

UNITED STATES  
NUCLEAR WASTE TECHNICAL REVIEW BOARD

Meeting of the Panel on the Waste Management System

THE WASTE MANAGEMENT SYSTEM:  
From Waste Acceptance to Emplacement at Yucca Mountain

February 25, 2003

Best Western Tuscany Hotel and Casino  
255 East Flamingo Road  
Las Vegas, Nevada 89109

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1 geochemist with particular expertise in applying geochemistry  
2 to a wide range of geologic, climatological, and  
3 anthropological studies.

4           Ron Latanision is a Professor of Materials Science,  
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20 expertise include hydrogeology and environmental geology.

21           Also to be present as soon as he arrives from  
22 Tucson is Mr. Robert Luna, who has assisted the Board in  
23 recent years in its review of the DOE's transportation  
24 activities. Mr. Luna will be serving today in the capacity  
25 as a consultant to the Board.

1           Finally, as I said earlier, my name is Mark  
2 Abkowitz. I'm a Professor of Civil Engineering and  
3 Management Technology at Vanderbilt University in Nashville,  
4 and also Director of the Vanderbilt Center for Environmental  
5 Management Studies. My expertise is in the areas of  
6 transportation, risk management, and risk assessment.

7           At our meeting today, we want to look at the entire  
8 waste management system, from waste acceptance to emplacement  
9 within a Yucca Mountain repository. Last month, at our full  
10 Board meeting, we received an overview presentation on  
11 operating the waste management system. Today, we want to  
12 take a more in-depth look at the same subject.

13           Our agenda contains four presentations by the U.S.  
14 Department of Energy, beginning with waste acceptance,  
15 primarily at nuclear power plants, transporting the materials  
16 to Yucca Mountain, then moving the materials through the  
17 surface facilities and finally underground for final  
18 disposal. The afternoon part of the session has been set  
19 aside to hear the views of those who might be affected by the  
20 operations of the repository and the associated  
21 transportation system.

22           You may have noticed in the agenda that several  
23 important organizations are not included, and that includes  
24 the U.S. Department of Transportation, the U.S. Nuclear  
25 Regulatory Commission, and others who have been involved in

1 spent fuel transportation for many years. The Board's  
2 charter is to review the activities of the Department of  
3 Energy. The Board is fully aware that the DOE has certain  
4 obligations regarding transportation of spent nuclear fuel,  
5 including use of transport casks that have been certified by  
6 the Nuclear Regulatory Commission. However, the Board has no  
7 responsibility or authority to review the NRC's certification  
8 process, nor does it have an oversight role regarding the  
9 Department of Transportation.

10           Therefore, for today's agenda, we want to  
11 concentrate on the Department of Energy, the organization we  
12 were established to oversee. At future meetings, we may  
13 invite presentations by organizations who can help us better  
14 understand regulatory and other constraints within which the  
15 DOE must develop and operate its Waste Management System. At  
16 future meetings, we also intend to hear from oversight or  
17 stakeholder groups who could not be included in today's  
18 agenda due to the time limitations.

19           I might add that we see this as the beginning of a  
20 process of overseeing the Waste Management System. As  
21 opposed to a special panel topic, we see this as a  
22 programmatic activity that will be engaged in for quite some  
23 time, and we plan to have some of our meetings at other parts  
24 of the United States in order to make sure that we are  
25 inclusive in that process.

1           I must say a few words about public comment and the  
2 ground rules of our meeting today. We have scheduled our  
3 public comment period at the end of the meeting in the late  
4 afternoon. Those wanting to comment should sign the public  
5 comment register at the check-in table in the back where  
6 Linda Coultry and Davonya Barnes are seated. That's back  
7 here to my far left. And they will be happy to assist you.

8           Let me point out, and I'll remind you again later,  
9 that depending on the number of people who sign up for  
10 comment, we may have to limit the amount of time that you  
11 have to make your comments during the comment period.

12           As always, we welcome written comments to the Board  
13 for the record. Those of you who prefer not to make oral  
14 comments or ask questions during the meeting may choose the  
15 written option at any time. We especially encourage written  
16 comments if they're more extensive, and our meeting time  
17 would not allow them to be spoken orally.

18           Finally, I have to offer our usual disclaimer for  
19 the record so that everybody is clear on the conduct of our  
20 meeting, and the significance of what you're hearing. Those  
21 of you who have attended our meetings before know that the  
22 Board members do not hesitate to speak their minds. When  
23 they do so, however, they are speaking on behalf of  
24 themselves, and not on behalf of the Board. When we are  
25 articulating a Board position, we will be sure to let you



1 know. You can find final Board positions in our written  
2 letters and reports, which can be accessed through the  
3 Board's website.

4           So, having those particulars out of the way, I'd  
5 like to launch into our program. And our first speaker today  
6 is going to be Chris Kouts, who will be talking about the  
7 overall waste acceptance process.

8           Chris has served in various management and  
9 technical positions during the more than 18 years that he has  
10 served with the Office of Civilian Radioactive Waste  
11 Management, otherwise known as OCRWM. In those positions, he  
12 has been responsible for policy-related activities, including  
13 the development of program strategic and contingency plans.  
14 He also has supported interactions with Congress on policy  
15 matters, has managed OCRWM's activities for transportation of  
16 nuclear waste, and has been involved in interim storage of  
17 commercial spent fuel. Chris will begin at the beginning of  
18 this entire process, that is, waste acceptance as OCRWM views  
19 the entire activity.

20           Chris?

21           KOUTS: Thank you, Dr. Abkowitz. Can we go to the next  
22 slide, please?

23           With interactions with staff, my understanding is  
24 that the Board was interested in a variety of topics.  
25 Organization with the Office of Civilian Radioactive Waste

1 Management; the standard contract, and I think you had a  
2 presentation a little bit on this last month, and I'll try  
3 not to belabor that too much, but it is an important area of  
4 the waste acceptance process. It also determines  
5 requirements that we have to put into our system. There's  
6 also a request for schedules for various sources and ages of  
7 waste; condition of the waste, dry versus wet storage,  
8 damaged fuel, bare or in canister; a little bit about at-  
9 reactor cask loading; and also the differences between DOE  
10 high-level nuclear waste materials and commercial materials.

11           A little bit on the organization. In the west  
12 here, we have the--of course, Margaret Chu sits as director  
13 of the program. We have the Office of Repository  
14 Development, who the new Deputy Director of that is John  
15 Arthur. The Office of Project Control and Monitoring, Office  
16 of Project Support, Office of Facility Operations. The  
17 design aspects of the license application are under Joe  
18 Ziegler, who is now acting in the Office of License  
19 Application and Strategy.

20           In the east, we have the Office of Strategy and  
21 Program Development. Ron Milner is the Acting Deputy  
22 Director there. I am the Acting Director for the Office of  
23 Systems Analysis and Strategy Development. That's where the  
24 waste acceptance function for the system presently resides.  
25 Then we have the Office of National Transportation, which

1 Jeff Williams is also acting in, and he'll be giving a  
2 presentation on that.

3           So, the three components of the system that you're  
4 interested in here, basically waste acceptance, starts with  
5 my office, transportation, then the hand-off is to Jeff, and  
6 then it goes to Joe Ziegler's organization, who's developing  
7 the license application.

8           I should also note that all the acting positions  
9 you see there, as of today, all those positions will have  
10 closed and there will be decisions made about who will sit in  
11 those positions. So, hopefully, we'll have a fully staffed  
12 organization with permanent managers in place.

13           This is just a general schematic to show you how  
14 the system fits together. Waste acceptance occurs typically  
15 at the gate of the reactor facilities, or the DOE facilities.  
16 It is then handed off to the Transportation System, who have  
17 to get it to our surface facilities at the repository. The  
18 surface facilities then package it and, of course, it's then  
19 taken underground for disposal.

20           I'd like to talk a little bit about the standard  
21 contract. As I said earlier, you did have a presentation on  
22 this, but I want to go through basically what the contract is  
23 and what the purchaser's responsibilities, and also what the  
24 Department's responsibilities are under the contract.

25           Currently, we have 68 contracts covering nuclear

1 power plants, with 38 utility purchasers. We started out  
2 with 58, but with consolidation within the utility industry,  
3 the nuclear utility industry, we're now down to 38 contract  
4 holders, and that of course means that as plants were bought  
5 by different corporations, and different corporations  
6 controlled more plants, the contracts basically flow to those  
7 new organizations.

8           We also currently have eight contract with seven  
9 non-utility purchasers. These are mainly fuel fabricators,  
10 people like General Atomics. We have with GE, we have two  
11 contracts with GE. You're probably familiar with the GE  
12 facility in Chicago. Babcock and Wilcox has a contract, et  
13 cetera.

14           Simplistically, the contract defines the allocation  
15 methodology for how the acceptance rights will come into the  
16 system, the waste acceptance criteria, the scheduling and the  
17 waste acceptance procedures, the roles and responsibilities  
18 of the parties, and also the fee structure.

19           Starting with the purchaser's responsibilities,  
20 their number one obligation under the contract is to pay  
21 their fee, which is one mill per kilowatt hour of energy  
22 produced and sold at nuclear power plants. I won't talk  
23 about the defense side. The defense contribution is given  
24 through a different appropriation, not through the nuclear  
25 waste fund, and that, of course, has to be paid up by the

1 time that we begin to accept any DOE materials.

2           The other responsibilities under the contract for  
3 the purchaser are to provide data on the actual and projected  
4 discharges. This starts 63 months before the delivery year  
5 that we begin to accept waste, at which point we get a  
6 delivery commitment schedule that identifies the location and  
7 the range of spent fuel that we will expect to see. Then 12  
8 months before we actually begin to take waste in that year,  
9 we have to get a final delivery commitment schedule. And  
10 then there's another step, which I'll get to in a moment.

11           Prior to 1998, the Department had accepted 2,900  
12 metric tons of delivery commitment schedules as allocated in  
13 our acceptance process. The schedule of those deliveries  
14 will be dependent on the outcome of the ongoing litigation.  
15 We are involved right now in approximately 20 lawsuits with  
16 utilities. As you may be aware, the Department lost the case  
17 in terms of being in breach of the contract, and right now,  
18 we're in the damages phase. There is a possibility that we  
19 can still appeal that breach decision, and that decision has  
20 not been made. All our litigation is handled by the Justice  
21 Department.

22           60 days prior to delivery, Appendix F of the  
23 contract requires that we really get the specifics about what  
24 we're going to be taking in terms of the actual assemblies  
25 themselves, the year of their discharge, also their cooling

1 years, and so forth. So, it's not until actually 60 days  
2 before we will pull up to the gate with a cask that we will  
3 actually know what fuel we're going to be picking up. That  
4 is in the hands of the purchaser.

5           Also, another responsibility of the purchaser is to  
6 propose the type of cask that they want to be handled in  
7 their facility, whether it's a rail cask or a truck cask.  
8 And I think the Board needs to understand that DOE has no  
9 responsibilities within the reactor site itself. The  
10 liabilities associated with anything that goes on within  
11 there are handled totally by the purchasers.

12           So, we will provide a cask and we will provide  
13 training and information on how to deal with that cask and  
14 any equipment. Any handling of that cask within the facility  
15 is done by the utilities themselves, not the Department. The  
16 Department takes title at the gate when we take possession of  
17 the materials, and then go move it to our facilities.

18           Also, they package their spent nuclear fuel for  
19 transportation and transfer title, which I just mentioned.

20           The Department's responsibilities under the  
21 contract are to issue an annual capacity report. The last  
22 one we issued was in 1995. That also provides an acceptance  
23 priority ranking which lets people know at least for the  
24 first ten years what our plans are in terms of taking  
25 materials into the system.

1           The allocations are earned by the purchasers by the  
2 date that the purchaser's assembly, individual assembly, went  
3 sub-critical in the reactor. That date determines their  
4 right coming into the, or the ordering, if you will, of  
5 coming into the system.

6           Our responsibilities also are to provide NRC  
7 certified casks suitable for use at the purchaser's site, any  
8 procedures, any training, any technical information, special  
9 tools, equipment, and any sufficient documentation that  
10 needed on that equipment supplied. We will train their  
11 people in order to handle these casks. But, again, we will  
12 not do any of the handling ourselves.

13           Our other responsibilities are to accept title to  
14 the materials, transport it to our facilities, and then to  
15 dispose of it, dispose of the spent nuclear fuel and high-  
16 level waste in our facilities.

17           This basically gives you our estimated schedule for  
18 the acceptance of commercial nuclear materials. The little  
19 asterisk down here is very important, and you should be aware  
20 of it, that the rates in the schedule are targets only and do  
21 not create any binding legal obligation on the Department of  
22 Energy. These are our goals and what we intend to do.  
23 Beginning in 2010, which would be 400 metric tons in 2010,  
24 600 in 2011, 1,200 in 2012, 2,000 in 2013, and from there on  
25 about 3,000 tons per year. And that's for the statutory

1 limit on the repository, taking those materials up to 63,000  
2 metric tons of heavy metal for the commercial side.

3           Just to give you a sense of where we are on a  
4 national basis with our present estimates of commercial spent  
5 nuclear fuel, we have 72 operating reactor sites, which  
6 comprise about 104 reactors. 14 of those reactors are shut  
7 down. As of the end of 2002, we had 47,000 metric tons of  
8 spent fuel inventory. About 43,000 are in pool storage, and  
9 about 4,000 metric tons are in dry storage. The generation  
10 rate is roughly about 2,000 metric tons per year.

11           By the end of 2010, there will be about 64,000  
12 metric tons of inventory, 53,000 of which will be in the  
13 pools, and 11,000 of which are projected to be in dry  
14 storage.

15           The next two slides give you a sense of what the  
16 projected age and amounts and also burn-up would be of fuels.  
17 If you look at the end of 2002, you can see that we're  
18 mainly going toward higher burn-ups, right now, 45 gigawatt  
19 days, 45,000 megawatt days.

20           And if you flip to the next one, you'll see what  
21 happens in 2010, you'll see we're getting much high burn-up  
22 fuels, up to the 50,000 range, the average now being 50  
23 gigawatt days. So, the trend in the industry to higher burn-  
24 up fuel, which creates some issues for us in terms of actual-  
25 -the heat of the assemblies when they come out, and, of



1 course, the cooling time is very critical, not only for the  
2 repository, but also for our ability to move them efficiently  
3 with the spent fuel casks.

4           Typically, the closer you get to a five year cool  
5 fuel, the more you'll have to de-rate casks. So, it's very  
6 critical that we work with the utilities, hopefully to  
7 maximize our cask loads, and also to get the best mix we can  
8 for the repository. But we still have to operate under the  
9 confines of the contract, and as you know, we cannot make  
10 unilateral changes under the contract. We'll have to work  
11 with utilities to do this, and hopefully when the smoke  
12 clears from the ongoing litigation, we will be able to do  
13 that.

14           This gives you an idea of what the status of dry  
15 storage will be. There are about 23 ISFSI's, what they call  
16 independent spent fuel storage installations, in 19 states,  
17 with 4,000 metric tons at the end of 2002. We're look at  
18 about 45 of those facilities by the end of 2010.

19           There was some interest in what we look at as  
20 damaged spent nuclear fuel. There is no specific guidance in  
21 the contract regarding damaged fuel. We expect there's kind  
22 of a, as a guide, that we will use the same interim staff  
23 guidance that the NRC used. We will use that with the  
24 utilities to try to determine what is failed fuel, if you  
25 will, or non-standard fuel in that regard.

1           The typical remedy on that is to place it in some  
2 kind of a fuel can so that particulates and materials do not  
3 fall out of it. It confines any damaged spent nuclear fuel  
4 in a known volume. That means typically if you have a failed  
5 assembly, if you know it's a failed assembly, then what you  
6 need to do is to put it in a can, and that can will  
7 essentially be the same size as an assembly, so it can go  
8 into a transportation cask.

9           Quantities of these materials are relatively small.  
10 About 1 per cent of the historic discharges are estimated to  
11 require canisters, and I think as we move into the future,  
12 we'll see well under 1 per cent of those materials that will  
13 be quote, unquote failed.

14           In terms of that reactor cask loading, the  
15 Department, as I mentioned earlier, our responsibilities  
16 under the contract are to provide suitable NRC certified  
17 casks. That cask loading is performed by the purchasers. At  
18 this point, we have no plan to do any dry transfer at  
19 facilities. However, to facilitate that process, back in the  
20 Nineties, we did develop a Topical Safety Analysis Report of  
21 a dry transfer system that could be used on utility sites, or  
22 virtually at any site to transfer assemblies or potentially  
23 canisters of fuel into transportation casks. We did that in  
24 1996. We got an assessment report back in 12/02, and we  
25 submitted our first revision to that TSAR earlier this year.

1           In terms of the acceptance schedule for government  
2 managed nuclear materials, at this point, we don't have any  
3 agreed upon schedule with the Office of Environmental  
4 Management. To give you a sense of what we're looking at  
5 within these. There's 7,000 metric tons that have been  
6 allocated within the first repository statutory limit. We're  
7 looking at about 2,300 metric tons of DOE spent nuclear fuel,  
8 which includes also Naval spent fuel.

9           We did negotiate with the Navy the acceptance of  
10 their materials. That starts with three canisters in 2010,  
11 and then ramps up, as you see there. The glass, as you see,  
12 there are about 8,315 canisters, which comprise the roughly  
13 4,600, 4,700 rest of the metric tons of heavy metal that fall  
14 into the DOE allocation. And, again, we are going to be  
15 negotiating that with the Office of Environmental Management  
16 in the next several years in terms of what the exact  
17 acceptance schedule will be.

18           For those materials, the current baseline is to  
19 take all of DOE spent nuclear fuel in sealed, stainless steel  
20 canisters. This is still in our baseline. This is what  
21 we're planning, which you'll see in the license application.  
22 Navy spent nuclear fuel will be in their own multi-purpose  
23 canisters.

24           Formerly commercial spent nuclear fuel, we have  
25 taken certain amounts of commercial fuel mainly at the Idaho

1 facility. We used it for research and for various other  
2 reasons. There are about 70 metric tons of that. That will  
3 also be taken to Yucca Mountain. And the high-level waste  
4 will be vitrified, and the other high-level waste will be  
5 vitrified in borosilicate glass and enclosed in a stainless  
6 steel canister. And I think you've already seen the designs  
7 for the waste package. The co-disposal packages basically  
8 have five of these containers around a DOE spent fuel element  
9 in the middle.

10           It also asked about the differences between DOE  
11 materials and commercial spent nuclear fuel. Typically,  
12 there are two main commercial types, PWR and BWR, although  
13 there are variations within that. The DOE materials that  
14 come out of the weapons complex, essentially there are about  
15 250 different types, and we categorize them in the EIS into  
16 16 categories. So, there's a wide range of different types  
17 of spent nuclear fuel, their sizes, their weights.

18           The decay heat output is typically much lower than  
19 what we would expect for commercial fuel. The burnup is  
20 generally lower than we see historically and we will see in  
21 the future for commercial spent fuel. The amount of the  
22 initial enrichment ranges basically all over the map, from  
23 1.25 per cent to greater than 90 per cent. Right now, we're  
24 looking at enrichments roughly about 4 to 4 1/2 per cent on  
25 the commercial side, going up to maybe 5 1/2 per cent. So,

1 the DOE spent fuel is a very wide range of enrichments.

2           Chemical makeup, you're also seeing a lot of  
3 different types of cladding. Uranium metal, uranium oxides  
4 are the actual materials in the assemblies. Zircaloy alloys  
5 304 stainless, 316 stainless, aluminum, graphite, et cetera.  
6 Typically, with commercial spent fuel, you're looking at  
7 zirconium alloy for a cladding material.

8           That completes more or less my presentation on the  
9 waste acceptance piece of this. Jeff Williams, again, will  
10 be talking about transportation, where we take these casks,  
11 move them to our facilities, and then you'll have  
12 presentations on our surface and sub-surface designs this  
13 afternoon. And I'd be happy to answer any questions you  
14 might have.

15       ABKOWITZ: Chris, thank you very much. We'll now have a  
16 question and answer period involving our Board members.  
17 Would anybody like to lead it off?

18       BULLEN: Bullen, Board.

19           Actually, I'd like to start probably with Figure  
20 11. Actually, we're looking at the projected inventories of  
21 spent nuclear fuel that are going to be in dry storage by the  
22 end of 2010, and I guess the question that I have is that a  
23 lot of this isn't in dry storage yet. And, so, is the DOE  
24 talking to the utilities to try and see if they can get an  
25 interface, so that rather than having to accept a

1 canisterized dual purpose container, that they could actually  
2 deal with what's put into dry storage? I mean, this is a  
3 little bit of forethought, and I know it harkens back to what  
4 might be called the multi-purpose container. But is there  
5 any conversations that are underway along those lines?

6 KOUTS: Not at this point. I would also like to  
7 emphasize the point that you're dealing with commercial  
8 entities here who are making decisions that are really best  
9 for their individual needs. For instance, going back to what  
10 fuel remain in the pool, whether or not they'll keep older,  
11 colder materials in the pool, which would I think initially  
12 be what we would be interested in taking into the system  
13 initially.

14 It's difficult when you have 38 contract holders  
15 and 38 different perspectives, in addition to the non-utility  
16 organizations to buy into this. I think as our plans for our  
17 facilities get closer to what I would say a maturation stage,  
18 and we know exactly what we want, then I think we will begin  
19 to discuss with utilities about ways to make the system  
20 operate more efficiently.

21 At this point, given the fact that we're still  
22 developing our designs and trying to understand a little bit  
23 more about what exactly we're doing, it's difficult to go.  
24 In other words, you have to know exactly what you want so you  
25 know what you have to ask for. And I think in the next few

1 years, we will be in that position.

2           I would also indicate that the Department right now  
3 is in a very interesting stage in the litigation process. We  
4 are, at this point, trying to determine--the courts are going  
5 to determine what damages are acceptable under the contract.  
6 Until that smoke clears, it's difficult for us to raise  
7 these kinds of issues. But, your point is very well taken.  
8 I think that's one of the things we may look at in the  
9 future.

10          BULLEN: Bullen, Board.

11           Can you go back to 8 then? Because you raised the  
12 issue that the contract was negotiated with the oldest fuel  
13 first principle. And, so, if that's the case, can you  
14 require the utilities to give you the oldest fuel first,  
15 because that got them into the cue?

16          KOUTS: No. Under the contract, that creates their  
17 right and their position in line. It doesn't actually  
18 identify that fuel. So, the utility or the corporation that  
19 owns that utility can basically chose from any of his fuel  
20 pools. And as long as he meets the minimum requirements of  
21 the contract, which is five year cooled, that would be  
22 acceptable under the contract.

23          BULLEN: Okay.

24          KOUTS: So, we cannot at this point require the  
25 utilities to give us the specific elements, because many of

1 those elements may indeed be in dry storage out in their  
2 fields, and it would be much easier for them to take fuel out  
3 of their pools.

4           So, the simple answer to your question is no, we  
5 can't require that.

6           BULLEN: Okay. Bullen, Board, again. Can we go to 15  
7 then? You raised an issue that you talked about the  
8 quantities are relatively small for the damaged fuel that you  
9 may have to accept, except a lot of the high burnup fuel  
10 hasn't even been fabricated yet, let alone irradiated in a  
11 reactor. And, so, as you go to higher burnups, you get  
12 higher internal gas pressures in the fuel pins, because of  
13 fission gas production, and you get more damage to the  
14 cladding. And, so, do you think that these relatively small  
15 quantities of damaged fuel are going to be the norm, or do  
16 you think that you're going to end up with more leakers, and  
17 this will be a larger percentage than 1 per cent of the  
18 historical discharge?

19           KOUTS: You raise very good points. I think we'll just  
20 have to wait and see. Of course, this would be other than  
21 standard fuel under the contract. It's non-standard. So,  
22 DOE does have some, let's say, rights under the contract to  
23 say we don't want to take this now. We want to take fuel  
24 that's not damaged. So, we can defer the acceptance of those  
25 into the system to a later date.



1 BULLEN: Okay. Two last quick questions, Mr. Chairman.

2 Slide 18, please. You mentioned that you're going  
3 to canisterize all the DOE fuel, and it's going to be in the  
4 co-disposal container. I guess the question I have is how  
5 are you going to ship it? I mean, the shipping requirements  
6 for these particularly highly enriched uranium and the  
7 plutonium bearing fuels are going to have to have some sort  
8 of burnable poisons or something in their transportation  
9 casks, and I don't know of any cask that is licensed to  
10 transport sealed stainless steel containers for co-disposal.  
11 Is that a development program that you have to have underway  
12 soon?

13 KOUTS: Jeff will probably talk about this when he gets  
14 up. But, yes, we will have to develop casks that will take  
15 these materials, and that's something that has not been done  
16 yet.

17 BULLEN: Okay. Then the last one is Slide 19. You will  
18 notice that particularly for the burnups or the high fuel,  
19 you've got the future enrichments up to 5 1/2 per cent, with  
20 burnups of 57 gigawatt days per metric ton, and 62 gigawatt  
21 days per metric ton. Those are high burnup, high power  
22 fuels, and the--well, I guess I don't know the exact design  
23 or the waste package that's going to go into the mountain,  
24 but at one point, it was about 12 kilowatts per waste  
25 package, and rumor has it it may go up to about as high as

1 18. Is there any opportunity for you to be able to blend  
2 those high burnup fuels in your waste acceptance, not when  
3 you get it to the mountain, but in your waste acceptance, so  
4 that what gets shipped includes the high burnup as well as  
5 maybe some of the cooler fuel, so you have a chance of making  
6 the thermal waste package limits when you load?

7 KOUTS: Well, you'll also be limited by the cask. And I  
8 think our primary interest will be to maximize the cask  
9 loads. If you start putting higher burnup, hotter fuel into  
10 the casks, we'll probably have to de-rate the cask. Which  
11 means you'll end up having a less efficient transportation  
12 system. And, of course, we'd like to minimize shipments.  
13 So, I think the best way to handle this, my sense is, my own  
14 personal opinion is to have the capability, a greater lag  
15 capability at the repository, so we can cool those materials  
16 if necessary, and have the capability to blend them with the  
17 different heat loads of the individual assemblies.

18 BULLEN: Thank you. I couldn't agree with you more. I  
19 think lag storage at the facility might be a very good  
20 engineering decision. Thank you, Mr. Chairman.

21 ABKOWITZ: Okay, thank you, Dan. Are there other Board  
22 members that have questions at this time?

23 Okay, I'd like to ask a couple of questions myself,  
24 and then the Staff I know have some questions as well. This  
25 is Abkowitz, Board.

1           I'm a little bit concerned about the handoff points  
2 between DOE and the utilities. As I understand it, Chris,  
3 from your presentation, essentially DOE backs a truck up to  
4 the fence and says here's some empty canisters for you, and  
5 then later on--

6           KOUTS: Or a train.

7           ABKOWITZ: Or a train, yes, I understand. And then  
8 later on, you have these filled canisters that get sent, you  
9 know, the fence opens up again and you take these filled  
10 canisters and you go off with them.

11           To what extent is there some type of quality  
12 assurance to know exactly what you've got?

13           KOUTS: Well, let me try to address it this way. On the  
14 commercial side, we're dealing with commercial licensees and  
15 their records, their reactor records, in terms of the  
16 individual assemblies, and the pedigree of those records is  
17 very, very good. I think, you know, the NRC could speak to  
18 that here. But the licensees, the people who operate these  
19 reactors, have to keep very detailed records about the  
20 history of these assemblies.

