The authors are Stohl, S-T-O-H-L, Stohl, et al. The publication is Discussions of Atmospheric Chemistry and Physics. And the title of the study is "Xenon-133 and Cesium-137 Releases into the Atmosphere from the Fukushima Daiichi Nuclear Power Plant: Determination of the Source-Term Atmospheric Dispersion and Deposition".

And I would like to read this extract from the abstract. Quote: "Our results indicate that cesium-137 emissions peaked on 14 to 15 March, but were generally high from 12 until 19 March, when they suddenly dropped by order of magnitude,

exactly when spraying of water on the spent-fuel pool of Unit 4 started. This indicates that emissions were not only coming from the damaged reactor cores, but also from the spent-fuel pool of Unit 4, and confirms that the spraying was an effective countermeasure."

It is incredible to me that this Commission in its Draft Report and more recently has said there are no risks with pools in the United States. It is an incredible statement, that buggers belief.

We have had a number of close-calls in this country over the years. One I will mention is Palisades in Michigan near my home, October 2005, a cask dangled, a 107-ton weight dangling above the spent-fuel pool for 43 hours. And the personnel at the plant were so inexperienced with the operations of the crane that they attempted to override the emergency brake, which was the last line of defense against potentially a radioactive fire in that pool. If they had succeeded -- and

they were trying -- they could have plunged that 107-ton weight into the floor of the pool and drained the water away. And within an hour or two, the waste which has accumulated for 40 years at that plant would have been up in flames outside of containment.

How can you say there are no risks at pools in this country? That is one of many examples that can be cited.

David Lochbaum with the Union of Concerned Scientists in 1995 published an entire book about radioactive risks, including an entire chapter on pool risks that cites a number of additional examples of the near draindowns of pools in this country.

Of course, at Fukushima it was a pool boildown that went on for days before the water boiled down to the top of the fuel assemblies, so that they could catch on fire and discharge their cesium-137 directly into the environment because it is not located inside containment.

And the United States has 24 such pools operational here in the United States. These are Mark 1 pools. I will mention one that is a shutdown reactor, Millstone Unit 1. It has been shut down since the mid-1990s, and the company, to save money on dry cask storage, has kept its pool full. That is a huge risk.

We have Oyster Creek, New Jersey, over 40 years old; Vermont Yankee; Pilgrim; Fermi 2, 500 tons of high-level radioactive waste in those pools, no temperature gauges required, no water-level gauges required, no radiation monitors, no backup power, no makeup water.

The last point I will make -- because that was the end buzzer, right? -- the last point I will make is that even the makeup water approach is very problematic. Again, as David Lochbaum has recently pointed out to the NRC, what about all that steam when you are adding makeup water to an overheated pool? It

will shortcircuit safety systems that are vital to the core. So, the operators will have a choice. Do we protect the core with its radioactive inventory or do we protect the pools with its radioactive inventory? We have to prevent the boiling in the first place. And, of course, hardened onsite storage, the first premise is to empty the pools to avert these risks.

Thank you.

CHAIR SCOWCROFT: Thank you, Mr. Kamps.

The next speaker is Michael Glaab, followed by Katherine Fuchs.

MR. GLAAB: Thank you.

I would like to thank the Commission for its indulgence, but, in particular, I would like to take the opportunity to express my special gratitude to the Chairmen Hamilton, Brent Scowcroft, and Senator Chuck Hagel, General Scowcroft, whose political careers were careers of public

service throughout the years, frankly, I respect and esteem.

My name is Michael Glaab. I studied nuclear engineering. I am a member of the American Nuclear Society, although I am not a spokesperson. I am not speaking for the ANS on this occasion. I am a member of the ANS Standard 2.32 Working Group. I am in the ANS division membership concerned with decontamination and decommissioning.

I have approximately two decades of service that might be considered environmental in the sense that I was for six years on a technical review committee for a military research facility that was concerned with environmental contamination. I served for almost two decades on a restoration advisory board, also concerned with environmental contamination at that facility.

Now one might consider me an environmentalist, and to some extent I am. However, I do believe in the potential of

nuclear power. I do favor our continuing research into nuclear power generation and the use of nuclear materials and technologies of all sorts, in particular, fusion.

However, I have to echo the previous gentleman to the extent that I would like to just add additional emphasis to the necessity of assuring the maintenance of an acceptable and safe degree of criticality safety -- and all the nuclear engineers here will understand what I mean -- at storage sites where significant amounts of radioactive substances are currently being stored in relatively close proximity to one another.

In particular, the far-from-ideal practice of storing hundreds, and even sometimes thousands, of spent-fuel rod assemblies from reactors in storage pools that are in many cases adjacent to the reactors that are still in use. This state of affairs mutely testifies to the immediacy of the need for additional interim storage and long-term

disposal facilities. Of course, this problem, to a significant extent, is due to the inability of the federal government to implement its plan to establish a practical, long-term storage proposal, a storage system.