21           So, once we have that history, we know exactly  
22 what's in that assembly. We know the burnup. We know its  
23 age. And we have a very high confidence level that that  
24 assembly is what it's intended to be. And, of course, we  
25 will possibly be observers, if you will, at the loading, we

1 will have our people involved, not actively participating in  
2 doing the work, but certainly will have an interest in  
3 watching these loadings and making sure that the materials  
4 are indeed what they are. But my own perspective, the  
5 industry knows exactly what they're doing in this regard.  
6 Their records are very good, and I don't think this will be  
7 an issue.

8 ABKOWITZ: Okay. So, contractually speaking, however,  
9 you'd basically take what's given to you?

10 KOUTS: That's correct, following the process with the  
11 delivery commitment schedule, the final delivery commitment  
12 schedule, the Appendix F information. We have a paper trail,  
13 if you will, so we know exactly the range, and then down to  
14 the exact assemblies that we will be getting. So, we have a  
15 high confidence that those materials that we will be getting  
16 will indeed be what the utilities are telling us what they  
17 are.

18 ABKOWITZ: Okay. Abkowitz, Board. I have one other  
19 question.

20 There's been obviously some concern about 2010 on  
21 the immediate horizon and how we're going to get all these  
22 plans in place so that the operation can begin in a timely  
23 fashion. From the waste acceptance standpoint, are there  
24 issues that you're dealing with now that are on that critical  
25 path? And, if so, what are they?

1           KOUTS: The best way to answer that I think is that I  
2 think we have plenty of time to deal with the issues that we  
3 have to deal with in waste acceptance, and I think as soon as  
4 the damages phase of the litigation is over with, I think  
5 we'll get to dealing with a lot of the other issues that will  
6 make the system more efficient. So, I don't see any  
7 outstanding issues right now that are a major problem to us  
8 accepting waste in 2010.

9           ABKOWITZ: Okay, thank you. The Staff has questions.  
10 Carl?

11          DI BELLA: Carl DiBella, Staff.

12                   This has to do with damage to fuel, sort of. The  
13 fuel that's not damaged is the standard fuel. Is there any  
14 sort of estimate of how much of the standard, what fraction  
15 of the standard fuel will become damaged during shipment?  
16 And, is so, what's the technical basis for that estimate?  
17 And will you have facilities early in the life of the  
18 receiving facilities at the repository to accept that kind of  
19 fuel, that is, fuel that became damaged in some way during  
20 shipment?

21                   And I understand very much if you want to leave the  
22 question off for subsequent speakers, but it's just because  
23 you brought up damaged fuel that I thought it would be  
24 worthwhile bringing it up here.

25          KOUTS: Typically, we would defer, if we know what

1 assembly is damaged, we would defer acceptance of that until  
2 a later time in the system. But I think the simple way to  
3 answer that is that the NRC, when they license our  
4 facilities, they will ask us these same questions. What if  
5 there is damage to an assembly in transport, how will you  
6 operate your facility? So, we will have to demonstrate the  
7 capability of our facilities to deal with these kinds of  
8 events, and that will be part of the licensing process. So,  
9 I'm sure the people who will be talking this afternoon will  
10 talk more about that.

11           But these kinds of what-if scenarios are the types  
12 of things that we'll have to deal with directly with the NRC  
13 as to how our facilities will handle them. So, in answer to  
14 your question, we will have to be able--I don't have any  
15 estimates, and I haven't seen any estimates about what damage  
16 might occur to these materials. My sense is that it won't be  
17 very many that would be damaged, because if you were pulling  
18 it out of a pool and putting it into a transportation cask,  
19 you would see if there was a problem with the assembly.  
20 There's not going to be a lot of, hopefully, not a lot of  
21 rustling with these assemblies, or not banging them around,  
22 if you will, while they're in a transportation cask.

23           But the simple answer to your question is our  
24 facilities will have to be capable of dealing with any off-  
25 normal event that might have occurred inside the cask during

1 transit.

2 ABKOWITZ: Dan, did you have a question?

3 METLAY: Dan Metlay, Board Staff.

4 Chris, this is sort of a two-parter relating to  
5 money. My recollection was that sometime in the mid 1980s,  
6 there was a methodology developed to allocate costs between  
7 the rate payers and the government in terms of the project.  
8 Has that methodology been updated? And, if so, what's  
9 changed?

10 And then the second part is, and I guess it's  
11 related, what are the project's plans with respect to doing  
12 another TSLCC and fee adequacy analysis?

13 KOUTS: Okay, the answer to your first question, we do  
14 keep a running tally, if you will, of the defense share, and  
15 we do keep--I don't have that estimate with me, but we do  
16 have that and keep that as a matter of our bookkeeping. And,  
17 of course, that would have to be paid up prior to the time  
18 that we begin to receive DOE materials, and the defense side  
19 is very much aware of that.

20 METLAY: But the methodology for keeping that tab was  
21 the one developed in the mid Eighties; is that correct? I  
22 mean, how do you know how much should go to the defense side,  
23 and how much should go to the civilian side?

24 KOUTS: Jeff Williams might be able to answer that for  
25 you, Dan, and I'll answer the other part of your question.

1 WILLIAMS: This is Jeff Williams with DOE. Yeah, the  
2 methodology has not changed, what was published in the  
3 Federal Register in 1987, I believe. Last summer, we did go  
4 through and refine how we used that methodology to get a  
5 better estimate. I think our last estimate was about 27.8  
6 per cent DOE, and the remainder commercial.

7 ABKOWITZ: Any other Staff questions?

8 KOUTS: And let me answer Dan's second question.

9 Our present plans are to do an update to the TSLCC  
10 potentially by the end of this fiscal year, and then we will  
11 have a new one done consistent with our design for the  
12 license application the following year. But the one we do  
13 this year will be an update to see if there are any  
14 differences that we perceived. And next year when we are  
15 going to submit the license application and have a more fine  
16 pinned design, and so forth, we will do a full TSLCC at that  
17 time and issue it, also a fee adequacy.

18 ABKOWITZ: Dan Fehringer?

19 FEHRINGER: The Board has heard several times from a  
20 certain member of the concerned public, that you plan to put  
21 classified wastes into a Yucca Mountain repository. It's  
22 been my understanding that all the wastes that will be  
23 accepted will have a lot of publicly available information  
24 about their characteristics that are relevant for  
25 understanding how the repository performs, all the



1 radiological characteristics, and so on. Is that correct?  
2 Or will there be truly classified wastes about which people  
3 will know essentially nothing?

4 KOUTS: The simple way for me to answer that, for  
5 instance, let's talk about Naval spent fuel. We freely admit  
6 there will be Naval spent fuel. The specifics about what  
7 that fuel looks like, the enrichments, the size, the shape,  
8 and so forth of it, much of that information is still  
9 classified, and that type of information won't be there. But  
10 for the purposes of the public understanding what the  
11 radionuclide contents are and how they impact TSLCC and  
12 whether or not those are significant issues, that information  
13 will be available. But the specifics of the designs, and so  
14 forth, would not be.

15 ABKOWITZ: Any other Board questions. Staff questions?  
16 Okay, back to the Board. Dan Bullen?

17 BULLEN: Bullen, Board.

18 This is actually a question that was handed to us  
19 by a member of the public. It may be more appropriate for  
20 Jeff Williams' presentation, but since you touched upon  
21 acceptance of waste at reactor sites, the question is what  
22 about the percentage of waste that's going to have to be  
23 shipped by barge, there will be at least some barge  
24 shipments. And that wasn't necessarily mentioned, so you  
25 might want to ask, the question would be about the inner-mode

1 of transfer and how does it get to the mountain, because I  
2 don't think there's any waterways that quite make it there.

3       KOUTS: That's correct. But I guess there may be  
4 opportunities across the country to barge it from an existing  
5 reactor site to a railhead, or something like that. Right  
6 now, the Department has no plans for barging. Jeff can speak  
7 to this, but we would use NRC certified casks if we indeed  
8 wanted to go that route, and those casks would have to be  
9 placed on the barge, and of course transported and  
10 transferred. At this point, I'm unaware of any situations  
11 where we're planning to do that, however.

12       ABKOWITZ: I also have a follow-up question, Chris.

13             I was curious how is DOE characterizing failed fuel  
14 for transportation and acceptance. I understand there's some  
15 issues regarding hot spots, and perhaps the need for  
16 repackaging.

17       KOUTS: I go back to the slide that I had on that. If  
18 we determine it is--

19       ABKOWITZ: What slide number was that?

20       KOUTS: Let's see. We don't have any specific guidance  
21 in the contract to follow. It's Page 15. I believe we will  
22 probably follow NRC interim staff guidance for the definition  
23 of failed fuel. But that's something we'll have to work with  
24 with the utilities on. But that's right now the only thing  
25 that's really out there that I think would be used as a basis

1 for negotiation on that issue.

2 ABKOWITZ: Okay. Any other Board questions at this  
3 time?

4 (No response.)

5 ABKOWITZ: Chris, thank you very much.

6 Before we introduce our next speaker, just a couple  
7 of housekeeping items. You all have been real good about  
8 this so far, but I know yesterday we had some incidents. If  
9 you could just remember to put your cell phones on silent  
10 mode, we would really appreciate it. I've been in meetings  
11 in the past where the house rules were that if your phone  
12 rang, you had to buy drinks for everybody afterwards. And  
13 this is a pretty large crowd, so it could be an expensive  
14 proposition.

15 I also wanted to acknowledge that Bob Luna has been  
16 able to join us, having finally made it from Tucson despite  
17 air transportation woes.

18 Our next speak is Jeff Williams. Jeff has been  
19 with the Federal Government for over 21 years, and with the  
20 Department of Energy in the Office of Civilian Radioactive  
21 Waste Management for over 16 years. He has worked on and  
22 managed several aspects of the waste management program,  
23 including Environmental Assessments and Site Characterization  
24 Plans for potential repository sites.

25 He has also worked on and managed system studies

1 and conceptual designs for a monitored retrievable storage  
2 facility, multi-purpose canister feasibility studies, and  
3 conceptual designs, integration of DOE waste into the OCRWM  
4 system, total system life-cycle cost and fee adequacy  
5 reports, and international activities. Mr. Williams today  
6 will summarize for us DOE's efforts to develop a  
7 transportation plan for moving materials to a Yucca Mountain  
8 repository.

9                   Jeff?

10           WILLIAMS: Thank you. My resume is a little bit out of  
11 date. I really have been in the government 23 years, and 18  
12 years with DOE.

13                   Okay, basically, what we've done in this  
14 presentation is I first started off by looking at what you  
15 requested, and then as we developed the presentation, we  
16 decided not to go one by one down through the items that were  
17 listed, but I think we address each one of them.

18                   The one area where we may be light is the one you  
19 brought up in your question, which is on the DOE  
20 interrelations with DOE, other organizations. I can try and  
21 weave some things in as we go through that.

22                   This is a fairly complex system we're dealing with,  
23 and we're presented with a number of challenges. We've got  
24 72 commercial sites. We've got five DOE sites. There's many  
25 different kinds of fuel, I think that Chris has talked about,

1 and there's many different interfaces. We've got funding  
2 constraints. We've got an evolving regulatory framework.  
3 We've got risk management to deal with, programmatic funding,  
4 the ability to have a railroad present, certification of new  
5 equipment. I think you brought up the DOE spent fuel in the  
6 last presentation. And there's lots of opportunities also.

7           We're not very far along with the transportation  
8 planning. I'm going to talk later on about our budget, and  
9 so forth. But, we're in the initial stages. I think I  
10 brought this up at the last meeting. And, so, there was a  
11 lot of work that was done between 1982 and 1995 when  
12 basically we turned the transportation program off to focus  
13 on characterizing Yucca Mountain.

14           So, we have a lot of historical documents, but we  
15 don't have a cost and schedule and technical baseline for the  
16 transportation program that I'm up here to defend. I think  
17 that puts us in a good position in terms of working with you  
18 guys, in that you can help us formulate a transportation  
19 program.

20           We have the opportunity for open and transparent  
21 communication. Our decisions can be informed, as I was just  
22 talking about, by national and international experiences.  
23 We're going to strive to be a model for safe and secure  
24 transportation, and we'll strive to be a model for successful  
25 transportation that's recognized around the world.

1           We basically have three actions or missions as we  
2 try to put together what we need to do for transportation.  
3 We recognize that we need to manage this program. We need to  
4 perform, and we need to communicate, all with the center goal  
5 being able to transport with public confidence. And I'm  
6 going to go through each one of these individually.

7           There's also many constraints that are associated  
8 between the circles here. And, like I said, I'll go through  
9 them individually. And let's go on to the first circle,  
10 which is the management of the program, which is where we are  
11 right now trying to formulate strategies, develop plans, and  
12 make informed decisions, making informed decisions I mean  
13 informed by experts on the outside, people with experience,  
14 the TRB, the ACNW, the NRC, and so forth.

15           Managing transportation. This year, we are working  
16 on what we call a strategic plan. I'm not sure it's a plan  
17 that's in development right now. The secretary said that we  
18 would develop this plan. This is a fairly high-level plan  
19 that's going to lay out a vision and an approach to planning,  
20 developing and operating our system. It's going to lay out  
21 the path that we'll follow. It will describe the processes  
22 that we're going to use to work closely with federal agencies  
23 and tribes. It will also describe key decision points.

24           One other piece of work that we've initiated this  
25 year is a transportation projection management plan. Neither

1 of these plans are operational plans that say what we're  
2 going to pick up when and how it's going to be transported,  
3 and so forth. The project management plan will define how  
4 the project is going to realize those strategies and meet the  
5 goals. it's going to describe at a high level how and when  
6 transportation components would be acquired and mobilized.  
7 And I'm going to go into some more details about operational  
8 plans that would be developed later on.

9           I briefly mentioned the budget initially, and I  
10 wanted to come back to that, and once again say that in 1996,  
11 Congress basically directed us to focus attention on Yucca  
12 Mountain, and we made a decision to stop funding  
13 transportation at that time. And we had a number of people  
14 working on the program, all who were laid off, contractors,  
15 and so forth. We maintained a very small transportation  
16 staff at DOE at the time.

17           In 2002, we resumed some funding of that, and we  
18 have, this year in '02, we worked on \$1.2 million. For '03,  
19 the Secretary requested \$38 million based on a \$591 million  
20 program. It was last week, or the week before last, the  
21 Omnibus Appropriations Act was signed, and the total program  
22 got \$460 million. And at this point in time, we're  
23 evaluating how that's going to be split out. It looks like  
24 transportation program may come down to somewhere under \$10  
25 million for '03, which we would have to start to ramp up to

1 even spend that amount of money right now.

2           The next slide was trying to address I think the  
3 issue you asked about schedules and milestones, and as I said  
4 initially, we don't have a technical cost loaded baseline  
5 activity schedule that lays out all these thing. We've got  
6 general ideas of what type of work needs to be done and when,  
7 and this is sort of just giving you an indication of some of  
8 the types of work that we envision.

9           We're working on the strategic plan that I  
10 mentioned before, the transportation project management plan.  
11 One of the first things you always do in a project is define  
12 requirements. We've done that in the past. They need to be  
13 looked at again. We need to develop our acquisition strategy  
14 for acquiring equipment and services. And then we also need  
15 to develop the repository receipt facilities and the  
16 interface protocols, both between the transportation system  
17 and the repository, and the transportation system and the  
18 utilities.

19           FY04, again, these things aren't cast in stone at  
20 all. They're just up here to give you some ideas. The first  
21 bullet, initiate cask procurements with initial priorities on  
22 long lead systems. And this addresses I think it was Dan's  
23 question about there are a number of casks that are out there  
24 that are licensed. However, there's no casks out there  
25 licensed for high-level waste or for the DOE spent fuel.



1           In the past, we felt the high-level waste would be  
2 a fairly simple task to modify a spent fuel cask, commercial  
3 spent fuel cask to be able to carry high-level waste glass.  
4 It's done in Europe, and so forth. However, you do bring up  
5 a good question about high enriched, the other type of fuel  
6 that does have some questions, and we have initiated a very  
7 low-level task at Oak Ridge to start to look at that sort of  
8 stuff. However, if you look at our '03, '04 budget, we do  
9 identify that we need to start procurement on long lead item  
10 casks.

11           We also need to update and evaluate the utility  
12 site interfaces. I'm going to talk about that in a little  
13 bit more detail. '05 and out, these are again general sort  
14 of things that need to be done. Continue the cask  
15 acquisition activities. Establish routes. Begin our 180(c)  
16 emergency preparedness grant funding. Acquire the  
17 transportation services. Acquire maintenance capabilities.  
18 And complete our operational readiness for the program.

19           This is a slide that comes straight out of the EIS  
20 just to show what's involved. And the EIS evaluated  
21 transportation both by what they said mostly legal weight  
22 truck or mostly rail, and this sort of shows by legal weight  
23 truck, you're coming from 72 commercial sites and five DOE  
24 sites, and it would funnel down into a repository.

25           If you're coming by rail, you come to rail, and I'm

1 going to talk a little bit about the five corridors that were  
2 also evaluated in the EIS, as well as the three heavy haul  
3 truck corridors that were evaluated in the EIS. As I think  
4 you know, Nevada doesn't have a transportation infrastructure  
5 to support transportation by rail. So, some work will need  
6 to be done to get there.

7           We're going to need to understand the interfaces at  
8 the sites, both at the utility sites and the DOE sites. And  
9 it's not only the site, it's also the near site  
10 characteristics around the site. For example, you mentioned  
11 barge in the last meeting. You may have a facility that has  
12 capability to lift a heavy load, however, near site, they may  
13 have a bridge restriction that limits transportation to 75  
14 tons, and you couldn't carry that large cask. So, those are  
15 some of the sites where there is barge capability, where  
16 we've identified the potential by shipping by barge.

17           As I mentioned before, we also have to deal with  
18 all the various types of wastes, and we don't believe that  
19 there's going to be one single way to do it. It's going to  
20 be a combination of different things, trucks, barge, rail.

21           For the transportation mode options, in the EIS, we  
22 evaluated, as I said before, by mostly truck or mostly rail.  
23 What the mostly truck means, and people have asked, it's  
24 basically all shipments by truck except for those heavy haul  
25 situations such as the Navy casks. Mostly rail is I think it

1 was six reactor sites, six or eight, I don't remember  
2 exactly, would be shipping by truck, and the rest of them by  
3 rail.

4           Each mode has implications for supporting  
5 infrastructure needed and waste delivery schedules, including  
6 the need for intermodal facilities. You may need an  
7 intermodal facility in Nevada if you're shipping by rail, and  
8 transfer to heavy haul truck, or you may need an intermodal  
9 facility at the other end, at the utilities, if you have to  
10 pull it out by heavy haul and then transfer it to rail, or  
11 take it by barge to a railhead. And each one of these things  
12 influences the number and types of casks that are required,  
13 and we've started to look into that. And it also could  
14 impact the surface repository facilities.

15           I think I may have showed this slide last time.  
16 But, it basically shows the number of shipments that would be  
17 involved by shipping through the mostly rail scenario, or the  
18 mostly truck. Under the mostly rail, which was the preferred  
19 scenario identified in the EIS, it would be around 175  
20 shipments a year, 135 by train, and 40 by truck. Well, this  
21 looks like 180. We've said 175 or so, 180 shipments, with  
22 the trains being three casks on a train.

23           I recently got a question, well, that doesn't make  
24 sense. The truck casks hold about 10 tons of fuel. Under  
25 that scenario, you'd say, well, that adds up to 30 tons per

1 train, times 135, you're getting up to around 4,000 tons of  
2 fuel. The reason why this is lower is that I think Chris  
3 mentioned cask de-rating. We also have a set of utilities  
4 where we've assumed that they have a smaller cask, like a 75  
5 ton cask. That's another cask that hasn't been developed  
6 that potentially may need to be developed to make this system  
7 work.

8           The target rates, the next page, target rates for  
9 accepting spent fuel. Chris mentioned this. I won't go into  
10 it. He gave the caveat associated that this is for planning  
11 only, and doesn't obligate us.

12           The next slide I noticed an error in here. My  
13 slide doesn't have the error in it. It has NEPA activities,  
14 and somebody said they thought we shouldn't use acronyms, and  
15 they spelled that Nuclear Environmental Policy Act. That  
16 should be National Environmental Policy Act.

17           Anyway, I think I mentioned the impacts of  
18 transporting spent fuel and high-level waste were examined,  
19 both truck and rail, in the EIS. We believe that the  
20 existing NEPA documentation--I'm addressing here your  
21 question about NEPA activities that need to take place. We  
22 believe that the NEPA work that's been done is sufficient to  
23 make the decision on the mode, truck versus rail, and also  
24 the corridor in Nevada.

25           As we said in the EIS, the mostly rail, if the

1 mostly rail decision is made, then a preferred corridor in  
2 Nevada will be selected in consultation with the affected  
3 stakeholders.

4           Once the corridor is selected, then we believe  
5 additional NEPA documentation is required. The corridors are  
6 in wide areas. In some cases, they need environmental  
7 surveys for threatening endangered species, archeological  
8 things, and so forth.

9           The next slide shows the potential corridors in  
10 Nevada. I'm not sure whether this has been shown to you  
11 before, but we basically evaluated five corridors ranging in  
12 length from about 300 miles, to about 100 miles. The  
13 Caliente route comes down here, and comes across over the  
14 northern side of the Test Site, and then down to Yucca  
15 Mountain. That is about 320 miles. We've estimated a cost  
16 to construct that of about \$880 million. It's 92 per cent  
17 across BLM land, 5 per cent Air Force land, and less than 1  
18 per cent private land.

19           The Carlin route starting up from the north here,  
20 coming down this way, down to Yucca Mountain is 323 miles  
21 long. Our estimation is about \$821 million. It has more  
22 private land. It has about 7 per cent private land, again  
23 about 5 per cent Air Force, and 82 per cent BLM.

24           The Caliente Chalk Mountain, which was an  
25 alternative suggested during the scoping hearings, actually

1 is a deviation from the Caliente route, but comes across the  
2 Air Force lands to Yucca Mountain. It's a bit shorter  
3 because of that cut-through, 214 miles, estimated cost a  
4 little over \$600 million. The problem is it goes through--16  
5 per cent of the route goes across Air Force lands, and we've  
6 received several letters from the Air Force saying that this  
7 could compromise national security, and it was identified as  
8 a non-preferred route in the EIS.

9           Okay, the next route, the Jean route comes up from  
10 the south. Las Vegas is in here, so it's south of Las Vegas,  
11 and it's the shortest route--well, it's the second shortest,  
12 112 miles. It would cost about \$450 million. It has a two  
13 and a half mile long tunnel, and it crosses some mountainous  
14 areas.

15           The Valley Modified route comes off this way from  
16 the south, comes up along the Air Force base up to Yucca  
17 Mountain. That's the least expensive, only \$263 million, or  
18 so. It's a 98 mile long route, and it has 53 per cent  
19 managed land by BLM, 32 per cent is DOE land already, and  
20 less than 1 per cent is private land.

21           Okay, we can go to the next slide now, which is the  
22 next element of the program I'd like to talk about, which is  
23 the performance, which is basically what does it take to do  
24 to make this happen. We also need to develop plans, which  
25 I'm going to talk about in some generalities.

1           I think I've mentioned the understanding of the  
2 interfaces. Again, this is the interfaces with the utility  
3 sites, with the DOE sites, which are less understood than  
4 the, or at least less written down than the utility sites.  
5 And then also the interfaces at the repository area. We're  
6 going to need to acquire equipment and services. We're going  
7 to need to operate this system, and we're going to need to  
8 maintain it.

9           Transportation planning. As I said before, we're  
10 still in the early stages on the transportation planning. We  
11 believe that we'll need to develop operational plans. We  
12 haven't started to do these. These types of things have been  
13 done with other DOE shipments. We know what's in them. We  
14 know how to do it. But they will lay out the requirements  
15 that are used to develop the details of the individual  
16 shipping campaigns. They will lay out the schedules. They  
17 will identify materials to be shipped. They will identify  
18 casks to be used, the mode, the routes, the potential routes,  
19 emergency preparedness, what we're going to do for tracking  
20 and communication.

21           This continues on the next slide. How we're going  
22 to coordinates with the states and localities, it will be in  
23 there. It will actually have identified points of contacts  
24 when you get down to the details. It will be based on  
25 lessons learned, and it will have any other information

1 that's necessary to assure safety and security. Site  
2 servicing plans is another element that I'm going to talk  
3 about in a little bit more detail. The campaign plans. It  
4 will address security. And it will address how we interact  
5 with interested parties.

6           We plan to work cooperatively with the states and  
7 tribes through our planning process, which has successfully  
8 been used at DOE's WIPP program. The word "protocols" down  
9 here refers to some DOE protocols that were signed by the  
10 Secretary last fall, which lay out the process by which we  
11 will do transportation and interact with the states and  
12 tribes, the affected and interested parties.

13           Okay, what we need to do is we need to plan. I  
14 talked about planning. We need to understand the interfaces.  
15 That's the next step. We need to evaluate the sites. In  
16 1994, we developed what we call Site Planning Documents, and  
17 those were actually based on data that had been developed in  
18 probably 1988 through 1990, or so, and they define the site  
19 specific interfaces. The documents identify what kind of  
20 cask can be handled. They look at the transportation  
21 capability between the sites and the nearest rail. They have  
22 various routes identified in there. It has the length in  
23 there. It has things like bridge limitations. It talks  
24 about barge, if that's possible. And those documents are all  
25 on the shelves. They've been developed.



1           They need to be updated. Things have changed since  
2 that point in time. Chris showed you the slide about the  
3 storage at reactor sites. As many reactor sites are  
4 developing storage at their sites, they're modifying their  
5 facilities to be able to accommodate that. They may have  
6 increased their crane capacity, or what not. There may be  
7 differences in the near site infrastructure. So, that's  
8 something that needs to be done, and should be done fairly  
9 soon.

10           And then the next step would be developing the Site  
11 Servicing Plans. Site Servicing plans really get down into  
12 the details, talking about how each site would be serviced.  
13 Again, this is sort of what we're envisioning and how this  
14 could take place. It would establish the cask needs. It  
15 would identify the routes. It would actually identify any  
16 equipment that might be needed. It would identify who's  
17 responsible for what, types of training that's required.

18           Once we establish the interfaces, the next thing we  
19 need to do is go to the acceptance plan. And I think Chris  
20 covered this in detail. Basically, what I wanted to say  
21 here, though, is there's some policy decisions that need to  
22 be made that impact the various non-policy aspects, or the  
23 technical aspects of the program.

24           For example, let's just take one, the start-up  
25 acceptance rate, if that was something different than what we

1 had planned before, it would affect the cask quantities,  
2 obviously. It could affect the cost. If we buy one cask  
3 versus ten, we could get a discount on buying several of  
4 them. And it would also impact our routes. If we accepted  
5 more or less, we may use different routes.

6           Let's go to the next one, which is defining the  
7 cask strategy. The first thing I wanted to say is our going  
8 in planning basis is that we're going to procure existing NRC  
9 cask certified designs from private vendors. Now, I think  
10 we've identified last time, and this time, that there aren't  
11 casks available to handle all the fuel, so if we need  
12 existing casks, such as the DOE spent fuel, the DOE high-  
13 level waste, I think I talked last time about the need for  
14 higher burnup, higher enriched fuel, potentially, I also  
15 mentioned that we believe that industry will also develop  
16 those casks over the next five, ten years as they need them  
17 for their dry storage situations. However, there may be a  
18 need for some targeted casks for some specific situation with  
19 the reactor such as a smaller cask, for example.

20           Okay, let's go on to the next slide here.  
21 Transportation casks. These are the rail casks. I showed  
22 this to you last time. These are the rail casks that have  
23 been developed over the last five years or so, and mainly  
24 these were casks that were developed for storage. However,  
25 the industry has chosen to certify these for transportation

1 as well. So, these are the casks that are certified by the  
2 industry for transportation. These are all dual purpose  
3 casks. They were all designed, as Chris said, to meet their  
4 specific needs with respect to, as they are making their own  
5 business decisions, what was best for them. And the  
6 economics of the situation has driven these to all be very  
7 large casks. They're all 125 tons or more, or in that  
8 ballpark.

9           Okay, the next slide, I showed this to you before,  
10 I just wanted to reiterate the point, though, that these are  
11 the truck casks that have been developed. The NAC legal  
12 weight truck cask, which is one which is being used  
13 frequently by the Department for shipping research reactor  
14 fuel, and so forth, there's eight of those that are built  
15 right now. It only handles 1 PWR and 2 BWR commercial spent  
16 fuel assemblies. The General Atomics-4 is a high efficient  
17 truck cask that was primarily developed by--DOE paid for the  
18 design of this, and actually GA got their certificate after  
19 we stopped funding them in like 1997, or so.

20           We were also developing a high efficient BWR cask  
21 that would carry 9 BWR assemblies, and GA didn't choose to  
22 pursue that after we stopped the funding.

23           So, the point to be made about this is there aren't  
24 a lot of truck casks available, and should we need to ship  
25 more fuel by truck than the mostly rail scenario, as

1 indicated, then there will need to be some additional truck  
2 cask development as well.

3           The next slide just gives you sort of an overview  
4 of the acquisition strategy, and I'm going to talk more in  
5 detail. But in the beginning stage, we do the fleet and site  
6 planning. Then we begin with acquisition and mobilization.  
7 Then we start mobilization, federal facility operational,  
8 followed by operations. And I'm going to go into some more  
9 details about that.

10           The next slide here, basically where this comes  
11 from is in September this year, we put out what we call the  
12 transportation integrating contractor scope of work. It was  
13 a draft document. We put it out for public comment. And  
14 these are the types of work that would be done. Right now,  
15 we're talking about this aspect of it. In a minute, I'm  
16 going to get to the mobilization and operations. But these  
17 are the general types of activities that we felt a contractor  
18 could help us do. And we would love to hear the TRB weigh in  
19 on that. I know the comment period is over on that, but it's  
20 something you may consider to go back and look at that and  
21 give us comments on whether you think we've identified the  
22 right types of work that needs to be done, and so forth.

23           This shows how our acquisition strategy has evolved  
24 over time. I've sort of alluded to this, but I just wanted  
25 to make it a little more clear.

1           In 1986, we developed the cask technology. We had  
2 an M&O contractor that would integrate this work. Our plans  
3 were to hire commercial transportation services, and DOE  
4 would do the maintenance. We actually had a design of a  
5 maintenance facility done by Oak Ridge in 1986, or '85, or  
6 so, and that was the strategy at that time.

7           We moved from '86 into the early Nineties into a  
8 multi-purpose canister approach. However, it was still  
9 generally consistent with this approach here. And then in  
10 1996, when we got our budget cut, we decided we were going to  
11 rely on private industry to do all of this. And our first  
12 RSC, our first, our draft statement of work that was  
13 developed in 1996, basically, to make it simple, basically  
14 said we'll pay you when you deliver the waste and you figure  
15 out how to get it here. Okay, that's a little bit of over  
16 simplification, but that's kind of the basis of that.

17           We went through a couple mods of that, and put a  
18 little bit more DOE in it. I guess the negative reactions to  
19 that were, well, with DOE's schedule, how can the industry go  
20 out and do all this work for you in anticipation that you're  
21 going to pay us in 2010 the amount of money, and how would  
22 they finance all that work. And then there were a lot of  
23 negative comments from the non-governmental organizations  
24 about, well, why leave all that to discussions between the  
25 people that are transporting it, who would be a contractor at

1 that time, and the states and local tribes, why leave that to  
2 a contractor. I want to deal with DOE. So, those were some  
3 of the negative comments.

4           This year, in response to those, we came out with  
5 this new approach, which is the technical integration  
6 contractor, where we still plan to use industry to develop  
7 these. We're not going to go out and hire labs, and so  
8 forth, to develop these casks. But the industry has a lot of  
9 experience doing this. They've certified a lot of casks, and  
10 we plan to purchase those casks from the industry, and we  
11 will ask for them to develop casks that we think are needed  
12 that haven't been needed.

13           We were planning to have the transportation  
14 integration contractor integrate this work, followed by a  
15 transportation services contractor, with DOE providing  
16 maintenance. I'm going to go into a little bit more detail  
17 on this, so we can go to the next slide.

18           Under the cask systems acquisition approach, right  
19 now, we would procure NRC existing cask designs from private  
20 industry to the extent practicable. Existing designs may  
21 need to be enhanced. I think I've mentioned that several  
22 times, high-level waste, DOE spent fuel, possibly higher  
23 enriched, higher burnup, maybe some targeted smaller casks.  
24 I think I've covered here that the recent industry emphasis  
25 has been on the large dual-purpose rail casks, and I think I

1 also mentioned that if there was a mostly truck scenario,  
2 additional technology may be needed to be developed.

3           The transportation and maintenance services  
4 acquisition approach. Basically, we developed this draft,  
5 Transportation Integration Contractor Scope of Work. It's  
6 out on the street. In that Scope of Work, basically, the  
7 transportation integration contractor would be responsible  
8 for doing a lot of the planning, acquiring equipment and  
9 services to support the start of waste acceptance in 2010.

10           In December, we announced that we didn't expect  
11 that the RFP would be issued in '03. Basically, from a  
12 funding standpoint, we were on a continuing resolution, we  
13 weren't moving forward. We had received several comments on  
14 that approach, so we decided we're going to pull back and not  
15 work it quite as quickly. So, right now, we're still  
16 continuing to evaluate that approach, and how is the best way  
17 to use private industry effectively. So, that's why I said  
18 this is a good point in time for TRB to weigh in, because we  
19 are in I'd say a mode where we're in the development of the  
20 program, and we'd like to get input.

21           Carrier selection I think was asked about. In the  
22 transportation integration contractor Scope of Work, we  
23 actually laid out two pieces of work. One would be for the  
24 integrating contractor, and the other would be for the  
25 services contractor, who would come on board later on. The

1 services contractor would do the transportation for us, and  
2 they would do the detailed campaign planning. They would  
3 select the appropriate mode. There may be multiple service  
4 providers that may be required. And criteria would be mode  
5 requirements, geography, quality and safety requirements.

6           One other thing which I didn't address specifically  
7 in here was your question about the relationships with DOE  
8 and the Navy. And with respect to the Navy, again, I don't  
9 have a slide, but the Navy will design their own casks. The  
10 Navy will ship their own casks. With EM, we will design the  
11 casks with the other part of DOE, and we will ship the casks.  
12 Actually, that's been a change in the last couple years.

13           Initially, EM was going to design their own casks,  
14 and we were going to ship them. But we changed. The plans  
15 now are that RW will develop the casks for them, and we'll do  
16 the shipping.

17           The next slide is on routing. You asked about  
18 routing. We don't believe that we will be selecting the  
19 routes until three to five years prior to shipment. How it's  
20 going to be done is DOT regulations will apply. Routes will  
21 be selected to reduce time in transit. Vehicles will operate  
22 over preferred routes, which are identified by DOT as the  
23 Interstate Highway System, which includes bypasses and  
24 beltways. State or tribes may designate an alternative route  
25 in accordance with the DOT regulations.



1           As far as rail is concerned, there is no federal  
2 highway routing regulations, and we will follow, or our plans  
3 are to follow current DOE rail routing practices, which are  
4 to minimize time, distance, number of carriers, interchange  
5 points, and maximize use of best track.

6           For the EIS routes, which were identified for  
7 analysis, basically followed the two codes that came out of  
8 Oak Ridge, Highway and Interline, which follow those rules.

9           Transportation safety. That's one thing that  
10 you've asked about, and I think we're required to get the  
11 confidence from public that we can transport it safely. And  
12 what this slide really talks about and addresses is the  
13 record in the United States, and actually the international  
14 community as well, is that our safety record is impressive.  
15 There's been over 2,700 shipments in the U.S. during the past  
16 30 years. 738 Naval container shipments, over 1 million  
17 miles since 1957. In France and Britain, they average about  
18 650 shipments per year, which is nearly four times what we're  
19 anticipating under the mostly rail scenario. There's never  
20 been a release of radioactive material.

21           We plan to continue to review the successful  
22 shipping programs to learn anything we can from them in terms  
23 of safety, security, efficiency, and so forth. I think you  
24 know the safety criteria come out of DOT, NRC, the IAEA.

25           The next slide again just sort of reiterates the

1 type of shipments that have taken place, and I thought this  
2 was a comprehensive slide, and as I was looking at it one  
3 time right before I came up here, I noticed that the  
4 commercial shipments to West Valley aren't on here, and the  
5 commercial shipments to Morris aren't on here, nor are the  
6 ones in North and South Carolina, the Intra-Utility  
7 shipments. But this is just a listing of the other  
8 shipments. It does list the Shoreham to Limerick shipment  
9 that was done in 1994.

10           The next slide, I think I showed this to you  
11 before, but it also shows the basis of safety, one of the  
12 bases, it comes from the NRC requirements. And a lot of the  
13 safety requirements are based on their cask performance  
14 requirements. I don't think I need to go through the details  
15 of the tests here, but I just thought I would put that back  
16 up, and then go to the next slide, which talks about cask  
17 performance.

18           In the 1970s, Sandia conducted full-scale  
19 demonstrations to validate the scale modeling methods and  
20 collect quantitative data on extreme and accident conditions.

21           In the Eighties, the NRC Modal Study investigated  
22 protection provided against severe highway and railroad  
23 accidents. And then in 2000, NRC once again did what they  
24 called the spent nuclear fuel Risk Assessment, and they  
25 concluded that the cask would retain their integrity in more

1 than 99.99 per cent of the accidents. Basically, they found  
2 that the risk was small, and that it gave them confidence  
3 that the regulatory basis was adequate.

4           Now, NRC is planning to conduct a package  
5 performance study to re-validate their codes, models and  
6 adequacies of the regulations. They are planning, or  
7 considering, to do full-scale cask testing. They'll be  
8 holding four workshops which have been scheduled, it's up on  
9 their website, to solicit input on the testing protocols that  
10 are available. And, actually, DOE requested funds to buy  
11 equipment to support this test.

12           Transportation security. I think this is the one  
13 area that DOE has experience in transporting highly secure  
14 materials. We know how to do it. DOE and NRC have conducted  
15 experiments and analyses to evaluate consequences of severe  
16 accidents and postulated sabotage attacks.

17           Right now, DOE and NRC are participating in an  
18 international effort with the UK, Germany and France to study  
19 the effects of sabotage.

20           Since September 11th, government agencies,  
21 including DOE and NRC, are undertaking a top to bottom review  
22 of the security programs. We anticipate that there's going  
23 to be changes that occur before we're ready to ship, and we  
24 will do whatever is needed to comply with them or maybe even  
25 go beyond them, depending on what the situation is.

1           Transportation security, just to continue. The  
2 transportation planning activities, we will continue to  
3 identify measures that could afford further protection based  
4 on testing, based on our top to bottom review, based on  
5 regulatory changes that occur.

6           Potential measures could be armed escorts of  
7 shipments to provide continuity across state lines. Neal  
8 real-time satellite tracking will take place. Any additional  
9 barriers could potentially happen. Shipment via dedicated  
10 train is a potential.

11           We will develop a security plan. It won't be  
12 developed in the next year or so. We know that regulations  
13 and requirements will be changing. But one will be done.

14           We will promise to track and communicate regarding  
15 the shipments. A system that provides continuous near real-  
16 time position tracking would be in place at all times. I  
17 think you know about TRANSCOM that's used by DOE for WIPP  
18 shipments and other shipments. We'll have something like  
19 TRANSCOM or the equivalent, something that can provide the  
20 drivers with advanced warning of poor weather conditions,  
21 congested traffic, construction zones. This is something I  
22 think is relatively simple. On my trip out here, I was  
23 notified of bad weather in Chicago, and so my plane didn't  
24 fly and I sat on the runway for two hours.

25           Anyway, it would also identify any unusual or

1 unexpected situations that could be encountered. If you look  
2 at the TRANSCOM system, the way it's set up right now, it  
3 does that. A system would allow monitoring potentially of  
4 those communications by affected governments and service  
5 providers, depending upon security requirements. If in the  
6 event that something did occur, we would be prepared to deal  
7 with the emergency.

8           State and tribe and local governments are  
9 responsible to respond to accidents within their  
10 jurisdiction. The Nuclear Waste Policy Act provides for a  
11 combination of planning and training grants for the states  
12 and tribes. We plan to start up that process in the five  
13 year time frame before shipments begin.

14           Federal agencies will become involved when  
15 requested by state or tribal authorities. Federal  
16 Radiological Emergency Response Plan outlines each agency's  
17 responsibilities.

18           We will maintain, and we do maintain a 24-hour on-  
19 call emergency program through the eight regional  
20 coordinating offices in the U.S. And then Price-Anderson is  
21 also available.

22           The next part of the program, or the next slide,  
23 deals with how we will communicate. Our intention is to  
24 foster public confidence, to build working relationships, and  
25 make informed decisions. We want to listen, we want to

1 understand, we want to be informed. We won't exclude people,  
2 and we'll take advantage of other people's experiences.

3           In terms of communication, we want to inform and  
4 educate people. We also want to be informed and educated  
5 also. We want to provide opportunities for meaningful  
6 participate. We will invite open and transparent  
7 communications. We'll build on working relationships that  
8 already exist. The TEC, which is the Transportation External  
9 Coordinating Working Group, is in place. It's been in place  
10 since 1992. It provides a mechanism. We also intend to  
11 build working relationships with states, tribes and local  
12 governments, and through cooperative agreements.

13           As I've said before, we want to make informed  
14 decisions with the input from advisory groups, as well as  
15 international experience and the industry's experience as  
16 well.

17           The TEC group, the Transportation External Working  
18 Group, which I just mentioned, was established in 1992. It  
19 has memberships that include representatives from states,  
20 tribal organizations and local governments. The next meeting  
21 is tentatively planned for July of this year. So, the  
22 planning for that meeting is taking place right now.

23           For the last ten years, DOE has shared information  
24 basically to ensure that participants are knowledgeable about  
25 DOE shipping practices, and to receive input on policy

1 decisions regarding transportation through local state and  
2 tribal jurisdictions.

3           Coordination with states and tribes. As I've said  
4 before, we're committed to developing a process where we will  
5 closely coordinate with the states and tribes. We will  
6 consult with the affected governments on our route selection,  
7 which we believe is in the three to five year time frame  
8 prior to initial shipments. We plan to work closely with the  
9 stakeholders on issues of public safety, emergency response  
10 preparedness. We'll communicate our transportation plans to  
11 the local governments, and we'll follow 180(c) with respect  
12 emergency preparedness.

13           The cooperative agreements. We intend to develop  
14 cooperative agreements with regional, state and technical  
15 organizations. Presently, we have cooperative agreements  
16 with NCAI, which is the National Council of American Indians,  
17 NCSL, National Council of State Legislators, and NARUC,  
18 National Association of Regulatory Utility Commissioners.

19           We intend to establish other agreements, such as  
20 ones which we've had in the past with the Western Interstate  
21 Energy Board, the Midwestern Council of State Governments,  
22 the Northeastern Council of State Governments, and the  
23 Southern States Energy Board.

24           Advisory groups. Once again, we request the TRB to  
25 look at our transportation scope of work, look at our

1 presentation here, and I'm sure you won't hesitate to provide  
2 input.

3           We've also started a risk study with the National  
4 Academy of Sciences, scheduled to start in 2003. That's a  
5 program that will be co-funded with NRC, DOT, and EPRI, as  
6 well as international cooperation. I think I mentioned the  
7 sabotage study and our continuing efforts in the  
8 international area through IAEA and other areas.

9           As far as the future, we want to be successful, and  
10 in order to be successful, we require that we ensure that the  
11 transportation system is safe, it's secure and it's reliable.  
12 We plan to work cooperatively with federal agencies, states,  
13 tribes. We're going to build upon DOE's safety record. We  
14 will use science and technology. That's one of the themes  
15 that's listed in our transportation strategic plan that I  
16 haven't discussed here. And I think Margaret Chu has  
17 discussed quite a bit before the Board the science and  
18 technology program. But to create continuous improvements in  
19 the transportation system.

20           We plan to make informed decisions and manage  
21 effectively, and our number one goal is to foster public  
22 confidence and build those relationships.

23           As the system matures, we look forward to more  
24 opportunities to communicate on the issues that I've talked  
25 about today, and any others. We would welcome the input from



1 the TRB, other federal agencies, so that we can successfully  
2 complete this national mission.

3           That completes what I had to say on transportation,  
4 and the last slide is the same one that Chris showed. Maybe  
5 it's not even in here. It shows the picture of the system,  
6 and the next part of the system is the surface facility  
7 design.

8           ABKOWITZ: Jeff, thank you very much. There's currently  
9 a very comprehensive problem that you all are addressing  
10 here, and there's a wealth of information that you were able  
11 to share with us today. We do fortunately have an extended  
12 amount of time for questions and answers, and I'm sure we'll  
13 get to a lot of the material that you've presented.

14           I'd like to ask Board members to start the question  
15 and answer period. And if you'll identify yourselves, I'll  
16 try to maintain an order here. We'll start with Dan, and  
17 then Ron, and then Thure.

18           BULLEN: Bullen, Board.

19           Actually, can we go to Slide 5 just to start with?  
20 Actually, these were the plans. This is the transportation  
21 strategic plan and the transportation project management  
22 plan.

23           WILLIAMS: Right.

24           BULLEN: When will they be done, and when will there be  
25 drafts, and would it be possible to see these? Because these

1 are actually going to be key documents in the decision making  
2 process, obviously.

3 WILLIAMS: I think so. The strategic plan is the one  
4 that the Secretary has mentioned and has said it will be done  
5 this year. Okay? We're working on it. Since it's the  
6 Secretary's plan, it involves a lot of coordination with  
7 other parts of the program. And I'm not sure how to tell you  
8 we can interact on that, because it's sort of out of my  
9 jurisdiction.

10 The project management plan, we're hoping to have  
11 it done by the end of the year, or so. Like I said, we  
12 haven't had any funding. We've just recently got our  
13 funding. We're trying to prioritize the activities that  
14 we're doing. This is something that we've identified as  
15 important to be done, and we've even developed some  
16 preliminary thoughts on this in terms of meeting DOE  
17 requirements, and so forth.

18 It's something that I believe personally needs to  
19 be done towards the end of this year. As to whether it  
20 actually will or not, I think it remains to be seen based on  
21 once we get together, we get the details of what we're going  
22 to do with our transportation funding specifically, and where  
23 it stacks up among the number of priorities.

24 BULLEN: Thank you. Bullen, Board.

25 Can we move to Slide 7, please, Slide 7, which was

1 your schedule, and I was intrigued, you know, very aggressive  
2 and right on the mark. The question that I have, and it's  
3 not up here, is Chris Kouts mentioned the fact that you can't  
4 really talk to the utilities because of the impending  
5 litigation. Can I imply here that maybe you hope the  
6 litigation is sort of done by 2004, because you're going to  
7 be able to re-establish that dialogue with the utilities to  
8 refine these planning operations? Or how does litigation  
9 impact these?

10 WILLIAMS: I think that's subject to further discussion.  
11 I mean, this is something that we think is important and  
12 would like to do. And, again, I can't really give you any  
13 specifics.

14 BULLEN: That's fine. I just wanted to raise that  
15 issue. And if you move on to 12, Slide 12, I guess the  
16 question that I have, this is the mostly rail decision is  
17 made, if it's made. I think Margaret Chu at the Institution  
18 of Nuclear Materials Management meeting in January in  
19 Washington, D.C. said that a record of decision is pending.  
20 Can you comment on when that decision might be made? And I'm  
21 assuming that you're going to decide openly and in public  
22 that it's going to be probably mostly rail, and you're going  
23 to tell us how that happens. But, do you know anything about  
24 the record of decision, or am I putting you too much on the  
25 spot?

1 WILLIAMS: You're putting me on the spot. I guess what  
2 I'd like to say is it's under discussion, it's under  
3 evaluation, and I can't really give you any more than that.  
4 I'm sorry.

5 BULLEN: Your crystal ball doesn't tell you that it's  
6 going to be like the week after next?

7 WILLIAMS: No, it doesn't.

8 BULLEN: Okay, thank you. But I just wanted to  
9 reiterate that that's something that will have to be made.  
10 And I guess that leads into the sort of route selection  
11 issues that will have to be addressed shortly thereafter.

12 Now, I want to actually move onto something that's  
13 maybe a little bit more tenuous here. I guess let's go to  
14 Slide 15. This might not be the one I wanted. How about 17?  
15 I'm sorry. when you get to the point where you're taking a  
16 look at these site planning documents for specific site  
17 interfaces and you take a look at cask handling and  
18 transportation capabilities within the sites, and then you  
19 get down to the site servicing plans, correct me if I'm  
20 wrong, but that's going to provide a lot of information for  
21 potential attacks on transportation systems, and so how do  
22 you balance the safety and security of, you know, Homeland  
23 Security with the need to inform the public of the things  
24 that you're doing?

25 WILLIAMS: That's a good point, and you could ask the

1 same thing about routes, you know, and I think that's  
2 something that's going to need to be worked on over the next  
3 several years. As I said before, we don't have all the  
4 answers today. These are things that we've identified in the  
5 past that need to be done. The new security view of the  
6 world is going to impact how we develop the things. It's  
7 actually impacted things that we've had upon the web today.  
8 I think you may have noticed things were pulled off the web  
9 and reviewed, and so forth.

10           So, all of those things are going to need to be  
11 looked at specifically. I mean, there's some people that say  
12 you shouldn't tell anybody when you're going anywhere,  
13 anytime. And then you have the other extreme. And those are  
14 going to be balancing acts that are going to have to require  
15 coordination with NRC, maybe the Department of Homeland  
16 Security, and so forth. So, I don't really have the answer  
17 to that, again, but I know it's something that needs to be  
18 developed.

19           BULLEN: Bullen, Board. Just two quick more questions,  
20 and then I'll be done.

21           Figure 25, please. I know you didn't ask--well,  
22 you have to realize that this is a Bullen, Board comment and  
23 not a Nuclear Waste Technical Review Board comment. But my  
24 comment is on your transportation integration contractor, and  
25 what I wrote down in my notes here is that I think it's a

1 really good idea for DOE not to re-invent the wheel, and  
2 there was no pun intended there. You've got to let industry  
3 with their experience in shipping and, you know, rail  
4 structure, and all that sort of stuff, do the bulk of the  
5 work.

6           Mistakes in the past are good to learn from, and  
7 that reasonable servicing contractor is sort of a good  
8 indication that there's a great intention to go ahead and let  
9 this be privatized, but the ability of industry to step in  
10 and do it wasn't there because of the impending schedule  
11 delays, and the like. So, I want to just comment that I feel  
12 that the transportation integration contract that you've  
13 identified there is a good way to step up, particularly in  
14 light of the fact that you're going to provide the purchasing  
15 power for the industry, and then you're going to let industry  
16 coordinate how it gets done, because I think there are people  
17 that know how to do that, and you don't have to re-invent the  
18 wheel.

19           Finally, and my last question, and that was just a  
20 comment, you don't have to respond to that one.

21           WILLIAMS: I like that one.

22           BULLEN: Finally, my last comment is on Figure 40, and  
23 it's just a question. You've had this Transportation  
24 External Coordination Working Group for 11 years now, or  
25 going on 11 years. Is there anybody from the State of Nevada

1 that's on that?

2 WILLIAMS: I believe they are. To tell you the truth, I  
3 haven't been involved in that. I don't know, I'm guessing if  
4 I answer the question.

5 BULLEN: Someone says yes, so that answers my question.

6 Bob, do you want to just lean forward and identify  
7 yourself, and answer my question for me?

8 LUNA: My name is Bob Luna, consultant to the Board, and  
9 I've followed the TEC activities over the past several years,  
10 and there have been attendees from the State of Nevada to  
11 many of those meetings, but not all.

12 BULLEN: Mr. Chairman, that concludes my questions.  
13 Thank you.

14 ABKOWITZ: Thank you, Dan. And, as always, you have an  
15 opportunity to ask some more as the deliberations continue.

16 I've got Ron, who will be up next, and he'll be  
17 followed by Thure, Priscilla and Dick. That's the order we  
18 have right now. Ron?

19 LATANISION: Latanision, Board.

20 Could you describe to me what an NRC certified cask  
21 looks like in terms of materials of construction or  
22 fabrication, just in general? I'm on a bit of a learning  
23 curve, I have to tell you, and I really don't have much  
24 experience.

25 WILLIAMS: Sure. Bob could do it in great detail. But

1 they are made out of steel. Okay? It could be, if it's a  
2 truck cask, it would be maybe on this order diameter, with  
3 spent fuel assemblies about this size square, length maybe 20  
4 feet. You tell me if I'm way off. Okay? If I'm in the  
5 ballpark, okay. It will have a containment inner shell that  
6 will be a welded steel material. In the GA-4, 9, we actually  
7 have a square design for our truck cask. I should say we.  
8 It's GA's design, which has a metal called XM-19. But the  
9 primary purpose is to contain material.

10           Around that, you have the shielding material. You  
11 need the gamma and neutron shield material. And in the GA-4,  
12 we're using depleted uranium, and I can't remember what the  
13 neutron shield is right now, plastic boral, or not boral, but  
14 plastic polymer sort of thing. And then they also have large  
15 impact limiters on the ends which basically are used to  
16 reduce the stress in an accident situation.

17           The rail casks are--I guess I should have brought  
18 pictures. I didn't think to go to that level in this  
19 presentation. But the rail casks are 125 tons. They'll sit  
20 on a large flatbed car. The flatbed car may be lower in the  
21 middle because of the weight to distribute it. They'll hold  
22 anywhere--well, some of the rail casks called the IF-300 only  
23 held seven or eight assemblies, something like that, ten, and  
24 it weighed on the order of 75 tons, or so.

25           The ones that are being designed today hold 21 to



1 as many as 68 BWR assemblies, the ones that are smaller, and  
2 they weigh I said on the order of 125 tons. They sit on the  
3 rail cask in a horizontal fashion. Actually, the Navy's  
4 casks sit vertically. Okay? They're a little different.  
5 They're also heavier. But primarily they need to contain it  
6 with some sort of welded inner containment of shielding and  
7 impact limiters.

8           Did I leave anything out, Bob? No?

9           LATANISION: Latanision, Board.

10           Is GA at this point the sole supplier, provider?

11           WILLIAMS: No, General Atomics is the--well, why don't  
12 you put up the one on rail casks. General Atomics has a  
13 certified design for a truck cask, and their certified design  
14 is for a four PWR assembly truck cask. So, it's what we call  
15 a high efficient truck cask.