I would like to express my praise for the Commission's resolution with respect to being more flexible when negotiating with states. I personally favor the Yucca Mountain Project. However, I do not favor having a state, whether it is Nevada or any other, being forced to accept a storage facility. So, I do favor the basic concept of negotiating with them, flexibly trying to legally establish a definitive agreement with that state. If that requires compensation, due appropriate compensation be accorded to that state for the additional financial cost of transporting waste materials to that state, then so be it. We have to be fair here.

I would like to call everyone's attention to the fact that currently we have

an opportunity. Because Japan and Germany are experiencing so much resistance to the continuance of their nuclear energy programs, this is an opportunity for us, through the IAEA, to work with those nations to perhaps establish larger repositories that might be international in scope and to continue the current activities involved in developing fuel banks, which would help to minimize the likelihood of radioactive waste -- (buzzer sounds) -- oh, all right, I'm sorry.

Just one last thing. I would just like to recommend that you give your consideration to establishing advisory boards at nuclear facilities which would provide limited representation to local stakeholder groups, and choose as members of those local stakeholder groups reasonably-qualified individuals with technical expertise.

And I assure you that you will find them. I am sure there are many people here who could serve, academics, retired

engineers, technicians. They are out there. They are available. By including them in advisory oversight boards for nuclear facilities, that would help to increase transparency, and that would reduce the fear that, unfortunately, is prevalent among the general public. And that doesn't include me.

Once again, I thank you for your indulgence, and I apologize for going over by several seconds.

CHAIR SCOWCROFT: Thank you, Mr. Glaab.

The next speaker is Katherine Fuchs, followed by Dominique French.

MS. FUCHS: Hello. I am here today representing the Alliance for Nuclear Accountability, which is a national network of 35 organizations based in communities downwind, downstream, and sometimes right next-door to Department of Energy nuclear facilities.

So, while I, myself, am not an

engineer or a physicist, I work with people who have decades of experience dealing with nuclear waste issues from both the technical and political perspective.

First, or secondly, I suppose, I would like to thank the Commission for volunteering your time and putting the considerable resources, mental and otherwise, into this project, as well as for bringing back the webcasts. I know a lot of our members across the country are watching right now and are very glad that they can participate from afar.

I am going to try to touch on a number of topics, which I am sure you have already received more extensive written comments about from ANA and our member groups.

First of all, I will talk about this new entity or corporation that is going to be dealing with the nuclear waste. We do think it is very important to move away from the Department of Energy handling these

issues. As you well know, trust is a serious problem with DOE and these nuclear communities. So, we applaud you for trying to deal with that challenge.

But I would like to say that this new entity, in order to gain public trust, requires public oversight. We are very much against the idea of a private corporation dealing with our nation's spent nuclear fuel and other defense wastes and things of that nature.

We are also concerned that this new entity not just to enter into partnerships with affected communities, tribes, and states, but that they integrate affected communities, tribes, and states. We think it is very important that these affected communities have representation directly in this new entity and are involved in decisionmaking processes, not just consultation and presenting public comments in forums like this.

So, the second point I wanted to

talk is the fuel cycle and reprocessing issues. I am glad that the Commission doesn't think that reprocessing will reduce the actual amount of waste that we will have to deal with, but I would like to point out that it does actually impact how we can store the waste.

Recently, in August of this year, Sandia Lab issued a report titled, "Generic Repository Design Concepts and Thermal Analysis". And in this report, they determined that mixed oxide plutonium/uranium fuel actually stays hotter 10 times longer than uranium oxide fuel. And therefore, it will require more space to deal with the increased thermal output.

So, one of our concerns about reprocessing is that it could actually increase the amount of space that we need to dispose of this fuel. And so, we urge you to take that under consideration.

Secondly, as you have already

heard from me, reprocessing creates different waste streams that will come with their own challenges to making them safe.

And finally, just a note that France has not closed the nuclear fuel cycle. They still have waste issues that they can't deal with, and they do have transportation problems as well. So, it is not perfect. It is certainly not a model that we can follow step-by-step.

Thirdly, I would like to talk about the issue of commingling. The Alliance for Nuclear Accountability believes that the status quo should remain as far as commingling, particularly because reversing this decision is going to further harm public trust and possibly break legal agreements with states like New Mexico.

On to the spent nuclear fuel issue, which has been addressed quite a bit, we think that is a good thing to address. We want to get the fuel out of pools, and we

think that hardened onsite storage is a way to do that quickly. And we can use that as a way to deal with the issue until we do have a permanent repository.

And I will close just by saying that the only surefire way to make sure we don't have to continue having commissions like this in 40 years, in 100 years, in 400 years is to stop making more waste.

Thank you.

CHAIR SCOWCROFT: Thank you, Ms. Fuchs.

The next speaker is Dominique French, followed by Geoff Fettus.

MS. FRENCH: Thank you, Commissioners for your time.

Good afternoon.

My name is Dominique French. I am with Nuclear Information and Resource Service.

My colleague, Diane D'Arrigo, who was supposed to provide comments earlier, fell ill this afternoon, and that is why she was

unable to provide comments. So, I am here on her behalf and on my organization's behalf.