16           To be a legal weight truck, it has to be under 25  
17 tons. Okay? The GA-4 cask, when it was developed, basically  
18 we were trying to fit in as many assemblies as we could and  
19 still keep it--go to the next one on truck casks. Okay,  
20 these are the truck casks. These are legal weight truck  
21 casks that could be shipped by a truck. NAC, this is Nuclear  
22 Assurance Corporation, they have a certified cask. They've  
23 built eight of them, and they're used around the world for  
24 various different things, research reactor fuel, commercial  
25 fuel, and so forth. It has the capability to handle short

1 cooled fuel, two year cooled both P and BWR fuel, but it does  
2 weigh on the order of 25 tons.

3           The General Atomics casks, which are casks that  
4 were developed by our program, they're certified, none of  
5 them built. We built a half scale prototype in 1992, or so.  
6 Drop tests were done of that cask, and it's a complex  
7 design. It has this XM-19 material that needs to be done in  
8 a square fashion. It's has depleted uranium shielding, and  
9 it's not a simple design. But we're trying to push the  
10 envelope in terms of carrying the maximum amount of fuel it  
11 could in order to reduce shipments.

12           So, you can see if there's 300,000 assemblies that  
13 need to be shipped, you would need a bunch of NAC casks, and  
14 four times fewer General Atomics casks.

15           If you go back one, these are rail casks that have  
16 been developed. And these are all fairly recent. I'm not  
17 sure why they don't have some of the IF-300 on here.  
18 Actually, IF-300 is an older cask that's been used in the  
19 utility for most of the shipments today. My understanding is  
20 that it doesn't meet the current NRC regulations, and can't  
21 be reproduced. But they do allow it to be used for shipments  
22 today.

23           For example, the Shoreham to Limerick shipment in  
24 1994 used that IF-300 cask. Now, these vendors here,  
25 Transnuclear, HOLTEC, Nuclear Assurance Corporation, BNFL,

1 they've also designed and built these large rail casks.  
2 These are dual purpose casks in that they're certified for  
3 storage, and they're certified for transportation.

4           The primary driver behind building these was for  
5 storage. They were needed at the reactor sites to store  
6 their spent fuel because they were running out of room in the  
7 spent fuel pools. So, these were geared towards the storage  
8 thing, the storage need, but they were also certified for  
9 transportation in order to ease the removal of the fuel from  
10 the utility site.

11           Now, like I said, these are not covered by the  
12 utility contract that Chris talked about. Okay? The utility  
13 contract doesn't say--all it says is we're going to accept  
14 fuel that's this shape, this long, and so forth, and so on.  
15 It doesn't address any of these things, because they weren't  
16 known in 1982.

17       LATANISION: Thank you. If we could turn to Number 16,  
18 Slide Number 16? You mentioned successful experience in the  
19 WIPP communication process. Could you talk a bit about that?  
20 Is it basically the same, oriented in the same way as your  
21 description of what you would envision doing?

22       WILLIAMS: I think so.

23       LATANISION: What was the key to success in that  
24 instance?

25       WILLIAMS: Well, as I understand it, and I'm not

1 involved on a day to day basis on the WIPP program. What I  
2 understand is that they took a proactive view in going out  
3 and talking to the states. When they identified we need to  
4 ship from here to here, they identified who they were going  
5 to talk to, how they were going to talk to. They started the  
6 discussions with them early on. And, within discussions  
7 within the program, we've heard people say, well, you ought  
8 to follow the WIPP model. And that's the sort of thing that  
9 they're talking about, as well as the tracking, and so forth.  
10 And I think I'll leave it at that.

11 LATANISION: Thank you.

12 ABKOWITZ: Thank you, Ron. Thure?

13 CERLING: Just some more questions on the casks.

14 Cerling, Board. Just some more questions on the cask  
15 situation. I was wondering, one, at present, are the casks  
16 that are designed, are they presently suitable for all spent  
17 nuclear fuel?

18 WILLIAMS: No, they're not. I showed at the last Board  
19 meeting, I plotted all the fuel that was out there in terms  
20 of burnup and age, and so forth. If you flip back to the  
21 rail cask one, for example, it will show you the types of  
22 fuel, which I don't know that I can read here, but PWR 15 by  
23 15 assemblies, 3.3 per cent enriched, and so forth, and their  
24 cooling time. Anyway, what I did was I plotted on a plot all  
25 the spent fuel assemblies and where they would be in 2010.

1 And based on that estimation, we said that--or I said that  
2 this set of casks could handle about 60 to 65 per cent of the  
3 fuel, I think is what I said at that time. There will be  
4 higher enriched, higher burnup fuel that will be generated,  
5 and is being generated by the utilities today, and these cask  
6 designs will need to be updated.

7           And what I said was that we believe that the  
8 industry on their own is going to need to make modifications  
9 to these casks to accommodate that fuel because of their  
10 needs at the reactor site to start to store some of that  
11 higher enriched fuel.

12           Now, one other aspect, like I also said, these are  
13 very large, too, and there may be a need for some smaller  
14 casks in some specific incidents. In the '94, '95 time  
15 frame, we identified about 14 utilities that would be best  
16 served by a 75 ton cask. That needs to be re-evaluated today  
17 based on their situation, their near site infrastructure, and  
18 so forth.

19           CERLING: And then following on that, again just because  
20 I'm on a learning curve, how long do you anticipate each cask  
21 and how many shipments is each cask used for?

22           WILLIAMS: Their certification life is five years. I  
23 think we've used the design life in our estimation of about  
24 20 years. I think that's what we've used in our TSLCC  
25 projections to say when we need to start replacing those

1 casks, a 20 year life.

2           CERLING: And then another question that has to do with  
3 the transportation issue. Is it possible, or do you see that  
4 it's possible, that the decision for mostly rail may take  
5 long enough that you may have to have a system that begins as  
6 mostly truck and ends up as mostly rail, and how does that  
7 affect cask procurement and design and so on?

8           WILLIAMS: Yeah, I was kind of alluding to that. You  
9 know, when we're talking about risk management, in terms of  
10 managing the risk of the program, that's something that I  
11 think you need to think about, and we need to be thinking  
12 about those decisions today and plot out exactly what needs  
13 to be done. And if we plan our program on nothing but rail,  
14 assuming that the decision is going to be made, the railroad  
15 is going to built, everything is going to be all lined up to  
16 receive by rail in 2010, we may not be in a position to  
17 accept all the fuel that we want to.

18           So, we need to be thinking about that, and we are,  
19 and I just can't tell you exactly when these decisions will  
20 be made. You know, I point this out in the lack of truck  
21 cask development, that that's something we need to look at.

22           ABKOWITZ: Thank you, Thure. I just want to make a  
23 personal comment to you. I think you have a better chance of  
24 becoming a transportation professional, based on those  
25 questions, than I do a seismologist, based on my questions

1 from yesterday.

2 Priscilla, you have the floor.

3 NELSON: Well, we'll see how far I can go with this.  
4 Nelson, Board.

5 My question has to do with the idea of safety and  
6 integrated safety. And the experience that I've had with  
7 safety makes me a little bit concerned about the variety of  
8 organizations that you have potentially involved in achieving  
9 a safe system, including DOE, the Technical Integration  
10 Contractor, the Technical Services Contractor, other federal  
11 agencies, state agencies, local organizations. There's an  
12 awful lot of variety and interfaces throughout that system.

13 So, the idea of developing an integrated concept of  
14 how safety is to be achieved and how all the way from route  
15 selection, which seems, for example, on Slide 29, to under-  
16 accent safety in selection of routes. Although it may be  
17 embedded in the bullets that you have there, it's not overt  
18 as a prime issue, a prime criterion. And certainly standard  
19 emergency response varies widely across states and local  
20 communities, and there's, as we're learning I think following  
21 911, a lot of turnover in emergency responders, and many of  
22 them have compound responsibilities, as they respond to more  
23 than one kind of emergency, or have more than one duty that  
24 they may be called to act simultaneously regarding.

25 So, I guess the basic--plus the different casks

1 that are possible, and the options that are open. So, I'm  
2 wondering is there a plan to develop an integrated safety  
3 construct for the project that puts safety as the number one  
4 priority and improving safety the long-term goal? It's  
5 almost a philosophy to go about it, and it may be removed  
6 from the technical aspects, which are easier to concentrate  
7 on in many respects, but it seems like this is the time when  
8 that sort of philosophy could get developed and the content  
9 established.

10           That's probably very uncomfortable for you, but if  
11 you have any input, I would appreciate hearing.

12           WILLIAMS: Okay, you said a lot of things there. Let's  
13 go to the very first slide, well, mine is Page 4. It might  
14 be Page 3 on yours, the circles. You know, I think what this  
15 is trying to address is that this is an integrated process.  
16 There are a lot of people involved, and our number one  
17 priority is safety. And it's to transport with public  
18 confidence, and to get that public confidence, you've got to  
19 be able to show that you can do it safely.

20           NELSON: I just don't--the word safety is not on that  
21 slide.

22           WILLIAMS: Well, it's in my notes. It's not in there  
23 anywhere, is it. Well, I guess it goes without saying, you  
24 know, it's so paramount in your thinking that, you know, it  
25 overrides the whole program. Safety is the number one



1 concern, that in order to get the public confidence, you have  
2 to show that it can be done safely.

3           And I guess, you know, all I can say is that, you  
4 know, whereas I've said before, we're in the near term, just  
5 beginning to formulate the over plans, and so forth. You  
6 mentioned routes, for example, the regulations that are  
7 developed for the routes, basically, the assumption is that  
8 those are the regulations that are based on safety  
9 considerations.

10           Interstate highways are better than taking back  
11 roads. Beltways are better than driving through the cities.  
12 Best track is better than worst track. Minimizing exchanges  
13 is better than maximizing exchanges. So, those are the types  
14 of things that are built into the regulations. The cask  
15 safety standards that NRC has built are all based around  
16 safety.

17           And I guess I could say in that the shipments that  
18 have taken place around the world, they've used many a  
19 variety of different casks, and used many a variety of  
20 different organizations to do these things, and our system,  
21 our plan is to build--to buy a safe certified cask that meets  
22 the NRC regulations, hire a contractor that has the  
23 capability that meets the training requirements to do that,  
24 and then to discuss this with the various affected parties,  
25 and so forth. That's my best shot at trying to respond to

1 what you said.

2       NELSON: And I didn't expect a black and white response.  
3 It just seems that now as the program is turning to  
4 transportation, the issue of safety is very important, and  
5 clarity about the safety construct is really important. And  
6 I have no doubt that it does permeate what you have planned,  
7 but it seems to me that it can be up front and integrating.  
8 And with so many agencies involved, so many entities involved  
9 in some aspect of safety, clarity is really important.

10       ABKOWITZ: Okay, thank you, Priscilla.

11               Dick will be next, and then I have some questions,  
12 and then we have Ron with some followup questions, and Carl  
13 from the Board Staff. That's the order I've got. Dick?

14       PARIZEK: Parizek, Board.

15               Picking up on the safety issue, on Slide 13,  
16 yesterday we went through seismic discussions big time, do  
17 any of these routes have different seismic risks that might,  
18 well, again, during an earthquake, you can say I don't  
19 necessarily have to ship, but then there might be repair,  
20 and so on, but does that factor in the environment statement?  
21 I don't remember, and so I'm just asking about seismic  
22 hazard. If you look at the map where the active faults are,  
23 these routes cross some, some more so than others.

24       WILLIAMS: I don't know the answer to that. If Bob or  
25 Pam, did you hear his question? I just wanted to know if any

1 of the routes have different seismic risks, basically, I  
2 guess is what the question was.

3       ADAMSON: I'm Pam Adamson of Fusile and Hamilton. In  
4 the initial studies that were done for selecting or paring  
5 down to these five corridors that were analyzed in the EIS,  
6 initial evaluations were done on a very broad spectrum, but  
7 specific seismic analysis would be part of the design of the  
8 actual track alignment, and it would be done after a corridor  
9 is selected.

10       PARIZEK: It's a little different than, say, terrorism,  
11 because terrorism, whatever it is, where seismic events, you  
12 know you had one, you can then I guess do something. But  
13 there's a delay in terms of shipping, what you do in the  
14 interim.

15       On Page 33, there's a discussion in 2000 about  
16 NRC's CR-6672 concluded that casks would retain their  
17 integrity in more than 99.99 per cent of accidents. That's,  
18 again, sort of a--it seems like a low risk, successful  
19 statement, but what does that mean to the public? If it  
20 isn't 100 per cent, then there could be an accident. If the  
21 accident is in the wrong place, what kind of releases are  
22 possible?

23       WILLIAMS: Once again, I think the risks were in the EIS  
24 and they postulated the potential impacts in a populated  
25 area, and Pam might be the best one. Do you know the answer

1 to that at all?

2 ADAMSON: I'm sorry. I'm having a hard time hearing  
3 back here.

4 PARIZEK: The question had to do with that 99.99 per  
5 cent containment in case of accidents for the shipping casks.  
6 I just want to get a better feeling of what the risks would  
7 be to the public if you had an accident and you didn't have  
8 100 per cent containment, then what?

9 ADAMSON: In the environmental impact statement, we  
10 looked at a maximally reasonable foreseeable accident, and it  
11 was based on NRC studies. I'm sure there's experts in the  
12 crowd that could answer this more completely. But you take a  
13 combination of different types of accidents and do a risk  
14 analysis on them.

15 PARIZEK: Okay, thank you.

16 ADAMSON: And I'll be glad to speak with you afterwards  
17 if you'd like more information.

18 PARIZEK: I guess one of the persons on precarious rocks  
19 that was here yesterday might know more specifically about  
20 these rocks, with regard to whether he has seismicity  
21 information, if he cares to comment, maybe that's something  
22 that could be added.

23 I have some other questions about how transferrable  
24 is the WIPP experience in developing transportation planning,  
25 other than the issues you talked about being proactive, you

1 know, being aggressive in terms of meeting with the people,  
2 and so on. But the whole program is working, and can you  
3 borrow and what can you borrow from their working experience  
4 to help expedite your own planning process?

5 WILLIAMS: There are some differences, in that their  
6 True Packs weren't already certified by the industry, for  
7 example, and so that's something that was basically a  
8 government program with Westinghouse, the DOE, M&O  
9 contractor. So, that is one difference. Okay? But in terms  
10 of driver training, the TRANSCOM aspect, as I said, the  
11 outreach aspect, the discussions with states and tribes, I  
12 think that's the aspect of it that's transferrable.

13 But the whole program in general is somewhat  
14 different, because of their design, their standard True  
15 Packs, and so forth. If we were developing this program in  
16 1982, or something, it may be a different situation. But  
17 today, you know, you don't have private industry out there  
18 building True Packs, and so forth. So that aspect, we are a  
19 little bit different. Okay?

20 PARIZEK: 99 per cent is interesting. I guess we have  
21 an answer maybe.

22 BLOOMER: Tammy Bloomer, NRC, and I'm not a  
23 transportation expert with NRC, but I have sat in in enough  
24 of the issues, the 99.99 per cent of accidents was based on  
25 the proposed list of risk significant accidents, and they're

1 not realistic accidents. They're speeding cars of 237 miles  
2 an hour, those kinds of accidents, and that's where the 99.99  
3 per cent of accidents came from. To date, we've had no  
4 releases under any accident scenarios, and they have had  
5 accidents. So, that 99.99 per cent is based on the proposed  
6 worst case scenarios, which are generally out of the league  
7 of realism.

8           PARIZEK: Okay, thank you.

9           You made mention about three casks per train versus  
10 a dedicated train. What's the difference? A dedicated train  
11 would have many more than three casks, or three casks and you  
12 just throw them on a train and go?

13          WILLIAMS: Well, what I've said is our planning basis  
14 has had to be three casks on a train, whether it would be a  
15 dedicated train or whether it would be three casks on a  
16 commercial train. There hasn't been a decision made on  
17 dedicated train. We don't believe that we need to make that  
18 decision today. There's pros and cons against it. But,  
19 basically, the three casks per train was just to show that  
20 when we say 145 shipments or 140 shipments by train per year,  
21 what it meant was there's a train with three casks on it.  
22 Okay? And if it was coming into Nevada, by that point in  
23 time, it would have to be a short line train. We wouldn't  
24 have a train with lots of other things on it.

25          PARIZEK: One other question then about ramping up with

1 people. If you get the funding that you've asked for, that's  
2 a huge ramping up, and then the staffing and all of this, can  
3 you meet the schedules that you've outlined for us, given the  
4 fact that you would hire a whole bunch of people, come up to  
5 speed and figure out what they're doing, and, you know, it  
6 takes a while. And, so, is there a people pool out there?

7 WILLIAMS: Well, it's a challenge, and, I mean, the  
8 government personnel are the people to manage to contractors,  
9 and so forth. We know that the industry has a set of capable  
10 people that already are out there that know how to do this  
11 kind of transportation. Those are the kinds of people that  
12 could come in. We've been inundated with people that want to  
13 come work for us. Every day, we have a new group of people  
14 that want to come that tells us how best to do this. It  
15 would be nice if we had an independent view from someone who  
16 is not trying to get work.

17 PARIZEK: It doesn't mean they're necessarily  
18 qualified--

19 WILLIAMS: Right.

20 PARIZEK: Thank you.

21 ABKOWITZ: All right, thank you, Dick. I'm going to  
22 defer to Ron here, and then the order after Ron will be  
23 myself, Carl and Bob.

24 LATANISION: Latanision, Board.

25 Just the corollary to Dick's question and mine

1 earlier about WIPP. What about international experience?  
2 What have we learned in terms of the interaction with the  
3 public and the kinds of issues that were just raised from our  
4 international colleagues?

5 WILLIAMS: Well, we know that there's been a lot of  
6 shipments going on internationally. We know they haven't all  
7 gone well. We've known that people in Germany have tied  
8 themselves to the railroad tracks to stop transport. We know  
9 that Greenpeace has chased boats around England, and so  
10 forth. But we also know what's going on in terms of  
11 transportation there. We interact with those people. As a  
12 matter of fact, we had a contractor develop a report on  
13 international transportation experience.

14 I think what we've learned in this country is that  
15 once you have a designated state person that is designated by  
16 the governor to deal with transportation, and they understand  
17 it, then they become your ally, or I should say your ally,  
18 they become educated and informed, and they can help our  
19 process. So, that primarily is our approach, is to once  
20 people understand this, they understand the risk, they  
21 understand the robustness of the cask, they understand the  
22 past safety record of the program. As we said, from NRC,  
23 there's never been a release of radiation. There's been only  
24 eight accidents ever in this country. Four of them were with  
25 empty shipments.



1           Anyway, I think that once that's understood, that  
2 people can be comfortable with shipment of this solid  
3 material in robust casks that are well contained.

4           ABKOWITZ: Thank you, Ron. Abkowitz, Board.

5           I'd like to turn to Slide, please. You mentioned  
6 the strategic plan was coming out this year. I just wanted  
7 some clarification. Are we talking fiscal year or calendar  
8 year?

9           WILLIAMS: Well, we hope this fiscal year.

10          ABKOWITZ: Okay. And I believe in the presentation that  
11 Chris made, the position of managing this transportation  
12 activity at DOE headquarters is actually a position that you  
13 are acting in right now?

14          WILLIAMS: Yes.

15          ABKOWITZ: When is a permanent decision going to be made  
16 in terms of who will be running that program?

17          WILLIAMS: My guess would be in the next couple months.

18          ABKOWITZ: So, we're bringing in somebody who is going  
19 to be basically the CEO of this activity and the strategic  
20 plan will be coming out a couple months after they arrive?

21          WILLIAMS: Potentially.

22          ABKOWITZ: Does that strike you as odd?

23          WILLIAMS: Never thought about that. I mean, hopefully  
24 the person that will be brought in would be knowledgeable and  
25 comfortable with this, and would have to come on board. And

1 as I said, this is also, it's a Secretarial level plan, and  
2 basically what the Secretary has said is that he requested  
3 money in '03 to do this plan, in fiscal year '03 to do it.

4 ABKOWITZ: So, the implication then is that person  
5 that's going to be in charge of this operation has little to  
6 no input in the strategic plan?

7 WILLIAMS: Well, I guess it depends who's selected for  
8 the job. You know, if--I don't know how to answer that.

9 ABKOWITZ: I understand. I didn't mean to put you in an  
10 awkward place either. But I did want to note that for the  
11 record.

12 Secondly, I found it very interesting that the  
13 strategic plan is going to describe the process for how  
14 you're going to interact with everybody else. Could you  
15 explain to me whether or not the strategic plan has any kind  
16 of stakeholder interaction with external parties, or whether  
17 this is being developed entirely from an internal  
18 perspective?

19 WILLIAMS: Well, that decision hasn't been made yet.  
20 So, that's all I can say. To date, you know, we've been  
21 struggling with what is this plan. Is it an operations plan?  
22 Is it a higher level plan? And, you know, internally in DOE  
23 we've been struggling with what this plan is, and we haven't  
24 gotten to a point where it has gone external yet, and I can't  
25 answer your question on where and when that will happen.

1           ABKOWITZ: So, you have a strategic plan that's going to  
2 be published in the next four to five months that's going to  
3 be implemented in a position where a permanent decision  
4 hasn't been made, and there's been no external interaction  
5 with any of the parties at the strategic level? That sounds  
6 to me like if you're trying to build public confidence,  
7 you're not off to a very good start.

8           WILLIAMS: Well, I would say that the strategic plan  
9 right now is envisioned more as a promise as to how we're  
10 going to work with you in the future. Okay? And the process  
11 to cooperatively work with these other agencies is something  
12 that DOE has already been doing, and the things that I  
13 described, we have these regional cooperative groups. We do  
14 intend to issue grants with these cooperative groups. We do  
15 plan to work through the Technical External Coordinating  
16 Working Group. So, the things that are already going on in  
17 the Department that RW really hasn't been involved in in the  
18 last several years, we will describe that this is our intent  
19 to do this.

20          ABKOWITZ: Okay. My experience is that operational  
21 plans flow from strategic plans, and if you really want to  
22 convince the public that they're engaged in this thing and  
23 have some ownership over it, that before the strategic  
24 planning process goes much further, that a genuine effort be  
25 made to engage in stakeholders outside of the organization.

1           If we could move now to Slide Number 39? You  
2 mentioned fostering public confidence. I think it's  
3 important to make a distinction between building confidence  
4 and trying to restore confidence, and it's my perception that  
5 DOE is in the situation where they have to restore confidence  
6 because there is a history that dates back I think probably  
7 even before your arrival in the agency, and as a result of  
8 that, I would just sort of emphasize that rebuilding public  
9 confidence is a much longer and more painstaking process than  
10 building public confidence from scratch, because there is an  
11 a priori perception that has to be dealt with.

12           So, the reason I'm making that point is that I  
13 think the time frame for the planning process and some of the  
14 other things that need to be done is going to be elongated  
15 because of that concern, and it's all the more reason why  
16 interaction with external stakeholders is, in my opinion, on  
17 the critical path.

18           If we could move now to Slide Number 40? I was the  
19 Chairman of the Transportation Research Board Hazardous  
20 Materials Committee from 1990 to 1996, and as a result of  
21 being in that position, I had a seat on the Transportation  
22 External Coordinating Working Group Committee, and I had an  
23 opportunity to attend several of the meetings. And I think  
24 that it's my opinion that if this group is still intact, it  
25 has been at least during my tenure a very under utilized

1 resource.

2           The meetings I went to had a very impressive list  
3 of stakeholders. But as far as I could tell, most of the  
4 agenda at most of the meetings was a case of DOE sharing  
5 information on whatever they were doing at the time, and I  
6 never got the impression that there was a serious genuine  
7 interest in two-way feedback, and that that feedback was  
8 actually being openly used in the process thereafter.

9           I do know that there were subcommittees that were  
10 charged to do certain things, but it seemed to me the way  
11 they were actually operated, that they were not achieving  
12 their mission. So, again, I haven't been engaged in that  
13 process for the last several years, but I think it's  
14 important for this External Coordinating Group to again be  
15 empowered to provide some input and have a sense of ownership  
16 over this process.

17          WILLIAMS: I think that's a good point. And as I said,  
18 we're just initiating planning for the next group, and we'll  
19 pay close attention to that.

20          ABKOWITZ: Thank you. Let's move to Slide Number 7.  
21 The mode decision, the mode choice decision, I see as being a  
22 strategic decision that almost supersedes some of the other  
23 issues like routes and so forth. When exactly will the mode  
24 choice decision be made?

25          WILLIAMS: I don't know the answer to that.

1           ABKOWITZ: So, is it fair to assume then that everything  
2 that's scheduled here in FY 2004 and 2005 are subsequent to  
3 the mode choice decision?

4           WILLIAMS: Well, I would say, first of all what I would  
5 say is that we know that the mode is going to be many modes.  
6 It's not going to be one mode, okay, we don't believe right  
7 now. We've stated that our preference is rail. Our planning  
8 basis has been on rail. So, we know that many of these  
9 things need to be done regardless of whether it's mostly rail  
10 or mostly truck.

11           We also know that the utilities, in their  
12 contracts, have the right to select what mode they use. So,  
13 those are discussions that are going to need to take place.  
14 They're kind of sensitive right now. So, I would say that  
15 most of these activities need to be done regardless of  
16 whether you're shipping by truck or rail.

17           ABKOWITZ: I understand that to a degree, but it would  
18 seem to me also that if I don't know, from a facility to  
19 facility standpoint, if I don't know yet what mode is going  
20 to be used, then I don't really know what routes are going to  
21 be used, and I don't know how many casks of different types  
22 I'm going to need.

23           WILLIAMS: That's right. We don't need to decide today  
24 how many casks you need, of which type. I mean, for example,  
25 we could go out with a procurement that says we would like to

1 procure five BWR truck casks, but we'd like to have the  
2 option for you to fabricate as many as 15 more should we need  
3 them in the years 2012 through 2015. That's just an example.  
4 We know we need a BWR truck cask, but we don't know whether  
5 we need 20 of them or five of them today. But I don't think  
6 we need to know that today.

7 ABKOWITZ: Okay, thank you. Let's move on to Slide 29.  
8 I noticed that in the routing discussion, and in your entire  
9 presentation, there was an absence in terms of talking about  
10 dedicated rail, except as a security measure. Is that the  
11 position of the Department right now?

12 WILLIAMS: The Department doesn't have a position on  
13 dedicated rail. Okay? We're waiting federal rail, FRAs  
14 dedicated train study. We don't believe that we need to make  
15 that decision, or have that preference at this point in time.

16 ABKOWITZ: Okay, let's move on now to Slide 33. I  
17 wanted to also address the third bullet that my distinguished  
18 colleague from Pennsylvania was talking about. These  
19 scenarios that led to this finding were done pre-9/11. And  
20 if at the time I had walked in and said, you know, what about  
21 the possibility of a terrorist, you know, taking over an  
22 aircraft and, you know, flying it into a truck or rail car  
23 that's carrying these things, you would have told me, you  
24 know, that I've had a little too much to drink or smoke, or  
25 something. So, is there any plans to re-evaluate some of

1 these considerations, given that the environment has clearly  
2 changed?

3 WILLIAMS: Well, I guess all I would say is the NRC is  
4 re-evaluating all their regulations in light of security  
5 considerations, and we're going to comply with whatever the  
6 NRC regulations are. And then I did mention this sabotage  
7 work that we do have ongoing that's in that realm. I don't  
8 know if you would like to add any more in response to that or  
9 not.

10 KOUTS: Jeff, let me just add post-9/11, there is an  
11 interagency review group that is looking at this very issue,  
12 and issues as they relate to the transport of these  
13 materials, and we will await the findings of that group. The  
14 Department of Energy is involved, the Homeland Security, new  
15 agency for Homeland Security, the NRC. There are a variety  
16 of different players in that, and we'll look to the input  
17 from them. But that is an ongoing top to bottom review  
18 that's going on right now.

19 ABKOWITZ: Okay, thank you. My suggestion is you may  
20 want to remove that bullet from your presentations until that  
21 work has been done.

22 That was Chris Kouts that gave the answer before.

23 Let's move now to Slide Number 36. One of the  
24 issues that came up when I was on an oversight committee  
25 looking at WIPP program transportation is the issue of



1 tracking and communication, because it's obviously critical  
2 in terms of monitoring your shipments and also knowing where  
3 your emergency responders need to be informed. And I thought  
4 that the Department made some progress during that campaign  
5 to move away from a self-grown system and into looking at  
6 what commercial vendors had to offer.

7           I don't really have a question as much as a  
8 comment, to just say that there are some very sophisticated  
9 systems that are out there that have been developed and are  
10 being underwritten by a variety of different customers that  
11 are in the logistics area. And, so, I would strongly  
12 encourage that as that system gets defined, that you don't  
13 get into a situation where some of your internal development  
14 folks, you know, think that they need to develop something  
15 from scratch. It will be a major area of cost savings and  
16 operating effectiveness, and so I strongly encourage that you  
17 look at it from that perspective.

18           WILLIAMS: That's a good point. That's why I have  
19 equivalent up there, TRANSCOM, specifically because of that  
20 reason.

21           ABKOWITZ: Good. Slide Number 37, please, and just as a  
22 heads up to the next questioning person, this is my last  
23 question.

24           Emergency preparedness for transportation events is  
25 a very complex problem, as I'm sure you know. And I guess

1 one question that I have for you, or maybe you can just  
2 corroborate my perspective on this, my understanding is that  
3 the way that emergency preparedness is dealt with by DOE is  
4 that they actually provide resources to the state, and then  
5 the state decides how to use those resources. Is that  
6 correct?

7 WILLIAMS: Yes. Under the Nuclear Waste Policy Act for  
8 our program, that's the way it will work, is that we will  
9 provide grants to states, and they will train their people.  
10 Now, that's not the way it has worked across the board  
11 necessarily in DOE for WIPP, for example, and other places.  
12 But that's the way we're required under the Nuclear Waste  
13 Policy Act.

14 ABKOWITZ: The concern that that raises in my mind is  
15 that when we have these trips that are going from an origin  
16 to a destination, crossing several different states, is that  
17 we really have no way of knowing what the consistency or  
18 compatibility is between these various preparedness  
19 activities, and that includes, you know, training, equipment,  
20 communication, et cetera. So, I think that has the  
21 potential, particularly in the public confidence arena, to be  
22 a concern.

23 Also, even if each state tried to do the same  
24 thing, there's some issues about how the states disburse  
25 those funds, and how those capabilities align with the routes

1 that are running through those states. So, in other words,  
2 if I was the State of Colorado, what assurance does DOE have  
3 that the training and planning money is actually going in  
4 such a way as to, you know, present 100 per cent coverage  
5 along the routes that you are concerned about.

6           So, I think there's a very important issue there in  
7 terms of what we can expect from the standpoint of, you know,  
8 what's the lowest common denominator of preparedness that  
9 we're going to have on any portion along the route. Because  
10 incidents really, you know, don't know where they're going to  
11 occur a lot of the time.

12           The other thing I wanted to observe is that for the  
13 vast majority of the routes that you'll pick, whatever they  
14 might be, you're going to be dealing primarily with voluntary  
15 fire departments as your first responders, and the turnover I  
16 understand is considerable in those departments. So, again,  
17 your plan, in my mind, needs to be agile enough to deal with  
18 these types of considerations.

19           WILLIAMS: I agree.

20           ABKOWITZ: Okay. We're not too far behind schedule, so  
21 we're going to allow another five or ten minutes of questions  
22 here. Carl, I believe you're next on the docket.

23           DI BELLA: Thank you very much, and this will be short.  
24 Carl DiBella. Slide 21, please. Now, on this slide over in  
25 the right-hand column, and I'm not going to get into detail,

1 you show the conditions in the NRC certificate of compliances  
2 for these various casks as to minimum cooling time and  
3 maximum burnup, and so forth.

4           Now, I'm not sure, but assume for the moment that  
5 NRC has not allowed greater than those--lesser cooling times  
6 or greater burnups on a degraded, or a de-rated, excuse me,  
7 basis of the cask. What is one of the utilities gives you  
8 fuel that does not fit into the certificate of compliance,  
9 what exactly is DOE's obligation as far as accepting that  
10 fuel is concerned?

11          WILLIAMS: Well, my understanding is we're required to  
12 accept five year old fuel as standard fuel. I don't think it  
13 has any limits on burnup. Do you know, Chris?

14          KOUTS: This is Chris Kouts. Not that I'm aware of.  
15 So, it's basically five year cooled, and if the utility wants  
16 us to ship it and that's what they're providing us, then we  
17 have to find a way to ship it.

18          DI BELLA: Even if it takes five or ten years to do so?

19          KOUTS: Well, even if it takes additional casks in order  
20 to do it, yes, that's correct. We hope, though, to work with  
21 the utilities to maximize cask capacity, as I said earlier,  
22 and we have a bit of time to work with them on this, and our  
23 expectation is that we'll have full cask loads and have an  
24 efficient system. I don't think the utilities as a whole  
25 want to operate the system inefficiently.

1 ABKOWITZ: Bob?

2 LUNA: Thank you. Bob Luna, consultant to the Board.

3 I was interested in Slide 7, which shows the  
4 railroads, about the--and this was called to my attention by  
5 a person at one of the TEC meetings, as a matter of fact.  
6 You know, I think it's Slide 13. Sorry. This was called to  
7 my attention by somebody from Nevada. He pointed out that  
8 there is an existing rail line that ends at the ammunition  
9 depot at Hawthorn up there in the upper left-hand side, and  
10 that it was his concern that that was not given appropriate  
11 weight in the decision of setting down the potential rail  
12 corridors, and it is a relatively short run from Hawthorn  
13 down to the repository.

14 I was wondering if you could say something about  
15 what the--why that route was disqualified early on, and  
16 whether or not it might be reconsidered?

17 WILLIAMS: Well, right now, our plans are to only  
18 consider these ones that were done in the EIS. I think Pam  
19 mentioned there were 17, or so, preliminary routes that were  
20 identified. And I think, Pam, do you know the details?  
21 Rather than me guessing, why don't I let you tell it.

22 ADAMSON: Sure. That route, which was initially looked  
23 at and studied, was considered to be not carried forward, but  
24 would be monitored. At this point, there is ongoing  
25 discussion with a Native American tribe that has issues with

1 who's got the right to transport on that access road. So,  
2 that's why it was not carried forward, because of potential  
3 conflicts for those rights-of-way.

4 ABKOWITZ: Okay, any other questions from--I'm sorry, so  
5 ahead.

6 LUNA: I have a few more.

7 ABKOWITZ: Please, you have the floor.

8 LUNA: Thank you, Mr. Chairman.

9 Let's see, the transportation plan that you spoke  
10 about, I was wondering which of these plans are similar to or  
11 how they are different from the plan that was put forward to  
12 the House Committee on Appropriations, the plan for  
13 transportation, cask fabrication and deployment that was done  
14 in the year 2000. Is there a common thread between that  
15 presentation to the House Committee and any of the plans that  
16 you mentioned here in your presentation?

17 WILLIAMS: That plan there I think was primarily built  
18 around the capability of industry to provide casks in a  
19 timely manner. I think that's what it was. And what I would  
20 say is that these plans are not the same as that plan. Okay?  
21 That was addressing a specific issue that they requested,  
22 and we addressed that concern that they expressed, and I  
23 think it was an Appropriations Bill. So, these plans are  
24 completely different than that. However, the one little  
25 aspect that's in there about cask capability, manufacturing

1 and cask capability, we definitely have to plan for, and it  
2 will be in our program.

3       LUNA: Again on the same subject, the industry response  
4 to that document was less than charitable, I guess is the way  
5 I'd describe it. And, in particular, they were talking about  
6 the issue of high burnup fuel and the fact that the industry  
7 was likely to offer you high burnup fuel in the year 2010,  
8 and that suggested that a development program for high burnup  
9 fuel needed to move forward relatively quickly. I was  
10 wondering if you had any reaction to that statement, and  
11 whether or not that suggests that high burnup fuel cask  
12 designs ought not have somewhat higher priority than I detect  
13 that you've given it here.

14       WILLIAMS: Well, yeah, I think I've addressed that a  
15 couple times here. But, basically, what we've said is that  
16 actually in our FY '04 budget, if you look at that, it has  
17 long-lead items. Specifically, you can find in there high  
18 burnup, high efficiency rail cask development as a long-lead  
19 item.

20       Now, in subsequent discussions with the industry,  
21 they've also told us that we don't need to do that now  
22 because they're going to need to do that on their own to  
23 address their own storage problems. So, that's an issue I  
24 think that needs to be clarified. But we have requested  
25 funds for it in our FY '04--I mean, FY '03. I'm sorry. FY

1 '03 budget proposal--no, the FY '04, FY '04. Sorry.

2           We just got the '03, and the '04 just rolled out,  
3 so it's in the '04 budget, we have requested funds for high  
4 burnup, high capacity rail casks, long-lead items. Okay?  
5 Now, whether we indeed need to do that or not, I think is  
6 still an issue.

7           LUNA: Let's see, with regard to the Transportation  
8 External Coordinating Working Group, also known as TEC, which  
9 our chairman has talked about earlier, my understanding was  
10 that TEC was jointly funded by EM and RW in the past, and EM  
11 has withdrawn most of the funding, which is the reason that  
12 the winter meeting was not held this year.

13           Is RW going to pick up more of the cost of TEC and  
14 pursue using it as a better and efficient route to  
15 interacting with the states in getting state inputs?

16           WILLIAMS: Yeah, I think our answer to that would be  
17 yes, we do intend to do that. To what extent we give them  
18 funds, I think needs to be--we haven't sorted out the  
19 priorities based on the funding that we just received. And  
20 there's a lot of call for our funds, a lot of people want the  
21 money, and that's something that's on our list of things to  
22 look at.

23           LUNA: I was curious about the--I've heard the people  
24 from Nevada say on several occasions that the mostly truck  
25 and mostly rail scenarios don't really recognize what they



1 perceive as the realities of shipping from reactors as they  
2 currently exist.

3           Is the scope of the work that you're going to do to  
4 look at reactors going to be to pick up that information and  
5 try to modernize it to check to see whether those concepts  
6 are correct?

7           WILLIAMS: Yeah, that's exactly right. And I think over  
8 the last ten years or so, there's been more of an ability to  
9 ship by rail. The industry has developed a better handling  
10 capability over the last ten years because of their need for  
11 implementing dry storage and for them lifting heavy loads,  
12 and so forth. So, yeah, the answer is yes.

13          LUNA: I was curious about, and this gets back to Ms.  
14 Nelson's question on safety, one of the things that the Board  
15 emphasized early on was the concept of a comprehensive safety  
16 engineering program that relates to the transportation  
17 activity which would assure that human factors, issues and  
18 errors as a result of human factors, problems with cask  
19 designs and cask operations, would be looked at early in the  
20 design so that these are foreclosed, or at least minimized in  
21 the operations, both in transportation and in the receipt  
22 and preparation process.

23           Can you tell us a little bit about what, or  
24 describe how you see integrated safety and human factors  
25 coming into the design of the transportation system and the

1 receival system? That's a pretty broad question, but I think  
2 that the question of safety, as has been highlighted by a  
3 couple Board members, is one that's going to have public  
4 attention.

5 WILLIAMS: I don't know how to respond, other than I  
6 responded to Priscilla before, that safety is paramount. In  
7 terms of an integrated safety plan like this, I don't know  
8 that we've identified that, particularly with the human  
9 factors, and so forth. I guess all I can say, Bob, is that  
10 that's something that we'll consider. I think I'd like to  
11 hear your input on what you think it ought to be, what you  
12 think it ought to cover, what do you think we're missing in  
13 what we've got in our current plans that are not firm by any  
14 means.

15 LUNA: Okay, one other, I guess it's an observation, Mr.  
16 Chairman, and that is the viewgraphs suggest that routing, in  
17 fact, is going to be done by the DOT regulations. But I call  
18 to your attention the fact that the NRC, in fact, has an  
19 input to routing for spent fuel, because it is considered a  
20 greater than--well, because it's of strategic importance.  
21 And, so, there is at least one other player who's going to be  
22 involved in route selection and security planning.

23 WILLIAMS: And that's right.

24 LUNA: That's all, Mr. Chairman.

25 ABKOWITZ: Okay, thank you. We're running well behind

1 now, so I'm going to close out the question period.

2           I did want to add to the record, and the question  
3 has come up from a public query here, I don't believe it  
4 needs to be answered now, but I would like to have it on the  
5 record. There is a desire to know what contractors that are  
6 involved in the transportation activity and related programs  
7 may also have been involved in the Challenger space program  
8 and the Columbia space program.

9           And then a supplemental comment to that is what  
10 parties involved in our dialogue today, as well as other  
11 stakeholders that are involved in transportation, may or may  
12 not be living along routes that could be alternatives to  
13 moving these shipments. So, that has been added to the  
14 record.

15           Jeff, I want to thank you very much for both the  
16 amount of time you spent discussing these things with us, as  
17 well as your perseverance. It's clear that the  
18 transportation activity is extremely complicated, and I know  
19 we'll visit these issues in more detail down the road. In  
20 fact, it wouldn't surprise me if we have a panel session in  
21 the future that's devoted just to the transportation piece.

22           As I mentioned before, we are running behind  
23 schedule. We were supposed to have a 15 minute break now.  
24 I'm going to shorten that to five minutes, so that we can  
25 just take care of the basic essentials, and we will reconvene

1 in five minutes. Thank you.

2 (Whereupon, a brief break was taken.)

3 ABKOWITZ: We have a Board quorum, so let's begin.

4 We're now going to move in the program from the  
5 transportation component to the handoff and next step in the  
6 waste management system, which is the surface facilities  
7 area. And Jim Gardiner from DOE's Office of Repository  
8 Development is going to share where they're at right now in  
9 the design and operations planning for the surface  
10 facilities.

11 Jim has a degree in general engineering and is a  
12 professional engineer in Washington State. He has 30 years  
13 of professional experience, including design, construction,  
14 inspection, start-up, testing, operation and procurement at  
15 seven nuclear power plants. For the past 15 years, Mr.  
16 Gardiner has managed various aspects of the design of a Yucca  
17 Mountain repository.

18 Please welcome Jim Gardiner.

19 GARDINER: Thank you very much. This is essentially my  
20 first chance to address the Board, so I thank you folks for  
21 the opportunity.

22 A little bit about the background that I had in the  
23 nuclear power plants. I'm glad to say that out of the seven,  
24 six of them are operating. One of them is not. It got  
25 mothballed due to lack of funding. Washington Public Power

1 Supply System was building five nuclear power plants at the  
2 same time, and after a while, they kind of realized that  
3 stressed their finances a little bit.

4           With the surface facilities, there are a lot of  
5 disciplines involved in these buildings and installations.  
6 Normally, I have a number of the BSC staff for support, but  
7 they are not here at the moment, so I'll answer your  
8 questions the best that I can. But, of course, if something  
9 comes up that I cannot answer, I'll certainly try to get back  
10 with you with that information.

11           As indicated, we're picking up from where the  
12 transportation people get the waste to the Yucca Mountain  
13 site. It looks like we'll move right on into the obligatory  
14 technical and boring information right off the bat. There's  
15 probably no way to make this exciting or entertaining.

16           We're going to give you an overview of the  
17 processes, and the processes that we're talking about are  
18 going to be applicable regardless of how the buildings or how  
19 things are situated out there at Yucca Mountain. So, it's  
20 kind of an overview, and some of this stuff could change if  
21 we move some buildings around, or that type of thing, but  
22 essentially it's going to be the same.

23           So, the major functions that we're dealing with,  
24 and this has to do with the whole site, not just a particular  
25 building, we're going to have to receive the spent nuclear

1 fuel and the high-level radioactive waste. We're going to be  
2 receiving, processing and handling of the empty waste  
3 packages that come in, the separate means. We'll be  
4 unloading, handling and packaging the radioactive waste. And  
5 as part of this, we get to the next bullet, which is the  
6 management of the spent nuclear fuel and high-level waste to  
7 allow or to accomplish our waste package thermal loading  
8 goals. And this is something that kind of complicates our  
9 life, being able to get the packages loaded to the thermal  
10 range as established, kind of imposed on us by the  
11 underground and the TSPA aspect of the project.

12           We'll be transporting casks and waste packages  
13 between our surface facilities for the necessary processing.  
14 We'll be processing the shipping casks for return to the  
15 transportation project, transporting waste packages from the  
16 surface to the underground facility, and as a secondary  
17 activity, we will naturally be collecting and handling the  
18 site generated low-level waste. We do not expect there to be  
19 much of that generated, by the way.

20           At all times, we'll be monitoring the surface  
21 operations of the repository system performance, and this  
22 could be done at a central control room, which will be in our  
23 processing buildings, and we may also have some secondary  
24 stuff at our administrative sites, which will be outside of  
25 the radiologically controlled area.

1           We'll be retaining the capability to retrieve waste  
2 for at least 50 years from the start of emplacement. And if  
3 that all goes successfully, then we'll go into the  
4 decommissioning and closure of the repository.

5           The natural functions we'll have to be concerned  
6 with at all times is containing the radioactive waste form  
7 during our normal operating sequences and protecting the  
8 waste during the repository preclosure activities.

9           We're providing and maintaining a radiological  
10 control area. We have to maintain the security and emergency  
11 operations center, and there will also be some surface  
12 infrastructure and supporting systems.

13           And at the end here, the next items are common to  
14 all radiological facilities that we're going to have out  
15 there, so they will apply to the all the buildings as I talk  
16 about those individually.

17           We need to perform equipment maintenance,  
18 radiological surveys, decontamination, dry cell cleaning,  
19 low-level waste processing. We need to at all times confine  
20 and control the radioactive waste sources during normal, off-  
21 normal and hazardous event sequences, control radiation  
22 exposure, criticality, nuclear material accountability,  
23 temperature, human access, for external hazards, and we'll be  
24 monitoring the facility operations and performance to ensure  
25 that we are keeping the safety of the workers in mind, and

1 the public, and also in accordance with our NRC license.

2           As I look at this slide, it kind of torques my eyes  
3 a little bit. It almost looks like the underground  
4 facilities here are above the north portal in elevation. But  
5 it's actually about 600 meters below, I believe. But our  
6 main focus here, the radiological area will be at the north  
7 portal, and we have other slides here which will give you an  
8 overview of the whole site.

9           Unfortunately, this is a little bit light, but I  
10 think we can get through it. Our interface point with  
11 transportation is this point right here. This is where rail  
12 will come in and legal weight trucks and heavy haul trucks  
13 will come at this point. This is where the Yucca Mountain  
14 site takes ownership of it. From here, it will come up to  
15 the north portal. This is our radiological control area  
16 here.

17           Other aspects of this slide, we have an existing  
18 south ramp, which is here, and bear in mind that there are  
19 exploratory studies facilities that we now have, follows this  
20 loop and comes--or starts at the north portal, comes out the  
21 south portal. What you're seeing in this area is proposed  
22 muck piles. We have to store the stuff that comes out of the  
23 tunnels. Up here, there's also a new portal that the  
24 underground people have decided is necessary to facilitate  
25 and make our operations more efficient.



1           This is a high-level flow process that's going to  
2 be applicable, pretty much regardless of how we orient some  
3 of the buildings. As I indicated, starting here at the upper  
4 left-hand corner, we can receive by either legal weight  
5 trucks or the rail system, and it will only be legal weight  
6 trucks or rail coming into our facilities. The heavy haul  
7 trucks will have an intermodal transport point where they  
8 unload, load onto a rail system, which then brings it into  
9 our facilities.

10           All the items will come into our transporter  
11 receipt building, and you can see the functions that we have  
12 there, just receiving the casks, remove the limiters. We're  
13 going to stand the cask up vertical, place it on a surface  
14 transporter.

15           From that point, it can go a number of places,  
16 depending on the condition, or depending on the situations we  
17 have with that transportation cask that comes in. It can go  
18 directly to our dry transfer facility, be processed, put into  
19 a waste package and shipped underground. It could also go to  
20 Dry Facility Number 2, which has the same capabilities as the  
21 first building that we're building, but notice one particular  
22 exception here. It includes the ability to process dual  
23 purpose canisters.

24           If fuel comes into the transporter receipt building  
25 and if there is something wrong with it, if there's some

1 problems, some of these may be predicted, some of them may  
2 not be predicted, we have a remediation building. And in  
3 there, we have the ability to handle off normal fuel, or some  
4 other circumstances that we're not planning for or not able  
5 to handle at the moment in the dry facility one or two.

6           We also have the option of when they're in process,  
7 depending on the heat of the fuel and some other elements  
8 that we have to deal with, we could also send our packages  
9 out to a surface aging facility. And that could handle DPCs,  
10 MPCs. It could hand bare fuel assemblies in a special  
11 storage cask. And we could also send transportation casks  
12 out there also.

13           If we had our preference, we would go in and build  
14 one large facility, get it all done, and turn on the switch  
15 and have everything that we need. But, because of funding  
16 constraints, also because of available construction time that  
17 we have, we've had to go to what we call a phased  
18 construction. So, the stuff that you see in the yellow is  
19 what we propose to build first. These are things that we can  
20 get construction started on and we feel get complete by the  
21 time that we're required to take the waste, which is around  
22 2010. And, so, we should be able to be up and running with  
23 the facilities that we show here.

24           I guess of interest, the first facility is going to  
25 be somewhat smaller than what we would like to have, but it

1 still meets our receipt goals that were imposed upon us. And  
2 we'll be able to operate this facility, meet our  
3 requirements, and it will continue to operate. Later on,  
4 we'll bring on another building, which will increase our  
5 capacity to meet the full receipt rates that we're expecting.

6           We have a disposal container preparation building,  
7 transporter receipt building, the aging pad. And on this  
8 drawing, the aging pad is up in this area right here. We  
9 have about 1,000 metric tons capacity on this pad.  
10 Initially, we'll be building probably about six modules which  
11 may allow us to handle maybe 400 to 600 metric tons out on  
12 the pad if necessary. We also have some support buildings  
13 down here, which is like the diesel generators, and some  
14 other stuff, for operation.

15           By the way, I will tell you that on the back slide  
16 there, we're starting construction around October 2007, and  
17 we'll be bringing stuff on line around May of 2010. Phase 2  
18 that you're looking at now we're going to be starting around  
19 October of 2011, and we feel we'll bring those facilities on  
20 around June of 2013.

21           Phase 2 here, a very substantial building which  
22 will be our dry facility Number 2, and we'll have the  
23 remediation building as needed.

24           What you're looking at now is a 3-D model of our  
25 transporter receipt building. You come in here through the

1 top, just receive the casks, take the impact limiters, and so  
2 forth, off of them. Empty casks will also come back out this  
3 way to get loaded back onto the transportation system.

4           Down here, some of the functions, we remove the  
5 carriers, load them onto a surface transporter. They also  
6 decontaminate check for that type of regulation, stuff we  
7 have to deal with. Transportation casks will then exit this  
8 building and go over to our dry facility Number 1 for the  
9 waste load out.

10           I've already mentioned some of these, but I'll go  
11 over them again here. We receive those loaded transportation  
12 casks, unload them from the carrier. Load that cask onto a  
13 surface transporter for mobility around the site. Like you  
14 said, it can go to a couple different buildings. It can go  
15 to the dry facility Number 1, Number 2, or remediation  
16 building, or it could go directly to the aging pad.

17           Once those casks have been processed in the other  
18 buildings, they come back from dry transfer facility 1 or 2,  
19 or the remediation building, and then they head back to the  
20 transportation project.

21           Of interest here, we're designing this thing at the  
22 moment to handle about six legal weight trucks and/or three  
23 rail casks per day. This could be adjusted, and we're  
24 looking at whether or not we need to increase it or not. But  
25 at the present time, this looks sufficient.

1           We just thought we'd add some arrows onto our chart  
2 here to give you just some idea how some of the flow would  
3 go. If you follow a normal waste process, it just comes in  
4 by rail through the transporter receipt building, gets  
5 processed in dry transfer facility Number 1, and it can head  
6 straight to the underground. This is our interface point  
7 with the subsurface.

8           Off normal waste, the green, you come in, if  
9 there's a problem with it, it can go directly to the  
10 remediation building. After it's processed, or put back into  
11 a form where we can handle it in our other buildings, then it  
12 can either go to dry transfer facility 1, or it could also go  
13 to dry transfer facility 2 when that facility is up and  
14 running. And, from there, it would then go to the  
15 underground.

16           And if we were aware of some situation where it had  
17 to go to waste aging immediately, it would just come in, and  
18 this facility here, we would be able to put it into a storage  
19 cask, and from there, it goes to the aging.

20           We have an example here of what we call an omni  
21 directional lift transporter. It's one of the concepts that  
22 we're looking at for being able to move these casks and waste  
23 packages around the site. We've studied this for a while.  
24 It does give us some unique options, and it provides us some  
25 pretty good flexibility.

1           One of the reasons this was of interest to us is  
2 because it limits our drop, canister drop heights. By using  
3 this, it reduced those scenarios considerably.

4           We considered using this for above ground. It was  
5 also considered at one point in time to be the transportation  
6 mode to go underground also. It's very adaptable here. We  
7 can use it to handle all of the different casks and waste  
8 package sizes by adjusting the pallet height. This is the  
9 pallet that we're talking about down here. It has integral  
10 shielding to allow waste package transport. People could be  
11 very close to this and have essentially hands-on access to  
12 some of the outside of it in order to repair or solve other  
13 problems. But, like I said, the evaluation of this  
14 transporter option are still ongoing.

15           A 3-D model of our dry transfer facility Number 1.  
16 Bear in mind this said first floor, and this is a couple  
17 story building, and a lot of the support facilities are on  
18 the upper floors that aren't essential to the waste  
19 processing, which is what we'd like to demonstrate here.

20           We have some in-building storage. That is in this  
21 area here, and also in this area here. So, as we remove fuel  
22 from the canisters and casks, if a cask or waste package that  
23 we have is full, we can still remove the waste from the  
24 shipping cask, store it temporarily there, and the shipping  
25 cask can go back to the transportation system. So, this

1 gives us some capability of keeping the efficiency and  
2 keeping the flow through the building at the highest rates  
3 that we can.

4           Shipping casks will come in here, where they're  
5 decontaminated and lids will be taken off. These are our  
6 transfer facilities, as indicated before. It can come out of  
7 here, go into our welding areas, and those welding areas will  
8 have heat treatment also, post-weld heat treatment. After  
9 welding, it will come out here and it will be loaded onto the  
10 transporter, which takes it underground. It undergoes final  
11 decontamination here, and then to the subsurface.

12           This is pretty much a repeat of what I just said.  
13 The last bullet there, though, load the waste form into the  
14 waste package in a dry cell operation. We've had a number of  
15 studies discussing whether a wet system or a dry system, we  
16 kind of found from industry standards now it looks like that  
17 the dry system is the best way to go for the circumstances  
18 that we have.