I am here to present a paper on the harmful effects of radiation on women. Pursuant to information published by the National Academy of Sciences, the BEIR VII report, issued in 2006, women have a 50 percent greater chance of getting cancer and also dying from cancer compared to men. This figure is a huge disparity and demonstrates that federal agency standards are not protective enough of women.

As such, this Committee should provide greater protection and better monitoring. Additionally, moving highly-radioactive waste will result in incidental radiation exposures to the public, as the intense gamma rays from waste and generation of x-rays during transit cannot be avoided.

We expect that these external exposures will result in disproportionate impacts to women. We, of course, know that

children will also be impacted disproportionately.

This matter should be addressed at every level of public policy determination since our society and Constitution guarantee equal protection under the law, and this program will not provide that.

The Yucca Mountain Program acknowledges not only exposure, but death, but these deaths were deemed insignificant in comparison to the entire population of the United States of America.

The Nuclear Information and Resource Service, on behalf of all of our members in all 50 states, rejects this evaluation and expected more from this Commission.

In closing, I would like to enter this paper into the record and provide a citation. Our paper, "Atomic Radiation is More Harmful to Women" can be found on our website, www.nirs.org. Select the "Radiation"

link and then "Harmful Effects".

Thank you again for your time.

CHAIR SCOWCROFT: Thank you very much, Ms. French.

Our next speaker and the final speaker is Geoff Fettus.

MR. FETTUS: Hi. My name is Geoffrey Fettus. I'm a Senior Attorney at the National Resources Defense Council.

I would like to thank the Commission and its staff or its serious work over the past year and its willingness to engage with NRDC and others.

Since I only have four minutes, I will be very concise.

And thank you, Commissioner Peterson, for your kind words.

I would like to quickly address the concerns raised by Commissioner Meserve in the Disposal Subcommittee report and his concern over what he cited as dual regulation with the specific exemptions from

environmental laws that myself and some others have suggested that are currently enshrined in the AEA, if those are actually done away with, as I suggest.

I would like to take these four minutes to do the best that I can to mollify those concerns, especially your sense that a political change in parties could dramatically affect any regulatory regimes.

First, and this is certainly something that most of you know, if not all, dual regulation is already in place. The problem is that it just doesn't work as well as it should, and we have half a century of evidence to demonstrate that proposition.

As this Commission wells knows, and especially after the education you have had over the past year, DOE authority extends to source material, special nuclear material, and byproduct material at the weapons complexes and the legacy sites.

The NRC has regulatory

responsibility for commercial operations and medical waste and anything else that would touch radioactivity.

EPA, by contrast, has the lion's share of responsibility for ensuring that all federal agencies remediate hazardous substances to levels that are protective for public health and the environment.

And under CERCLA and under RCRA, as opposed to the NRC and DOE's dose/response relationships, potential threats to the public and environment are evaluated in terms of risk. Because of those fundamental regulatory differences between the agencies, we have a long history of risk- versus dose-based remediation levels, and there are conflicts in selecting what are the appropriate cleanup levels. And many of you, including Commissioner Meserve, are very aware and sensitive to those long conflicts.

I would suggest to you, because I have such a brief period of time, that if EPA

and the states had clear legal authority and could treat radioactivity as they do other pollutants under environmental law, and states had meaningful regulatory control over how the waste was managed and ultimately disposed of in their respective states, we might actually move forward and actually move toward the progress that Mo Udall envisioned in 1982, when the Nuclear Waste Policy Act was first passed.

I am not going to suggest to you that harmonizing such a regime would not be contentious or even bloody, for all we know in how things like this work in D.C., but they certainly can be harmonized, because we have been able to do it at Superfund sites around the country, specifically with uranium sites. So, it has been done.

The next thing I would suggest to you -- and here, I would suggest you listen closely to my colleague, Mr. Potter, who I have been on the other side of the table from,

but we are in sound agreement on this issue -- that if you don't get the states' buy-in in terms of meaningful regulatory oversight, we will be back here 10 years, 20 years, 30 years from now. Hopefully, it won't be us, but some people will be back here having these same fights.

So, to tiptoe up to the line or constrain any future process by not addressing the AEA exemptions for the states and EPA, the real downstream consequences are going to be felt by the instability when parties try to make deals, but the legal framework fails to allow for it. Unless you address the AEA, we won't get there.

So, thank you very much, and good luck.

(Laughter.)

CHAIR SCOWCROFT: Thank you, Mr. Fettus.

That concludes our open public comment session, and that concludes the

meeting today.

So, with thanks to everybody who participated and who listened carefully, I declare the meeting adjourned.

(Whereupon, the above-entitled matter went off the record at 2:41 p.m.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Blue Ribbon Commission on America's Nuclear Future

Before:

Date: 12-02-11

Place: Washington, DC

was duly recorded and accurately transcribed under my direction; further, that said transcript is a true and accurate record of the proceedings.

Neal R. Gross

Court Reporter