19           Bear in mind, though, that we have a remediation  
20 building that I'll talk about later which does give us some  
21 capability for handling off normal fuel in a wet environment.

22           Like I said, I kind of went over some of these.  
23 Close the lids, weld them up, post weld heat treatment, final  
24 inspection on the waste package, load it on a pallet. The  
25 transportation casks get returned.

1           Anyway, the basic items are fairly simplistic. And  
2 the last item here, in-process staging capacity, we're trying  
3 for about 48 pressurized water reactor assemblies, 72 boiling  
4 water reactor assemblies, and up to 10 DOE SNF canisters.  
5 And all together, like I said, we have about two full waste  
6 package contents there.

7           This dry facility Number 2, the layout that you see  
8 here, we don't have a 3-D model of it yet, this comes from  
9 our CDR report, which has been finalized and submitted. We  
10 suspect that the layout in here may be changing somewhat as  
11 we get better with efficiencies.

12           This facility is going to have about two and a half  
13 times the capacity of dry facility Number 1. But here again,  
14 in here, we have the capability of processing dual purpose  
15 canisters, the main difference between this and the other  
16 building.

17           Essentially, the functions are the same. We may  
18 have some, or decide on some waste package remediation  
19 capabilities here in this building. So, if there are minor  
20 weld problems, we can grind those out and make a repair here  
21 without sending it to another building.

22           As just indicated, it's essentially the same  
23 building, with the exception of dual purpose canisters. The  
24 capacity here is that it about doubles our other capacity.  
25 We can maybe handle four legal weight trucks and two rail



1 casks a day. We've increased our building storage, our  
2 staging capacity, considerably. We've got 144, 288, and 10  
3 DOE SNF canisters, so up to seven waste packages.

4           Remediation building. We're considering now  
5 whether or not we need this. If we can do away with it, we  
6 would, but it seems like with the number and types of fuel  
7 coming in, and the potential problems we could get into, we  
8 still need to keep this on the books. This is a fuel pool.  
9 So, we have underwater capability, and this gives us some  
10 flexibility in being able to remediate whatever comes in or  
11 whatever problems that we find. We have drying ability here.  
12 It will come out, get loaded back on a transportation cask.  
13 From here, it goes back to dry facility one or two for final  
14 placement into a waste package.

15           Some of the functions again. Unfortunately, it's  
16 too hard to predict which canisters are going to contain off  
17 normal fuel. Hopefully, the utilities will have some idea of  
18 this and let us know so we're forewarned, and that will give  
19 us some chance to improve our efficiency once it arrives on  
20 site.

21           We'll also need a low-level waste building. At the  
22 present time, we're going to be collecting the low-level  
23 waste in each of the individual facilities. They'll probably  
24 be held there for some time. As we accumulate the low-level  
25 waste, at some point in time then we'll transfer it to this

1 building where it will be compacted if it's dry. And there  
2 will also be some recycling when we can, and wherever waste  
3 is processed and ready for shipment, will leave the building  
4 areas here and we'll have a couple potential sites to go to.  
5 The preferred site is the Nevada Test Site. We're working  
6 on the regulations and requirements and the permits, and  
7 we'll need to go through them. There are other sites  
8 available in case we need that option. Again, here's the  
9 basic functions that building will be doing.

10           I covered this briefly before. Probably about  
11 1,000 metric tons is what we need, although that can  
12 certainly be adjusted. We have available room on the pad to  
13 increase that as necessary. A little flow process that we  
14 showed earlier, they can wind up on this aging pad in a  
15 number of ways. They can come from DF1, DF2, or from the  
16 remediation building. So, the flow through there is pretty  
17 simple, and the present means that we have to get the stuff  
18 out there is with that omni directional lift transporter, and  
19 we'll probably also have the option of just a rail car that  
20 will go out there to set them on the pad.

21           Just more of the functions again. It looks like to  
22 improve efficiency, and so forth, that we do need some aging  
23 for efficiency of processing inside the buildings. But we  
24 also need it for thermal management also. So, it looks like  
25 we can get some real benefits of having these aging pads out

1 there.

2           One thing it does help us do which is important is  
3 uncouple the waste receipts and waste emplacement for  
4 additional flexibility in the waste processing operations.  
5 Due to the number of waste types that we can get, and so  
6 forth, this gives us the ability to run a particular type of  
7 cask through. Each cask type is going to have to have a  
8 different lifting collar installed, lifting yokes, et cetera.  
9 So, if we can eliminate or keep to a minimum how many times  
10 we change out those yokes and lifting collars, that helps our  
11 efficiency. So, this option here of when we process a  
12 particular type of fuel is very helpful to us.

13           Here again, the technology we'll be using is very  
14 similar to what's going on now at current facilities, so  
15 there shouldn't be any surprises there from regulatory or NRC  
16 standpoint. It's pretty standard.

17           Here's some things that are ongoing. We've had  
18 some people go to France to the Cogema plant. We've picked  
19 up some very interesting concepts and ideas from them. At  
20 this point in time, we've also signed a subcontract with  
21 them, and they're coming in to do an evaluation on the design  
22 concepts that we have. So, we expect that we'll pick up some  
23 efficiencies there. We'll pick up some good ideas. And  
24 overall, it should enhance the end product that we're looking  
25 for.

1           We're still struggling with the transportation  
2 system, the rail and the truck shipment combinations and the  
3 impacts on design. If we get primarily legal weight trucks,  
4 that increases our processing to remove the impact limiters,  
5 to get them through the buildings. It takes about five legal  
6 weight trucks to come up with a full waste package. Whereas,  
7 on rail, it's much less. So, that's going to have quite an  
8 impact on us on our through-put.

9           Concurrent operations and construction impact on  
10 design. Because things are on the north portal pad, we'll  
11 have some buildings built, and because we're facing things,  
12 we'll have a second phase. There will have to be some very  
13 good coordination of those construction operations, keep them  
14 outside of our radiologically controlled area, outside of  
15 security fences, et cetera. So, this is going to take some  
16 good coordination.

17           Some of the stuff that we're doing is we'd be  
18 better off to make sure that our prototype testing program is  
19 operative and we worked all the problems out prior to getting  
20 into our actual construction and full operation.

21           Requirement changes for safeguards and security,  
22 that's already kind of been discussed on the transportation  
23 end. I'm sure that's going to have some affect also on our  
24 operations here at the north portal pad. We've had a  
25 vulnerability assessment which is trying to take into account

1 the terrorist aspects of things, and we're getting some good  
2 input from that. It will probably affect our roadways in,  
3 some of the ingress and egress.

4           Thermal management, it does get to be complicated.  
5 From a surface standpoint, we would like to have a higher  
6 thermal limit, but that's still dependent on the TSPA  
7 requirements that's put on us. So, we'll have to accommodate  
8 what is best for the repository from an overall performance  
9 standpoint.

10           Fuel characteristics, fuel burnup measurements and  
11 requirements. If we can get the utilities to do that, it's a  
12 real help for us. If it's got to be done at our site, it's  
13 got to come in, there's additional handling. We don't know  
14 how long it's going to take to actually get those readings.  
15 So, anyway, that's something that needs studied, and will  
16 definitely slow down the through-put that we're looking for.

17           We are going to be constructing an offsite training  
18 facility to get a jump on the operations of what we're doing.

19           Essentially, that is the processes on the surface  
20 facility, so I'm open for questions.

21           ABKOWITZ: Thank you, Jim. We'll now open the floor for  
22 Board questions, and we'll start with Dick.

23           PARIZEK: Parizek, Board. I note in a variety of  
24 slides, like Number 7, Page 12, for instance, you have arrows  
25 that show waste streams going underground. It's only on

1 Slide 15 that you actually have an arrow that goes in and out  
2 of underground. But the question is if for whatever reason  
3 retrievability, it's required by law, but if you decide or  
4 someone says we have to retrieve, how do you back this thing  
5 up? We haven't really been briefed during this meeting, or  
6 previous meetings, for that matter, that you could in fact  
7 pull the waste out, and where would you put it? You can't  
8 put them on the aging pads, they're too small.

9           And then the question is in order to have a program  
10 that's thought this all out, it seems to me you almost have  
11 to build in the retrievability story. You're going  
12 underground on the one hand, you assume it's all going to  
13 work, but in case it doesn't, you've got to reverse it, and  
14 we've got to be comfortable that you can reverse it. Or will  
15 this be a reactor waste constipation problem for the way to  
16 figure this out?

17         GARDINER: We're certainly aware of the retrievability  
18 of things, and we have on other site layouts, we can show you  
19 there's probably three areas where we can all together can  
20 store up to 40,000 metric tons on pads. And those are all  
21 pretty much in a close proximity here of the north portal  
22 pad. So, we have the space available if needed.

23           The process to take the waste packages down, or to  
24 retrieve them, is essentially the same. There will be some  
25 extra effort required to lift them up, get them back on the

1 gantry, and get them on the transporter to come back up. But  
2 I also have Kirk Lachman here who does the subsurface, and he  
3 may add to this.

4       PARIZEK: Yeah, he has a slide on Page 13 that shows the  
5 fact that you might have to do this. But would it stay in  
6 the same waste packages that's underground, or would you take  
7 them out and have to unpack them and do something? I mean,  
8 I'm not too sure what all the steps are. And I wasn't aware  
9 you had this interim storage, a place to store up to 40,000  
10 metric tons. Would that be possible for an interim storage,  
11 or aren't you thinking interim storage, bringing the waste  
12 out and storing it there before going underground? Either  
13 way.

14       GARDINER: We're not thinking interim storage. We're  
15 not thinking that. The retrievability option is something  
16 that we'll prepare for. What the possibilities of that and  
17 its hope are remote, but we do have that capability.

18       NEWBURY: Claudia Newbury, DOE.

19               Dr. Parizek, interim storage is prohibited under  
20 the law.

21       LACHMAN: This is Kirk Lachman, DOE.

22               I'll address some of those. I can address some of  
23 those questions when we get to the underground section also  
24 if you have more detail on retrievability.

25       ABKOWITZ: Okay, thank you. Priscilla?

1           NELSON: Hi, Jim. Nelson, Board. I have a couple  
2 questions that are probably easily answered.

3           The first thing is who identifies off normal other  
4 than what is pre-identified by the plants? So, it's a  
5 question of where is QA performed, I guess in part on the  
6 condition?

7           GARDINER: Off normal, unfortunately we're going to run  
8 into some of that just when we cut the canister open, and  
9 we'll find out at that point in time. I suppose we'll have  
10 to react to that pretty quickly. I mean, we'll make a  
11 determination whether this has to go to remediation building.  
12 And until that remediation building is built, which is in  
13 the second phase, we can still pull that out and put it in  
14 our--we have some available storage in the building. And if,  
15 in fact, it was stuck and you couldn't get it out, then we  
16 have the option of putting that in an overpack and setting it  
17 on the aging pad until we have the facilities available to  
18 get to it.

19          NELSON: Okay. I think that process should be  
20 interesting to track, because it seems like with new  
21 technology, there may be a way of getting a better early  
22 indication of whether you're in that kind of a situation.

23           And given that, why did you decide not to put some  
24 remediative capacity in DTF1, and why did you postpone that  
25 to the second phase?



1           GARDINER: Well, the aging capability helps us, because  
2 if we do come up with that kind of a problem, we can put it  
3 out to aging immediately. Part of the reason it was removed  
4 from DTF1 is the fact of construction time and funding. And  
5 it looked like we had the options to where if we get in and  
6 we build DTF1, we'll have some lessons learned out of that.  
7 We'll get smarter, and that will help us determine more  
8 appropriately what we need for remediation, and it will also  
9 determine what's needed in DTF2. So, we'll gain from those  
10 experiences.

11          NELSON: Okay.

12          GARDINER: Primarily funding and construction time is  
13 one of the reasons it was left out.

14          NELSON: Well, there's two other derived questions, one  
15 of which is that construction schedule is concerning to me.

16          GARDINER: Yes.

17          NELSON: I think you must have analyzed it quite  
18 thoroughly to try to figure out what are the constraints on  
19 that to be able to do work on 2010? Because if you don't  
20 start things until 2007, and you've got to do all the design,  
21 the contracting, and everything else and--

22          GARDINER: It's an aggressive schedule. We know that.  
23 And we are trying to adjust funding now to make sure that we  
24 can be accommodated from an engineering and design  
25 standpoint, and also the licensing efforts. So, funding

1 needs to adjust to support the efforts that we've got to do  
2 in the time frame. And there's significant efforts going in  
3 right now to preparing schedules that we have the confidence  
4 in. And, like I said, this is one of the reasons that we're  
5 building offsite facilities for training, offsite facilities  
6 for prototype testing, et cetera, to help make sure that  
7 comes to pass.

8       NELSON: Well, it seems like one way of helping manage  
9 some of the contingencies might lie in the aging pad. I'm  
10 wondering why 1,000 metric tons is the right size. Why  
11 wouldn't a larger capacity help you?

12       GARDINER: We've done some through-put studies. We feel  
13 that 1,000 gives us the flexibility that we need. Phase 1  
14 that we're going to start building, we'll probably only put  
15 in about 400 to 600 tons at that point in time, have space  
16 available on the aging pad. We're showing about 1,000 metric  
17 tons available. We could probably expand that to 1,200,  
18 1,400 there at that same location if we wanted to. So, here  
19 again, it's keeping costs low if we can, so we just build  
20 what we need.

21       NELSON: Okay.

22       ABKOWITZ: Dan, and then Thure, and then we have some  
23 Staff questions.

24       BULLEN: Bullen, Board. Just to follow up on the  
25 questions from Dr. Nelson with respect to the aging facility.

1 If you could go to Figure 7? I had a couple of questions  
2 maybe. You have the dry transfer facility one that basically  
3 is going to load out off normal civilian spent nuclear fuel  
4 to the remediation building, which won't exist for three  
5 years.

6 GARDINER: That's correct.

7 BULLEN: So, the question I have for you is how do you  
8 deal with potential damage during transport? If you have a  
9 damaged cask that comes in for whatever reason, how do you  
10 recover from that without the remediation building? Is there  
11 a capability within the dry transfer facility to handle a  
12 damaged cask?

13 GARDINER: I'd say under that circumstance, that we  
14 would take that cask and put it in an overpack and put it on  
15 the aging pad.

16 BULLEN: So, you have that capability in the dry  
17 transfer facility to put it in an overpack?

18 GARDINER: Yes. That's where the casks are going to be  
19 put into an overpack, is in dry transfer facility Number 1.

20 BULLEN: Okay. And this overpack is going to be an  
21 overpack of--I'm looking down to the next one, which is the  
22 remediation building--I'm sorry--dry transfer facility two  
23 has the capability to use dual purpose containers. That's  
24 not in dry transfer facility one?

25 GARDINER: That's right. We're going to have limited

1 ability in dry transfer Number 1.

2       BULLEN: So, you're going to reuse the dual purpose  
3 containers? I guess the question is are they licensed for  
4 storage again, or are you going to have to overpack them  
5 again? So, it's going to be an overpack of an overpack? If  
6 I get dry storage coming in, say the utility wants to pull  
7 out a NUHOMES container, and I get a NUHOMES container  
8 delivered, what are you going to do with it? I mean, are you  
9 going to cut it open and put it into a disposal container,  
10 and then if I need to age it, go out onto the pad?

11       GARDINER: Dual purpose containers will be cut open, and  
12 from that point in time, they're done for. It's reloaded in  
13 the waste package, so it's gone.

14       BULLEN: What do you do with a damaged dual purpose  
15 container?

16       GARDINER: Damaged dual purpose container, yes, will  
17 probably get put into an overpack and put on the aging pad.

18       BULLEN: Until the remediation building is built then?

19       GARDINER: That's probably correct.

20       BULLEN: Okay. Will NRC license this without the  
21 ability to remediate? I mean, I guess I'm just asking the  
22 question, I'm not a regulator, but can you license it if you  
23 don't--I mean, is this adequate enough recovery from a  
24 damaged transport?

25       GARDINER: We'll be submitting designs for remediation

1 building. So, that's what NRC will license. But, it's just  
2 the point in time when they're constructed, which I don't  
3 know, would be the NRC's concern. But it's going in under  
4 the license application, yes.

5 BULLEN: Bullen, Board. I'm just concerned that you  
6 have an adequate ability to deal with off normal fuel that's  
7 damaged during transport in the dry transfer facility one, as  
8 opposed to having to come down and, you know, try to--I mean,  
9 I'm looking at the staging, or whatever, the storage facility  
10 you have in there is basically just two waste packages in  
11 Building 1? I mean, that's all they have the capability to  
12 store?

13 GARDINER: That's right.

14 BULLEN: And if you run into two damaged waste packages,  
15 then are you done?

16 GARDINER: No. We've got capability of pulling that  
17 fuel out and storing it up to two waste packages. But, like  
18 I said, the situation that you're indicating where something  
19 is badly damaged, I'd say it goes to the pad, aging pad.

20 BULLEN: Okay. But it has to be overpacked. Now, is  
21 there a standard design for the overpack for the aging pad?  
22 I mean, do you have current technology, like dry cask  
23 storage, now that you've selected, or are you going to build  
24 your own?

25 GARDINER: We have a number of things that we're looking

1 at, things that are already licensed, which seem to be very  
2 applicable to what we're doing, that we would probably adopt  
3 pretty much directly, or with minor modifications.

4 BULLEN: But the current plan is not to use a dual  
5 purpose container again; right?

6 GARDINER: That's correct.

7 BULLEN: Okay. So, what do you do with all the waste?  
8 I mean, that all becomes low-level waste; right?

9 GARDINER: Yes. Dual purpose containers, after the lid  
10 is cut off, we have the option of shipping them whole over to  
11 Nevada Test Site. We also have the option to cut them up  
12 into smaller pieces to reduce volume if it looks like it's  
13 economically feasible to do that. But, it looks like the  
14 rates that we're quoted now, as far as disposal charges, it's  
15 better to just ship them over there whole.

16 BULLEN: Bullen, Board.

17 Any chance you could decontaminate those things and  
18 then have to dispose of them or recycle them as opposed to  
19 having them--that's a big chunk of metal that's going to be  
20 stuck out in the desert or go to Hanford or go to Barnwell,  
21 or somewhere, or maybe Envirocare. But that just seems to me  
22 to be a tremendous opportunity for waste minimization if you  
23 could clean them up as opposed to burying them.

24 GARDINER: I think what you are saying is true. But I  
25 think that has to be balanced with the overall efficiency and

1 the number of movements that you have on the site, which also  
2 slows down our through-put. To ship those things back out,  
3 they go back through our transporter receipt building and  
4 some other stuff. So that, you know, interferes or  
5 complicates our through-put coming in the other way. So,  
6 there's a balance that needs to be made there.

7 BULLEN: Bullen, Board.

8 You just led me to the obvious question. Why does  
9 it have to go back that way? Why can't it go out another  
10 way?

11 GARDINER: Primarily because of--well, they're heavy.  
12 You need cranes. You need things to be able to lift them.

13 BULLEN: Sure.

14 GARDINER: And that's where we've got the facilities to  
15 do that, is in the existing buildings.

16 BULLEN: I was just thinking of it from an industrial  
17 engineering point of view. You just don't want to have  
18 things go backwards.

19 GARDINER: Yes.

20 BULLEN: Could we move to Slide Number 26, please? I'm  
21 sorry, the second to the last bullet here, fuel burnup  
22 measurements and requirements. I was under the understanding  
23 in the contract for the acceptance of spent fuel, you were  
24 going to get all the utility records. And, so, having all  
25 the utility records, won't you have all of the burnup

1 characteristics necessary for you to determine disposal?  
2 There ought to be a big database that the utility turns over  
3 to you with each package. And, so, is there going to be a  
4 requirement for measurements, and if so, won't that slow down  
5 your through-put?

6 GARDINER: We certainly hope that you are correct, and  
7 we are getting all the information that we need. Why we  
8 would have this imposed on us, I am not sure at this point in  
9 time. There may be something that comes down because of  
10 thermal management. I don't know how extensive the  
11 information is, or if it's going to be acceptable, because of  
12 how long some of it has been stored, et cetera, if it's going  
13 to have to be re-measured when it gets here. But,  
14 absolutely, let's hope that we have the information when it  
15 comes in and there's no more processing necessary.

16 BULLEN: Bullen, Board. One final comment that you  
17 don't have to comment on. And that is that the thermal  
18 management is going to be a key issue with respect to  
19 disposal. And I understand that TSPA is going to drive that.  
20 The concern that I have is that maybe the current design of  
21 the facility with 1,000 metric tons of aging capability, and  
22 only two waste package storage and seven waste package  
23 storage in building Number 2 is going to limit you in your  
24 ability to do the necessary blending. And I understand that  
25 the capability to build 40,000 metric tons there is



1 expensive, but may be more desirable if you really have a  
2 limitation of waste package thermal output that you have to  
3 deal with, particularly in light of the fact that we heard  
4 this morning that the utilities want to ship the high burnup,  
5 in pool fuel as opposed to what's in dry storage.

6           So, I guess I just caution you that the 1,000  
7 metric tons, as Dr. Nelson pointed out, may not be enough,  
8 particularly if you have to do a significant amount of  
9 blending.

10          GARDINER: Yes.

11          BULLEN: Thank you, Mr. Chairman.

12          ABKOWITZ: Okay. Thure?

13          CERLING: Cerling, Board.

14                 One of the points that you made was about the  
15 problem of handling different kinds of casks, having to  
16 switch because of different casks coming in. And in the last  
17 talk, we heard that the industry is being encouraged to  
18 develop the cask design for a variety of casks, and so I was  
19 just wondering what input and feedback do you guys have to  
20 industry to assure that you don't end up with an infinite  
21 number of cask designs.

22          GARDINER: Well, you brought up a good point. And the  
23 other factor that's involved in that is that we really don't  
24 have the authority to be telling people when to ship and what  
25 to ship. So, when it gets to Yucca Mountain, yeah, that's a

1 big problem that we have to deal with. That's kind of why  
2 our facilities, the remediation building, et cetera, we're  
3 having to plan for a wide scope of things, because you just  
4 don't know what you're going to get when you get it.

5           So, if in fact the philosophy from the  
6 transportation standpoint has changed a little to where it's  
7 going to be letting private industry do more of it, yes,  
8 that's another factor we're going to have to deal with. And  
9 our input would certainly be, and I think the input has been  
10 the same for a number of years, standardize as much as we  
11 can. So, that's the message that will be coming back from  
12 us, and hopefully we'll be successful through Jeff and some  
13 others to have that kind of established as policy.

14        CERLING: And just as an add-on to Dan's question about  
15 the thermal blending and mixing, what sort of fraction of the  
16 things that you're receiving, will have to actually be  
17 blended? Do you have any notion on that?

18        GARDINER: A difficult question. I guess I do not have  
19 an answer for you on that. Like I said, the combinations we  
20 could get can be pretty unusual. It can be from very hot and  
21 a lot of very hot fuel right off the bat, and that poses a  
22 problem. But with the DOE SNF and some other stuff,  
23 hopefully we'll still be able to, if canisters or the waste  
24 package is full so that we're maximizing the use of those.

25        CERLING: Then lastly, just as an educational question,

1 could you elaborate a little more on the different sorts of  
2 origins of the low-level waste that can be generated? This  
3 is just for my information really.

4 GARDINER: In the dry cell where we'll be taking the  
5 fuel out, there could be crud that gets there. When they  
6 start cutting open dual purpose canisters, there will be the  
7 residue from that cutting operation. Then we'll have the  
8 rubber clothing, et cetera, which will give us some dry stuff  
9 that will need to be compacted, et cetera. We do not expect  
10 there to be very much low-level waste generated. It would be  
11 unusual if we did. That's one of the reasons or benefits  
12 that go into a dry transfer system, you'll have a lot less  
13 low-level waste generated.

14 ABKOWITZ: Okay, thank you, Thure. We have time for a  
15 couple very quick questions from Board Staff. We'll start  
16 with Dave.

17 DIODATO: Diodato, Staff. I understand, I guess, and  
18 correct me if I'm wrong, that parts of your designs will be  
19 included in the license application for construction; is that  
20 correct? Are you going to include your designs in the  
21 license application?

22 GARDINER: Yes, absolutely.

23 DIODATO: Okay. What percentage of design completion is  
24 your goal for that license application? Do you have a  
25 percent completeness that you're working towards?

1           GARDINER: Well, yes, that's a good question. The  
2 safety class system, things that are right on for safety, the  
3 Q classified items are going to have a much higher level of  
4 completeness than commercial grade items. We have what is  
5 called a Yucca Mountain review plan, which is something that  
6 has been sent to us by the NRC. In there, they describe what  
7 their expectations are on this type of thing, our structure  
8 systems and components that are safety related or, you know,  
9 Q items.

10           We have gone through the elements that go into the  
11 drawings, our analysis, all of these things that support that  
12 type of a product, and we've said which ones are necessary to  
13 match up with the Yucca Mountain review plan, so that we're  
14 giving the NRC what they desire.

15           Some of the things that are Q related are  
16 essentially going to be rather complete, like maybe 90 per  
17 cent complete. They will have analysis, drawings. They'll  
18 have supporting data, whether science or from technology,  
19 where we got it from. That will be qualified data. We'll be  
20 able to demonstrate all of that.

21           Some of the other stuff, commercial grade stuff, it  
22 will just be a block diagram, flow diagrams, some other  
23 things like that that are very simplistic, but there's still  
24 got to be enough to represent or show NRC how the whole  
25 process works, and that we've identified those items which

1 are licensing concerns and will need licensing attention.

2 DIODATO: In your response to Dr. Parizek's question,  
3 you indicated that in terms of reversibility, you have a  
4 couple areas you identified that will be possible locations  
5 for storing problem packages. And would construction at  
6 those areas be included in your license application, the  
7 facilities at those areas, yes or no?

8 GARDINER: Yes, we're mandated to accommodate or to have  
9 retrievability for the project.

10 DIODATO: And then the final question on that is in  
11 terms of the soil thickness, yesterday we heard a lot about  
12 seismic issues at the site, and so especially for surface  
13 facilities, soil thickness, or unconsolidated sediment  
14 thickness in general, what is that thickness there where  
15 you're talking about constructing, roughly, would you say?

16 GARDINER: At the north portal pad, they've taken muck  
17 out of the existing tunnels, and it's been piled there. But  
18 it is not necessarily, it wasn't done in a structural manner.  
19 So, that muck that is in there now is something that would  
20 come out, and we had bedrock I think from 50 to about 80 feet  
21 down, and at the trailing edge, or at the far edge of the  
22 pad, it's probably more like 100, 120, 130 feet down. If  
23 that stuff will be removed, we'll have structural fill.

24 DIODATO: What seismic design do you have now? What  
25 criteria, what standard are you designing to in terms of,

1 like,  $10^{-4}$ , is that the current?

2 GARDINER: That's one of the--yes,  $10^{-4}$ .

3 DIODATO: What would happen to your schedule and designs  
4 if that became more stringent of a standard? Would that have  
5 great difficulties for you?

6 GARDINER: I think one of the acceleration factors that  
7 we have now are putting us to where we have some very  
8 substantial wall thicknesses. From what I've heard from the  
9 structural analysis people now, the only major concern they  
10 have is that they could get some shift of the buildings in  
11 their entirety if they move. So, they're designing for  
12 ability to limit that. It's very minor, but we've got to  
13 show that we accommodated that, or dealt with that.

14 DIODATO: Thank you.

15 ABKOWITZ: Okay. Carl, you have the final question.

16 DI BELLA: Okay, and I'll be short. Slide 20.

17 ABKOWITZ: Would you identify yourself, please?

18 DI BELLA: Carl DiBella. Yes, thank you very much,  
19 you're talking about the DTF Number 1 and Number 2, but here  
20 it is Deep Test Facility. What is the Deep Test Facility?

21 GARDINER: I think that's one of those things they call  
22 errors.

23 NEWBURY: This is Claudia Newbury, DOE. I have to  
24 apologize. We have a new graphics person, and she was very  
25 creative in her interpretation of DTF, and you'll find deep

1 test facility, and something else in there as well, dry test  
2 facility. It really is a mistake, and I apologize.

3 GARDINER: If we drop something, a waste package on the  
4 floor, it might be a deep test facility.

5 ABKOWITZ: Okay, Jim, thank you very much.

6 LUNA: Can I ask one short question?

7 ABKOWITZ: One very short question.

8 LUNA: Thank you. Bob Luna, consultant to the Board.

9 I looked through the slides and the pictures, and I  
10 don't see any mention of what the degree of automation is in  
11 this process. I see little people pictured here and there,  
12 but I can't tell whether you're highly automated, not  
13 automated, or somewhere in between. Can you give us an idea  
14 of the degree of automation in this process?

15 GARDINER: Should be highly automated. The dry  
16 facilities, dry transfer capability is pretty much all done  
17 remotely, or within hot cells, so that has to be highly  
18 automated. We're drawing on inputs that we get from Cogema,  
19 who have this process, which they've been operating for a  
20 number of years, which we're going to gain some benefit from  
21 also.

22 But, in general, I'd say we're using existing  
23 technology that has already proven itself, but we're still  
24 trying to be innovative on some other things. That's one of  
25 the reasons for the omni directional lift transporter, to see

1 what benefits it could bring to us.

2           So, even that transporter, that thing could be  
3 operated remotely. We can put guides on the floor to where  
4 it follows a track on its own. So, the automation  
5 capabilities are good here, and we want it that way to  
6 eliminate or reduce any exposures and increase our  
7 efficiency.

8           ABKOWITZ: Thank you, Gentlemen. Thank you, Jim. I'm  
9 going to extend my sympathies to the next speaker, because he  
10 is the only thing that stands between us and lunch. But,  
11 nevertheless, we do have one other component of the waste  
12 management system, which is the underground facilities design  
13 and operation, and we'll be hearing today from Kirk Lachman.

14           Kirk is the DOE Design Lead for Subsurface Design,  
15 Waste Package Design, and Engineered Barrier System Design in  
16 the Repository Engineering and Design Division of the Office  
17 of License Application and Strategy of the Office of  
18 Repository Development. I understand he has a business card  
19 that's eight and a half by eleven.

20           Prior to joining the Office of Repository  
21 Development, Mr. Lachman was the Lead for the DOE Nevada  
22 Operations Office, National Crisis Response Assets, where he  
23 led teams of specialists on nuclear emergency response  
24 operations. Prior to that, Mr. Lachman worked on the DOE  
25 Nevada Waste Management Division leading teams of specialists



1 on Low-Level Radioactive Waste Acceptance Program audits and  
2 was himself a certified NQA-1 Lead Auditor.

3           Mr. Lachman also has field experience in the  
4 construction of underground nuclear weapons effects tests at  
5 the Nevada Test Site.

6           Kirk?

7           LACHMAN: I'd like to extend my thanks to the Board for  
8 allowing me to present to you this morning. Since you want  
9 me to go quickly so everyone can have lunch, it's good to  
10 know I'm also a licensed race care driver, so I can do this  
11 quick. That is the truth, by the way.

12           Here's where I pick up, is the lower corner there,  
13 the little green guy down at the bottom is my waste package  
14 transporter. That's the interface essentially between the  
15 dry transfer facilities and the subsurface.

16           This is a conceptual design, drawing, if you will,  
17 of the waste package transporter. It only carries one waste  
18 package at a time. It's a large vehicle. This thing is  
19 massive in size due to the shielding requirements, and it  
20 also uses the concept that Jim brought up in the surface of  
21 the omni directional lift transport type mode of propulsion.

22           It's operated remotely, to address the automation  
23 questions. Just to give you an idea on the weight of this  
24 thing, we're looking at loaded with the heaviest waste  
25 package is right around 397 tons. So, 397 tons. Its

1 propulsion is electric driven. Those aren't exhaust stacks.  
2 That's actually for the rigid chain assembly to come out the  
3 top. So, I get that question all the time.

4           Next slide, please, and I apologize for the  
5 readability of this one. How do I get that waste package  
6 transporter from the surface to the underground, and where do  
7 I go? It enters the north portal, as does all other, all the  
8 waste will go through the north portal. This is an example  
9 route to Panel 1. It goes down the north portal, makes the  
10 curve, and then can go into any of the eight emplacement  
11 drifts in Panel 1 of the subsurface. These routes that it  
12 will go will be between one and a half to seven miles in  
13 distance, not for Panel 1. Panel 1 is one and a half. Panel  
14 4, which we'll show later, is closer to the seven miles.

15           If you're interested in speed of this, the design  
16 bases speed with loaded with a waste package is three miles  
17 an hour. That may seem slow. The thing to consider is that  
18 my through-put requirements are three waste packages per day,  
19 and a 24 hour operation, I've got lots of time to move waste  
20 packages.

21           I thought that would show better. I apologize.  
22 What you're looking at is the other panel transportation  
23 routes. Panels 1, 2, 3 and 5, as it states on this slide,  
24 are a single level. Panel 4 is approximately 70 meters  
25 lower, and I say approximately because there's a gradient to

1 it. Panel 4 is not needed for the 70,000 ton case. It's  
2 just showing for clarity at this point.

3           Here's where we get into the--it's come down the  
4 access main and enters a turn-out, the waste package  
5 transporter enters a turn-out, then wants to couple at the  
6 loading dock, and what I wanted to show with this slide is  
7 that we will load from the back and progress forward. This  
8 transporter and the other, I'll show you in a minute, the  
9 gantry, do not have lift-over capability. We load the drift  
10 sequentially.

11           If you'd flip to the next slide, it will show the  
12 docking operation where the transporter will dock at the  
13 emplacement drift dock. The rigid bed plate slides out on  
14 the rigid chain that was shown on the transporter, at which  
15 point in emplacement drift gantry, which is not always in an  
16 emplacement drift, we put them there for when we are putting  
17 waste packages there. Once we don't need them, we can move  
18 them out for maintenance on a similar type vehicle as the  
19 waste package transporter, only specially, so the gantry can  
20 just drive on it. And the gantry essentially straddles the  
21 waste package and lifts it up, which is shown in the next  
22 slide.

23           This is another big piece of equipment, again,  
24 electrically powered, four lifting arms that at no time does  
25 this or the transporter touch the waste package. I should

1 have emphasized that before. The waste package pallet is the  
2 mechanism by which we lift the waste package by.

3           This piece of equipment has many different things  
4 on it for us, cameras, lights, it's remotely operated, data  
5 gathering, the whole bit. As you see on there, it's  
6 electrically driven. It also has fire suppression and  
7 detection systems on it.

8           The repository layout, again, I want to emphasize  
9 Panels 1, 2, 3 and 5 are what I need for the 70,000 ton case.  
10 Panel 4 is just shown again for clarity, and it is at a  
11 lower level. I have excess capacity even with just using 1,  
12 2, 3 and 5, those panels. Panel 5 at the very end, there's  
13 about I believe it's twelve drifts that are for our  
14 contingency. These are long drifts. These are 800 meters  
15 long. You can store a considerable number of waste packages  
16 in those.

17           And why would I need contingency? If we get into  
18 an area of bad ground, you heard Mark Board talk about some  
19 of his rock studies, if you get into an area you just aren't  
20 comfortable with that emplacement drift and the ground, then  
21 you just abandon it and go to the next one, or you abandon  
22 that area and go to the next area. So, I have roughly a 13  
23 1/2 per cent contingency in these panels.

24           Concurrent development and emplacement. This is  
25 going to go on. It can't just instantly drive these drifts.

1 It's been suggested we just build the drifts above ground  
2 and emplace them, but that's hard to do. So, it's going to  
3 take about 24 years just to--20 years to drive all these  
4 drifts.

5           This is an example in Panel 3. Panel 2 doesn't  
6 show drifts, it would already have been built. We have  
7 airlocks, and I'm going to step away from the mike for a  
8 second.

9           We've got an airlock there, airlock there. This  
10 side over here is the development area, and this side is the  
11 emplacement. There's little blue arrows, nice blue arrows to  
12 show cool, room temperature air, if you will, entering, and  
13 the exhaust would then come out the end and go up one of  
14 these exhaust shafts, again shown for illustration.

15           On Panel 3, it's a little confusing in that this is  
16 the--if you remember those routes, it comes down the  
17 emplacement, and the axis mains, and then backs in. This  
18 area emplacement is always at a lower relative pressure of  
19 air than in the development so there's no chance of any, if  
20 there were to be a breach of a waste package for whatever  
21 imagined reason someone could come up with, it wouldn't be  
22 driven out that way. It would progress up the exhaust.

23           On the emplacement air flow that's shown here, your  
24 positive pressure on this side relative to the other areas,  
25 comes in and through the drifts, and then back out. So, you

1 have an air ducting system, if you will, to bring that  
2 positive pressure in.

3           Transportation routes, very similar, same deal.  
4 All the waste emplacement activities come through the north  
5 portal and go up and around. South portal or the north  
6 construction ramp, depending on which panel you are and  
7 what's used for construction, it's never the same. The north  
8 construction ramp and the south portal are never used for  
9 emplacement. It's the same as the north ramp is not used for  
10 construction.

11           This is just a schematic essentially, or a  
12 visualization of a cut away from the drip shields, and it  
13 shows you that the one size fits all drip shield, and the  
14 different size waste packages that you have there, as  
15 identified on the slide.

16           This goes to your retrieval issues. Why would we  
17 want to retrieve? There might be a safety issue. There may  
18 be a need to retrieve a valuable resource, or environmental  
19 concerns. The law states you have to retrieve on a  
20 reasonable schedule. Reasonable is defined as the time it  
21 takes for our construction and emplace the waste. So, that's  
22 years type time scale for retrieval, so you have time to  
23 develop detailed plans. You have time to build equipment and  
24 facilities to take care of this. And, again, we have to  
25 maintain this for a minimum of 50 years from the start of

1 emplacement.

2           This is another eye chest. Essentially there's not  
3 a whole lot to show here, other than when I talk about the  
4 ventilation system, you wanted me to talk about monitoring.  
5 We're going to monitor, obviously, the ventilation system for  
6 a myriad of different things, and this just shows some other  
7 systems that also would be monitored. They're just not  
8 developed yet. So, you take the air, you monitor it for  
9 temperature, humidity, radiation obviously, different things,  
10 you're monitoring the fans for rpm, for vibration, et cetera.  
11 It's pretty standard.

12           Moving on to the next operational monitoring, it  
13 just goes into a little more detail on the vent. Part 2 of  
14 this is the radiation part, and you're looking at the fans so  
15 you know if you need to shut your exhaust fans down because  
16 you've detected some radiation in one of the emplacement  
17 drifts that you weren't expecting.

18           Moving on to the drip shield, as you know, it's a  
19 titanium, free standing structure, placed nearly at the  
20 closure point of the repository, so that's years down the  
21 road, long-term protection for the waste package in the post-  
22 closure type period, and it's, like I said, it's emplaced  
23 just prior to final closure of the repository.

24           Just a detail of the example of the interlocking of  
25 the drip shields, where they nest with each other, and

1 preventing some migration of the moisture due to these  
2 blocking, any moisture that's coming along here will drip  
3 down the side, et cetera. I'm not saying there's not going  
4 to be moisture condensing on the inside. This is for  
5 advective flow onto the outside of the drip shield.

6           Some concepts for closure. Again, closure is many  
7 years down the road. We are going to close and backfill the  
8 excess mains, the intake and exhaust shafts, the ramps.  
9 We're not backfilling the emplacement drifts at this time.  
10 However, we have not precluded that from our design should  
11 that become a positive aspect to the design. So, one  
12 possibility is blowing in the backfill with some contraption,  
13 such as shown here. It's not that difficult of a concept  
14 actually.

15           Sealing plugs for the ramp sealing, a couple of  
16 concrete plugs probably a Bentonite clay mixture in between,  
17 and just what we don't want is an easy path for anything or  
18 anyone to get in and out of the repository. Hopefully,  
19 they're already out, but the in part is the issue.

20           Going to the shaft backfill operations, these are  
21 25 feet across. So, you've got a lot of material to bring in  
22 here. You're going to just bring it in with just a stemming  
23 operation to stem that shaft with granular material, probably  
24 crushed tuff.

25           And then if you go to the next slide, which is my



1 last slide, is a conceptual shaft sealing, where you could  
2 put in--get rid of all the stuff on the surface, you have a  
3 concrete slab or some other plug material, Bentonite,  
4 whatever you'd like, some drainage dispersion holes to use  
5 the natural flow of the mountain instead of some artificial  
6 flow path that you've created.

7           Okay, now the tables are turned, and it's your  
8 risk, sir.

9           ABKOWITZ: Okay, Kirk, thank you for using your racing  
10 car instincts to get us close to schedule again. We'll start  
11 with Board questions, and Priscilla has the floor.

12          NELSON: Okay, really fast. Yesterday, we heard from  
13 Bill Boyle that he didn't anticipate there being any need for  
14 contingency space, because of the rock condition, as he  
15 anticipates. You're maintaining, though, a 13 1/2 per cent  
16 contingency space in Panel 4; is that what you said?

17          LACHMAN: No, it would be part of Panel 5, the twelve  
18 drifts at the end of Panel 5, yes, ma'am.

19          NELSON: The southernmost drifts?

20          LACHMAN: Yes.

21          NELSON: And those would be the last ones constructed in  
22 any event probably.

23          LACHMAN: No, that's not correct. The panel numbers do  
24 not necessarily, other than Panel Number 1, do not  
25 necessarily reflect the order of construction. Current

1 thinking is actually Panel 5 would be constructed as the  
2 second panel.

3 NELSON: Is that right?

4 LACHMAN: Yes.

5 NELSON: Okay. Let me ask you then how is this all--I  
6 was surprised not to see anything in this presentation about  
7 performance confirmation efforts. Are you involved in  
8 setting up performance confirmation efforts, and in all of  
9 your monitoring for performance, does that feed into  
10 performance confirmation?

11 LACHMAN: Certainly. Let me answer your first question  
12 first. I'm involved only in the state that I work with Dr.  
13 Blink and Debbie Barr, who is the DOE Lead for performance  
14 confirmation. So, they know what we're doing, and we have an  
15 idea of what their plans are. That's my involvement with  
16 performance confirmation. Certainly our data is available  
17 for them, and it's all fed into the central control room, and  
18 I'm certain that it could be part of the performance  
19 confirmation program should they deem it necessary. I'm not  
20 prepared to talk about the performance confirmation program.  
21 I believe that's a subject of a future Board meeting  
22 perhaps, Claudia?

23 NEWBURY: Claudia Newbury, DOE.

24 Priscilla, there is a technical exchange with the  
25 NRC tomorrow to discuss our plans for how we will develop

1 confirmation testing. And we would like to have a  
2 presentation on that at the NWTRB meeting in May, if you all  
3 would like to hear it.

4 NELSON: Well, I would, but it seems like the  
5 integration of what's happening in operations and the  
6 performance confirmation, there really ought to be a real  
7 close dovetail.

8 NEWBURY: That's true. There is a relationship. As  
9 they're pulling together the type of testing that we will put  
10 in the performance confirmation plan, which is a part of the  
11 license, they'll interact with the design people to make sure  
12 that they have the right facilities available, the testing is  
13 in place as construction is occurring, and any monitoring  
14 that's being done for construction or emplacement operations  
15 can be folded in if it's needed to be.

16 NELSON: Nelson, Board. Yeah, that's important.

17 Just finally, what is your concept of what you are  
18 expected to supply regarding cleanliness of drifts for  
19 retrieval?

20 LACHMAN: The thing that would concern me about  
21 cleanliness of drifts for retrieval is the rail for the  
22 emplacement/retrieval gantry clean of debris such that the  
23 gantry can travel up and down the drift. Other than that,  
24 not really that fussy on if there's dust on the waste  
25 package, and I'm not sure if I'm answering your question.

1           NELSON: Well, I guess from the standpoint of if there  
2 is spalling, any fallout, are you designing these devices so  
3 that they are somewhat robust regarding expectations for  
4 thermally or dry induced spalling of rock?

5           LACHMAN: The vehicles themselves will be very robust  
6 vehicles. I don't expect to see a lot of debris on the track  
7 given the ground support of the rock bolts and wire mesh,  
8 which should contain the majority of anything but the  
9 smallest chunks, I think the mesh is a three by three type  
10 size. I'm going off the top of my head. You know, if  
11 necessary, you can put the little sweepers, you know, cattle  
12 sweepers like you saw in the front of a train in the 1800s to  
13 push debris off to the side.

14                    Regardless of what's in those, I have to be able to  
15 retrieve anyway, so I have to be able to have a vehicle that  
16 can go in and get those waste packages. And if I have to  
17 design something specific for that due to a specific  
18 circumstance in one drift, I will do that. But it may not be  
19 until a situation where I'd need to go grab it. I have to  
20 keep those free just to delineate through the preclosure so  
21 that I can put the drip shields on. So, that's a similar  
22 gantry type device that will use the same rail.

23           NELSON: Well, Nelson, Board, and the Board has just  
24 been interested in the past about whether pristine adits are  
25 required or whether there's some amount of flexibility on the

1 part of the equipment to be able to accommodate stuff, so to  
2 make sure that what you're thinking dovetails with what the  
3 rock mechanics people are thinking in terms of fallout.

4 LACHMAN: I work with Mark on a daily basis, so I will.

5 NELSON: Thank you.

6 ABKOWITZ: Okay, thank you, Priscilla. Dick is next,  
7 followed by Dan.

8 PARIZEK: Parizek, Board.

9 I'm looking at Page 3, and I imagine this little  
10 vehicle travelling three miles per hour, 397 tons,  
11 electrically driven, and I figure out there's about 11,000  
12 waste packages, and I take it about five miles average for  
13 the waste packages.

14 LACHMAN: Excuse me. How many waste packages?

15 PARIZEK: 11,000?

16 LACHMAN: 11,000, okay, I didn't hear you correctly.

17 PARIZEK: So, I've got to go about 55,000 miles or less  
18 with this device. Now, most cars don't go that far without  
19 some problem. Is this thing going to get stuck? Or if it  
20 quits underground, how do you deal with this, or how do you  
21 move it to get it out of the way if you have another one, if  
22 you have two of them?

23 LACHMAN: The numbers have not been--that level of  
24 detail has not been formalized. We'll need to look at that,  
25 and also determine predictive maintenance schedules, and mean

1 time between failure type predictions. If this gets stuck,  
2 say one of the drive set fails, I pick that drive set of  
3 wheels up and I use the others to move it.

4 PARIZEK: So, it can be extracted?

5 LACHMAN: Yes.

6 PARIZEK: Because it's a big device.

7 LACHMAN: Yes, sir, it is.

8 PARIZEK: As far as the drip shield, does that get  
9 placed with that type of device, or with the gantry, or how  
10 does the drip shield get put on?

11 LACHMAN: The drip shield gets emplaced, yes, it is a  
12 different vehicle, it looks extremely similar to the waste  
13 package gantry, the waste package emplacement gantry. It  
14 lifts the drip shield up by the sides and picks it up in a  
15 vertical only motion and brings it down the drift, sets it  
16 down, goes and gets the next one, interlocking those pins  
17 that you saw.

18 PARIZEK: And it's clears all the existing waste  
19 packages that are already in place?

20 LACHMAN: Yes.

21 PARIZEK: Okay. And then I had one other question about  
22 the backfilling. You show like on Figure 18, backfill. It  
23 would help me to understand where that backfill might go with  
24 regard to Figure Number like 10 or 11. What exactly would  
25 you fill on Pages 10 and 11?

1 LACHMAN: Okay. All the vertical components that you  
2 see, all the shafts filled.

3 PARIZEK: That could be granular, or cement?

4 LACHMAN: Very unlikely that I would use cement.

5 PARIZEK: Or Bentonite?

6 LACHMAN: Yes.

7 PARIZEK: Then there would become sort of maybe  
8 ventilation possibilities, and so are you thinking  
9 ventilation in your backfill thoughts, or is that that far  
10 along?

11 LACHMAN: I am not thinking ventilation in my backfill  
12 thoughts. The shafts are filled, the ramps, all three ramps,  
13 and all the mains, including the exhaust mains, these guys  
14 right here.

15 ABKOWITZ: Dan?

16 BULLEN: Bullen, Board. Could we go to Figure 6?

17 You show the exhaust main at the emplacement  
18 horizon. Is that new?

19 LACHMAN: That's new since the repository layout and  
20 footprint were redone.

21 BULLEN: Okay. I was just curious, because prior to  
22 this, the exhaust main had always either been--

23 LACHMAN: You're not going to go above and below, are  
24 you, on me?

25 BULLEN: Well, I just was curious, because this is the

1 first time I've seen it at the repository horizon.

2 LACHMAN: It's at the repository horizon, yes, sir.

3 BULLEN: So, the question that I have is maybe we should  
4 go back to, what is it, 10 or 11, and you could explain  
5 something to me now. Figure 11 maybe. What's the distance  
6 of the emplacement drift? Is it about 600 meters?

7 LACHMAN: On average, they're about 600 meters, yes.

8 BULLEN: So, the exhaust meter has just basically been  
9 raised to the repository horizon from the previous layout of  
10 an exhaust main that we had seen? I know we had never seen  
11 the five lobe footprint here.

12 LACHMAN: Yes.

13 BULLEN: So, it's at that level?

14 LACHMAN: Yes.

15 BULLEN: Okay. Just curious. Now, a follow-on question  
16 to that is Figure 7. Since I am exhausting down the drift  
17 into an exhaust main that's 600 meters down gradient here,  
18 how does air get through the door?

19 LACHMAN: There are baffles.

20 BULLEN: So, there's louvers or baffles?

21 LACHMAN: Yes.

22 BULLEN: Oh, I guess you can kind of see them on the  
23 edge here. Never mind. I was just sort of curious about how  
24 you'd get the flow that's necessary. Right there, okay. I  
25 didn't see that early on.



1           Okay, then the last quick question that I have is  
2 on Figure 9, and this is the five lobe layout. And as I look  
3 at this, and it's kind of a follow-on to the question that  
4 Priscilla raised with respect to your contingency, I'm  
5 looking at this going where is the Ghost Dance Fault, and is  
6 there stand-off from the Ghost Dance, and if so, is it--where  
7 is it, I guess in my question. And I know where it is  
8 physically based on the ESF from the north and south ramp,  
9 but it looks to me like there's emplacement drifts that are  
10 going right up to it, or maybe even over it. So, maybe  
11 that's just an artifact of the repository layout figure, but  
12 it seems to me that there ought to be a stand-off from the  
13 Ghost Dance, or maybe we don't care anymore. I was just  
14 curious.

15       LACHMAN: I'm going to turn over the exact location,  
16 because I'll mess it up, to Al Linden.

17       LINDEN: Al Linden, BSC. The Ghost Dance Fault only  
18 comes into play in Panel 4. Basically, it's right in this  
19 area here. So, these drifts in this portion of Panel 4 will  
20 cut through it. There will be a stand-off from the fault in  
21 those drifts, but there's no stand-off to keep the  
22 excavations outside the Ghost Dance right now.

23       BULLEN: Bullen, Board. So, is this the first time that  
24 we have heard that there will actually be emplacement across  
25 the Ghost Dance?

1 NEWBURY: No, they heard it in January.

2 BULLEN: We heard it in January, but I just didn't see  
3 it then? I wasn't paying attention? Thank you, Claudia.

4 So, Panel 4, you're going actually across the Ghost  
5 Dance, which correct me if I'm wrong, but I kind of thought  
6 it was a fast flow pathway that you might want to kind of  
7 avoid. But I know you're not going to place--but you're  
8 going to intersect it with, I don't know, what, 25 or 30  
9 drifts?

10 LINDEN: Yes, there's approximately 20 drifts, 25 drifts  
11 down there.

12 BULLEN: I will be very interested to see the PA  
13 analysis of that. We'll get Bob Andrews some other day.  
14 But, thank you very much. I just wanted to clarify that.

15 Thank you, Mr. Chairman.

16 ABKOWITZ: Okay, thank you, Dan.

17 This is Abkowitz, Board. I do have one final  
18 question. Has there been any development of any kind of  
19 emergency preparedness activity, or emergency response plan  
20 to deal with any contingencies that could occur involving,  
21 you know, dangers to workers both at the surface facility and  
22 also in the underground?

23 LACHMAN: Claudia, do you want to handle that? I don't  
24 know.

25 NEWBURY: This is Claudia Newbury, DOE.

1           Dr. Abkowitz, that's required by the license for  
2 the NRC. So, we will have emergency preparedness plans, as  
3 well as safeguards and security plans at the time we start to  
4 accept waste.

5           LACHMAN: The only thing I could add is remember if you  
6 go back to 11, the construction development, remember, it's  
7 always on positive pressure. If something were to happen  
8 that we lost the development side ventilation, then the  
9 emplacement side ventilation would have to be shut down until  
10 you could get the people out, so that you would not have  
11 workers in a potential flow path.

12          ABKOWITZ: Okay. But there will be a formal plan that  
13 will have--

14          LACHMAN: As required by law, yes, at some point.

15          ABKOWITZ: Okay, thank you. Priscilla would like the  
16 last word before lunch.

17          NELSON: Nelson, Board.

18                 There's a lot of people interested in this thermal  
19 management issue, and understanding how the evolution of  
20 modeling capability is going regarding ventilation and  
21 humidity moisture. So, I'm wondering at what point will  
22 there be a publicly accessible document that people who are  
23 interested in this can access and consider, because there's  
24 more than one way of addressing these issues, and  
25 technically, people want to satisfy themselves.

1 LACHMAN: So, are you referring to the ventilation AMR?

2 NELSON: Yes. Well, it's going to have to be updated  
3 from previous ones.

4 LACHMAN: Yes.

5 NELSON: So, what I'm wondering is when will the  
6 information on the footprint as it is now expected to work  
7 become available for review by the public?

8 LACHMAN: The ventilation AMR is a specific instance, is  
9 currently in analysis, the analysis model report, is  
10 currently being revised. They're putting in the analyses  
11 with respect to the new information on ventilation  
12 efficiency, and the layout, and I don't know off the top of  
13 my head the exact date. I know it's this fiscal year, and  
14 I'm not sure when that's published. I don't recall. I'd  
15 have to pull a schedule.

16 NELSON: Does anybody know a target date? No? Okay.

17 ABKOWITZ: Okay, thank you. Kirk, thank you for putting  
18 us back on schedule as well.

19 I wanted to thank all of our speakers from this  
20 morning. This concludes our morning session. We'll be  
21 reconvening at 1:30, and we'll be starting to hear from a  
22 variety of different stakeholders involved in the waste  
23 management system.

24 Those of you that are unfamiliar with the premises,  
25 there is a restaurant down adjacent to the casino that has a

1 buffet that's fairly quick and very inexpensive.

2 Thank you.

3 (Whereupon, the lunch recess was taken.)

4

5

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8

AFTERNOON SESSION

9 ABKOWITZ: We're ready to start the afternoon portion of  
10 our program. And as I mentioned in my opening remarks this  
11 morning, we wanted to create an opportunity to hear from a  
12 variety of stakeholders who will be engaged in activities  
13 related to the waste management system. And the emphasis in  
14 some of the discussion this afternoon, I imagine will be  
15 focusing more so on the transportation component perhaps than  
16 some of the other pieces that we've already reviewed today.

17 I also wanted to reiterate that we have a public  
18 comment period at the end of the agenda today, and if you are  
19 interested in providing public commentary, please make sure  
20 that you sign in with either Davonya or Linda in the back  
21 corner. That will be one opportunity for you to share your  
22 views.

23 I also mention that we will be having other panels  
24 in the future on these topics, and we're going to try to also  
25 schedule some of those in other parts of the country to try

1 to create as much of an opportunity for constructive exchange  
2 of information as possible.

3           Kicking off the afternoon program will be Steve  
4 Kraft from the Nuclear Energy Institute. He will be talking  
5 about industry experience in transporting highly radioactive  
6 materials. Steve is actually well known to the Board. For  
7 many years, he has been employed by NEI and has represented  
8 the nuclear industry's view on management and disposal of  
9 spent nuclear fuel.

10           Steve?

11           KRAFT: Thank you, Dr. Abkowitz. I appreciate the  
12 opportunity to appear before the Board. Again, I was rather  
13 hoping that my history would not be discussed, or I get an  
14 opportunity to discuss it myself, because after turning down  
15 lucrative offers from playing NHL when I got out of college,  
16 I decided to devote--oh, wait a minute, that's what I tell my  
17 children. I'm sorry. Why did you think that was a joke. I  
18 mean, really.

19           I've been asked to discuss the industry's  
20 experience with transporting used nuclear fuel. However,  
21 there's been a lot of discussion from this podium in response  
22 to questions from members of the Board and Staff about the  
23 utilities will do this, and the industry will do that, and  
24 it's kind of been a one sided discussion. So, anyone that  
25 wants to ask the questions that they've asked before and get

1 our answers to those questions, I'm more than happy to do  
2 that, Dr. Bullen.

3           Our experience with used nuclear fuel  
4 transportation has been exemplary. Four decades of  
5 experience, 3,000 shipments, 78 per cent by truck, 22 per  
6 cent by rail, 1.7 million miles in this country alone. There  
7 are several shipments a year going on right now.  
8 Internationally, Jeff Williams described the number of  
9 shipments internationally.

10           More shipments have been made internationally to  
11 date than will ever be made in support of this program. And,  
12 of course, that will continue over time. So, when you have  
13 the amount of material that's been moved, no release of  
14 radioactive contents, no injuries associated with the  
15 radioactive nature of the shipments.

16           Of course, when you roll a truck off a highway, the  
17 driver could be injured, and perhaps killed, as was in one  
18 case many years ago, but that's not a radiological accident.  
19 That is a transport accident.

20           In the records, there are eight accidents or  
21 incidents with casks. But I should point out that four of  
22 them were empty casks, and those accidents are cataloged by  
23 NRC because they want to know what happened to the cask in  
24 the dynamic environment of the accident, whether or not  
25 there's been spent fuel inside.

1           So, you know, you hear a lot of numbers sometimes  
2 about if they're talking about "X" number of shipments over  
3 time for DOE, and the percentage of the incident rate in the  
4 industry is eight accidents out of 3,000, you do the math,  
5 and then you do the math again, and you see how many  
6 accidents you'll have. Well, cut all those numbers in half,  
7 because the 3,000 was with fuel in it, and all the numbers  
8 you hear from DOE about shipments have fuel in it. So, you  
9 have to sort of look at it that way.

10           I agree with what Dr. Nelson was saying when asking  
11 questions about the integrated safety aspects of it, and I  
12 just want to take that a little further, if I could. The  
13 fundamental bottom underpinning of the integrated safety  
14 aspects of the transportation part of the program is a  
15 comprehensive set of regulations that are applied uniformly  
16 across the board. And, yes, there are many parties involved.  
17 You've got the DOT, NRC, DOE's own internal regulations, et  
18 cetera. And that's why I rather like the idea of an  
19 integrated safety plan, because I can imagine a situation,  
20 and I think this is what you were getting at, I can imagine a  
21 situation where you've got competing interests between  
22 jurisdictions, between operators, the company that's going to  
23 transport, and if there isn't some fundamental integrated  
24 safety plan, approach, goal, whatever you want to call it,  
25 that everyone has to work to, you can find a person driving



1 the truck, or driving the train, being pulled in different  
2 directions about go here, don't go there. That's a safe  
3 haven. That's not a safe haven. And all of that kind of  
4 confusion has the potential to lead to safety.

5           But that's why we point to a comprehensive and  
6 uniform set of regulations. And, of course, the fundamental  
7 aspect of the safety is the canister--I should say the cask,  
8 and that's where the NRC licensing criteria come in.

9           Right now, Progress Energy routinely moves fuel  
10 from Brunswick Station to Sharon-Harris Station, both in  
11 North Carolina. The reason behind that is they had a small  
12 dry storage facility that become cost burdensome to operate  
13 because it was rather small, and the Sharon-Harris plant had  
14 been designed as a four unit facility, and they built the  
15 fuel pools, but they hadn't built the other units. So, they  
16 are using those fuel pools and they have their own dedicated  
17 train that they operate. They have their own IF 300 rail  
18 cask, which Jeff described as one of those casks that can  
19 still be used. You can see here how many shipments they've  
20 moved, how many train shipments.

21           The one thing that I really would like to emphasize  
22 with the Progress Energy experience is the detailed  
23 procedures and the adherence to the detailed procedures  
24 through the embedded safety culture that the nuclear utility  
25 has. We cannot operate our plants as safely as we do and as

1 successfully as we do without having a very strong safety  
2 culture in the plant.

3           And what's happened is that when Progress Energy,  
4 or they were CP&L when they began doing this, Carolina Power  
5 & Light, began operating a train that they got from a  
6 railroad and a cask that they bought. They began to notice  
7 it wasn't really functioning as well as they'd like to have.  
8 They were having braking problems. So, they began, they  
9 said well, we can't live with that. Let's go reduce the  
10 amount of incidents of those kinds of things, and they  
11 changed braking systems, they changed piping systems, et  
12 cetera.

13           So, they do bring that culture to it, which we  
14 think is incredibly important to the transportation. They  
15 have a dedicated shipping organization because they do it  
16 often enough, and that brings about the safety culture. They  
17 are constantly inspecting the tracks, the railcars, the  
18 locomotives, what have you. And they've got a very strong  
19 public outreach program. They are always in contact with the  
20 sheriffs, the first responders along the way.

21           And I think Dr. Nelson mentioned the turnover in  
22 that. Yes, they do turnover. Volunteer fire departments  
23 turn over quite a bit, which is one reason why you don't  
24 train until you're within three years. It's not worth  
25 training until you're within three years. And then you've

1 got to train probably a little bit each year, and then every  
2 three years, a big program again.

3           So, I just point that out that this is the  
4 experience that we've having right now, and it's all been  
5 quite good.

6           You probably all remember, was it last year, an  
7 incident with one of these shipments where a couple of young  
8 fellows in a work program from the county detention facility  
9 decided it was time to leave that facility without  
10 permission, and then ran away from a work gang and saw the  
11 train going by, and saw the flat cars with the casks, and  
12 hopped on board. The train was going five miles an hour  
13 through that particular town due to an agreement with that  
14 particular jurisdiction that it would not go above five miles  
15 an hour. These shipments have armed guards. They are more  
16 than armed guards. The industry's armed guards are trained  
17 para-military security forces. We run the most hardened  
18 industrial facilities in the world, and the people who are on  
19 those trains are exactly that.

20           Two of them got on the train. One saw the guns and  
21 got off, and the other one waited a little bit and got  
22 captured before he got off. Fortunately, no one had to shoot  
23 anybody. But that's what happened, and they were prepared to  
24 do what they had to do to protect that shipment. So, there  
25 was a real experience, a real test of what we say is the case

1 with these shipments.

2           I'm accompanied today by John Vincent of EEI. John  
3 is one of the country's leading experts on shipping spent  
4 fuel. He's one of the rare individuals, in that he's  
5 actually shipped fuel. Not too many people have done that.  
6 And before he joined EEI and he was at GPU Nuclear, he was  
7 also the vice-president for rail transport with PFS, Private  
8 Fuel Storage, Incorporate. And PFS worked very closely with  
9 the rail industry to develop what I think is going to be the  
10 forerunner of what DOE is going to have to do in terms of  
11 shipping.

12           Prior to PFS working with AAR, the railroad had a  
13 HAZMAT procedure that limited spent fuel shipments to 35  
14 miles an hour, required that if trains were either passing or  
15 meeting opposite directions, one of the trains had to stop,  
16 and there was no free exchange among the different railroads.  
17 In other words, if you had a dedicated train with the spent  
18 fuel on it, that railroad had to carry through net crates,  
19 commercial problems.

20           The problem was not with the railroads that they  
21 doubted the integrity of the casks. They saw all the  
22 studies. They saw all the videos. They knew what the casks  
23 were capable of doing. But the problem they had, as PFS  
24 finally uncovered, was that we haven't built a new railroad  
25 in this country in 50 years, and it has become a completely

1 saturated transportation system, such that if you have a  
2 derailment on a main line in the middle of the country, odds  
3 are you're stopping trains in Florida. So, it became a  
4 commercial interest on behalf of the railroad to come up with  
5 designs that minimized derailments, minimized the possibility  
6 of accidents, not because they were concerned about the cask  
7 opening up. They just were concerned about the integrity of  
8 the ability to operate the railroad.

9           So, they worked very, very closely with PFS, and  
10 they came up with a car design that now permits routine  
11 freight speeds of 50 miles an hour. They don't have the stop  
12 and pass restriction, and they can do free interchange, no  
13 longer an operational obstacle.

14           All shipments for PFS will be done by dedicated  
15 train. The industry has no problem with making policy  
16 determinations. They will be done by dedicated train. The  
17 new rail cask design involves--if I could just go to the next  
18 slide, I think I have a picture. There's a low boy design.  
19 Jeff described that. It's got two cars in front and back.  
20 You can't see it too well in this picture, but there's a span  
21 bolster that connects the front car and the back car and the  
22 tank that you see on the car. That's part of the pneumatic  
23 braking system. All these are designed to carry the load  
24 very safety, carry the load at the speed that they're  
25 interested in, as well as provide more assurance on the

1 braking system, which is what was causing some of the speed  
2 limitations.

3           These cars were designed and tested at the  
4 Transportation Technology Center. They've gone through speed  
5 tests, shaker tests, all the things you can possibly imagine,  
6 and they will be used for PFS. We suspect that the railroads  
7 will be very interested in using this design for DOE. So, I  
8 think that that's a very good step forward in assuring the  
9 operational safety of spent fuel transport.

10           Let me just amend something here before you ask  
11 about it. That's a mock-up spent fuel cask full, weight 125  
12 tons. The cradle is not the cradle that would be used.  
13 That's an overly high cradle. For the purposes of testing,  
14 they put the CG higher on the system design so they could run  
15 it around and it would sit lower, as you would imagine.

16           The rail car, the whole package you see right there  
17 weighs 476,500 pounds. Of that, the cars are 155,000 pounds.  
18 The cask is 250,000 pounds, and the balance is the cradle  
19 and all the ancillary equipment on the design.

20           I guess about six months ago, we began thinking  
21 that as transportation is going to become of more interest to  
22 many, many and diverse groups throughout the country, DOE,  
23 other agencies, states, counties, tribes, other interest  
24 groups, et cetera, we thought that we would take all the  
25 things we always believed about transportation and put them

1 into a policy that we would get the NEI board of directors to  
2 approve, and then becomes what we have to work off of, and  
3 what we would want other people to recognize are our views on  
4 transportation.

5           And these next two slides describe that.  
6 Transportation must be safe and secure. That sounds like  
7 motherhood, but there's a lot that goes into those two words,  
8 safe and secure. And we think the way to do that is to  
9 continue what the industries were doing for the last four  
10 decades in terms of safe transportation. We think we  
11 understand how that gets done. There are vendors in the  
12 industry that know how to do this. So, to adopt those  
13 transportation principles that we have used.

14           We think DOE should adopt the mostly rail scenario.  
15 That's part of our policy and we firmly believe that's the  
16 right way to go. Now, that doesn't mean there's no truck, as  
17 Jeff described. And I would suspect early on, there will be  
18 more truck than later, because what you're faced with is if  
19 the waste acceptance Q operates the way it appears to be  
20 structured right now, a lot of the early fuel comes from  
21 shut-down plants. A lot of the shut-down plants are the  
22 older plants. The older plants tend not to have the direct  
23 rail connection, so there may be more truck involved. There  
24 may be more mixed mode shipments than there will be later on.

25           And then there's a series of principles, some of

1 which are pretty obvious. Certify the casks in accordance  
2 with NRC. Enforce the existing comprehensive regulation.  
3 You could read them for yourself.

4           But, if you go down to the fourth dash, adopt a  
5 safety culture, this is the greatest teaching that I think  
6 the industry can offer anyone that wants to get involved in  
7 anything nuclear, particularly transport, is the adoption of  
8 a safety culture. The adherence to a system of procedures,  
9 quality assurance, training, and over and over and over  
10 again. We have proved this is incredibly valuable to our  
11 operating plants. It's allowed our operating plants to get  
12 up to an average capacity factor of 90.6, and no more than  
13 eleven years ago, it was down in the 70s. So, that just  
14 proves that safety and commercial operation do go hand in  
15 hand.

16           Coordinate routing with states and tribes. I think  
17 that goes to the need for the integrated plan. Best  
18 available transport routes, we want them to adopt dedicated  
19 trains, et cetera.

20           With regard to the program that you were discussing  
21 all morning, I am personally dismayed that DOE has yet to  
22 issue the transportation plan, strategy, whatever you want to  
23 call it, document that Secretary Abraham promised during the  
24 hearings last year in front of the Senate on the resolution  
25 approving Yucca Mountain, where he talked about the need for



1 a transportation strategy.

2           It seems to me that that is the top level document.  
3 That's what all the things you've been asking about all day  
4 long with regard to transportation flow from that. The need  
5 for stakeholder input would be described in that, how you  
6 would do that, how you would select modes, how you would  
7 select routes, et cetera. And how is not telling you what  
8 they are, but how the Department will go about doing that,  
9 and open that up for comment and have the people who are  
10 directly affected comment back as to how they want to see  
11 that done.

12           The question was asked by Dr. Abkowitz about when  
13 are you going to select mode. Well, let me give you an  
14 example. To me, mode is part and parcel to route. And the  
15 kind of thing that I would imagine would happen, let's pick a  
16 hypothetical, let's say you, hypothetically, have a power  
17 plant on a large inland body of water, hypothetically, and  
18 when you built the plant, because you are on that body of  
19 water, you didn't bother to install major roads or major rail  
20 connections, because you barged in all the heavy gear, the  
21 steam generators, the reactor vessel, the switch gear, all  
22 that stuff. So, the DOE planners might logically conclude  
23 maybe we should barge spent fuel casks in and out.

24           Well, perhaps the surrounding communities and the  
25 states touching that large body of inland water might say oh,

1 we don't want that. Well, then that produces the opportunity  
2 for dialogue, where all the stakeholders can get around the  
3 table and say, well, what do you want to do. Do you want the  
4 fuel moved, or don't you want the fuel moved? If you want  
5 the fuel moved, you don't want to barge it, how do you want  
6 to do it? Do you want to go down that road to that stoplight  
7 and take--think about everything that can flow from that.  
8 What DOE does not have is a strategy. You know, Jeff said  
9 they were working on it, and, you know, hopefully it will  
10 come out soon. But that's where it all has to start.

11           The next thing they have to do is figure out the  
12 logistics that flow from that, so much fuel in these  
13 locations, I've got to get it to that location, I've got the  
14 possibility of barge, rail, intermodal, what are they going  
15 to be. Until you know what those possibilities are, there's  
16 no basis to talk. This is not rocket science. This is not  
17 even science. This is just practical application of planning  
18 and engineering to get forward on this program.

19           And, again, I'd just point out that that's where  
20 the integrated safety system would come out. It's where you  
21 would describe how you're going to do your emergency  
22 planning, I mean, all that stuff that's been asked about.

23           Transportation system, of course, needed it.  
24 They're going to support waste acceptance beginning in 2010.  
25 We want them to confirm the rail. I apologize for the

1 acronyms, but we couldn't fit all the words in. The draft  
2 transportation integration contractor statement of work that  
3 was issued in September was a major improvement over the  
4 regional servicing contractor. It still is terrible and  
5 needs to be improved dramatically. We read that. We  
6 couldn't figure out what someone would bid on. And that's  
7 the feedback we gave them in our letter back to them, which  
8 they have not made any of that public in terms of the record.  
9 It says exactly that. It says you've got to put out the  
10 strategy. Then you've got to define what it is you want  
11 people to really--a better definition of work, schedules and  
12 milestones, et cetera, dedicated trains, and of course  
13 incorporate benefits of PFS planning.

14           NRC just recently published the testing protocols  
15 for the package performance study. This is something they  
16 had been talking about for some number of years now, and I  
17 understand there will be more public meetings in the next few  
18 months about that. We are interested in how they're going to  
19 proceed. I'm picking my words carefully here. We are  
20 interested in how they're going to proceed with that.

21           Right now, the regulations produce extraordinarily  
22 safe casks and an extraordinarily safe shipment. So, it begs  
23 the question of what is all this about. And when we've asked  
24 DOE about this--I'm sorry--NRC about that in the public  
25 meetings they've had, the answer has been, well, there are

1 certain things we want to learn about better because we've  
2 improved analytical capabilities, et cetera. But, also, it's  
3 for public confidence building. And we said fine, you know,  
4 that's fine by us. We're all for that. How are you going to  
5 do that? And where they got lost in their discussions over  
6 the months was telling us how they were going to take a cask  
7 and, you know, lift it up to 30 feet and drop it and  
8 instrument it on a non-yielding surface.

9           And the reaction we have to all of that, and it  
10 doesn't take a focus group to tell you that, is that the  
11 average member of the public has no clue what that means and  
12 what that does. So, what you need to do is come up with  
13 testing that actually demonstrates something that the public  
14 can actually see and understand.

15           Now, for example, and this is some problems we  
16 still have with their plans, is that I have no difficulty  
17 with them wanting to take a cask and drive it 75 miles an  
18 hour into a wall to prove the cask is okay. But don't make  
19 it an unyielding wall. I mean, let's talk about real  
20 conditions. That cask will never hit an unyielding wall in  
21 reality, because they don't exist. You have to really go out  
22 of your way to build something awfully close to it in  
23 testing.

24           So, we would like to see them use real world  
25 criteria and real world situations, and invite the public to

1 comment on testing procedures and witness the actual viewing.

2           A number of years ago, British Nuclear did a test.  
3 There is a very elaborate railroad test facility in England,  
4 and they took a cask that's designed for Magnox fuel and laid  
5 it on a rail car on its side across a crossing, and they took  
6 a remote controlled train and ran it about 80 miles an hour  
7 into that cask, much the same way as Sandia National  
8 Laboratories did with the trucks back in the Seventies, and  
9 they obliterated the front end of that train pretty good.  
10 And when asked who witnessed it, the answer was Railway Bus,  
11 people who love railroads, who never see the accident, they  
12 just see the aftermath.

13           People who were interested in transport of spent  
14 fuel were nowhere to be seen except the professionals who  
15 showed up. So, I'm not clear what purpose that was. They  
16 instrumented it, you know, and they filmed it, and it was all  
17 very exciting to watch, you know, the films of it, but I'd  
18 just point out that if you're going to do it for the purposes  
19 of public confidence building and outreach, then you need a  
20 whole different kind of plan than if you're going to deal  
21 with scientific work.

22           If I could have the final slide, just a summary.  
23 Used fuel transport has been and will be safe. I think we've  
24 proven that over the years, both in this country and  
25 internationally. Significant experience for DOE to take

1 advantage of. Transport cask designs are strong and safe,  
2 uniform regulations, extensive planning, and our experience.

3           That closes what I wanted to say on transportation.  
4 I'm more than happy to answer any questions about this and  
5 any other topic you might ask.

6           ABKOWITZ: Thank you, Steve. I'm going to actually lead  
7 off with a couple of questions. I certainly learned some  
8 from your presentation, and it certainly appears that the  
9 industry has had a lot of practical experience in this area.

10           Referring to the DOE strategic plan that is  
11 purported to be under development, have your opinions, or the  
12 opinions of the constituents that you represent, been  
13 formally solicited by DOE in preparing that plan?

14           KRAFT: No, sir, have not.

15           ABKOWITZ: And could you speculate on why that's the  
16 case?

17           KRAFT: No, I couldn't. I mean, you asked Jeff and he  
18 gave you the answer, "I can't answer you," and I get the same  
19 answers when I ask them. So, it's hard to really know.

20           ABKOWITZ: We're under the impression that perhaps  
21 because of the pending litigation between DOE and the  
22 utilities that that had cut down on the communication  
23 channels. Is the NEI a party to those suits?

24           KRAFT: No, NEI is not involved in any of that  
25 litigation. The litigation is carried out by individual

1 corporations that have a true interest. We are not one of  
2 those in those court of claims cases.

3           I think that you heard Jeff and Chris this morning  
4 talk about the litigation being a barrier to discussion. I  
5 have to tell you this morning was the first time I ever heard  
6 them say so in public. There have been hints that that's the  
7 reason they're not talking to us. I don't think that has to  
8 do with transportation, though, because we have attempted to  
9 engage them over the last year on facility design, waste  
10 acceptance rules, lots of things have to get worked out  
11 between the utilities and DOE on waste acceptance activities,  
12 and up until about a year ago, there was a very open  
13 dialogue, and all of a sudden it sort of stopped. And we  
14 never knew why. There were hints that it was the litigation.  
15 This morning, I finally heard it.

16           But, I don't think that's what's affecting the  
17 transportation. I think they are just simply not ready to  
18 talk. You can draw your own conclusions from that, but I  
19 think that that's the reason on that one.

20           ABKOWITZ: Okay. And I assume that you are ready to  
21 talk when asked.

22           KRAFT: Absolutely.

23           ABKOWITZ: I also had one other question. You made the  
24 comment about the mostly rail scenario being the one that  
25 appears to have the most practical opportunities at this

1 point in time. Do you see that the mostly rail scenario  
2 would require having a spur built into the Yucca Mountain  
3 facility, or is it plausible that since a lot of that  
4 material will be in dual purpose casks, that a rail spur  
5 construction is not required?

6 KRAFT: Well, dual purpose has nothing to do with  
7 intermodal. That's, of course, transport and storage.

8 ABKOWITZ: Okay.

9 KRAFT: So, let me make sure we get the terminology  
10 right here. I think the answer has got a timing quality to  
11 it. I think that over the long haul of the program where  
12 they're going to run the acceptance of waste and the  
13 emplacement of waste over a very long period of time, that  
14 efficiency and cost probably indicates you should have some  
15 kind of rail connection into the state somehow, whether it's,  
16 you know, one of the 70 showed, or some other idea that they  
17 look at and evaluate, I really think that that's right.

18 But you probably can construct the program up, and  
19 this is what I meant by understanding logistics as well, I  
20 mean, if you've got the fuel you know that you want to move  
21 in the first year or first two years, and you don't have the  
22 rail spur built yet, there are ways around that problem. You  
23 could do legal weight truck from the reactors. I don't  
24 recommend it. It's a long haul. It's not really the way we  
25 would prefer it. You could do intermodal facilities



1 somewhere in the state of Nevada and heavy haul large cans  
2 over for a very limited amount of time. But I think in the  
3 long run, you're going to need that rail connection.

4 ABKOWITZ: Okay, thank you. Dan?

5 BULLEN: Bullen, Board.

6 Steve, since you alluded to it, I thought I'd ask  
7 you with respect to the industry perspective on communication  
8 with DOE, particularly for the selection of technology, a lot  
9 of spent fuel is going into dry storage, and right now, the  
10 economy of scale dictates that you put it into big cans,  
11 those are dual purpose cans that obviously the DOE has to cut  
12 open and throw away, is there an opportunity for  
13 communication between the DOE and the utilities in the area  
14 of yet to be canisterized fuel to make a little bit of that  
15 transition easier?

16 KRAFT: I'll answer the question, but first a qualifier  
17 that you're right, most of the fuel going to dry storage  
18 going forward will be in dual purpose casks, and there's a  
19 reason for that that I'll mention. And nothing I say today  
20 suggests that is still not the optimal way to do it, even if  
21 they cut them open and throw away the can, not throwing away  
22 the casks, the canisters.

23 BULLEN: All right.

24 KRAFT: We understand ourselves on that. There is ample  
25 opportunity for interaction with the industry on this

1 question. You know, we've made ourselves available. We told  
2 them we want to talk to them about it. I think the industry,  
3 no disrespect intended, you're opening the door here, no  
4 disrespect intended to any of the speakers. Okay? I know  
5 them all. I've known them for a long time. I respect them.  
6 But to hear them tell it, you would think the industry is a  
7 bunch of recalcitrant children who simply don't want to  
8 cooperate. And you know what? It is not the case.

9           Yes, there are issues the industry has, and it is  
10 not a one way street. We are connected with a contract.  
11 Many of the utilities are still regulated entities and have  
12 Public Utility Commissions that oversee what they have to do.  
13 In other cases, they have boards of directors that minimize  
14 cost. And my point is that there are discussions that can be  
15 had that will lead to an understanding of what fuel will show  
16 up, and what basis can be available for that material to be  
17 the material that DOE wants.

18           Now, granted, I doubt that DOE would be successful  
19 in ordering utilities to say I want, you know, this from this  
20 plant and that one from that plant and that one over there,  
21 because that gives me an optimal heat load in my waste  
22 package. That's probably too much to expect. But there is a  
23 big difference between the sorts of things you heard said  
24 this morning, and absolute, you know, adherence to a strict  
25 set of rules from DOE.

1           So, there is a lot of opportunity for DOE to talk,  
2 and if we have to work our way around litigation concerns,  
3 well, then let's work around litigation concerns. I mean,  
4 that's just not been addressed. And I personally would like  
5 to see that happen, and I know the utilities would like to  
6 see that happen as well.

7           BULLEN: Bullen, Board. Just one quick followup  
8 question along that line. You introduced the concept of the  
9 private field storage initiative, which we haven't heard  
10 anything about from DOE because obviously it's funded by the  
11 utility industry. How would you foresee the interface  
12 between PFSN, the Yucca Mountain, predominantly because of  
13 the fact that obviously Yucca Mountain doesn't have the  
14 staging capabilities to accept fuel, but if there's enough  
15 lag storage sitting out in the desert in Utah, do you see it  
16 as an opportunity that DOE is going to embrace, or do you  
17 think DOE is going to completely ignore it?

18          KRAFT: Given the way you just described it, I want DOE  
19 to ignore it. Because part of the agreement with the host  
20 organization, the Skull Valley Band of the Goshute Tribe, is  
21 that it is not part of the DOE program at all. How it would  
22 interface is the same way Morris, Illinois will interface.  
23 It is just another location that utilities have their fuel.  
24 The contract allows utilities to say I don't have it at the  
25 plant. I have it here. Go drive your truck or train over

1 there to get it. That's exactly the relationship they will  
2 have. This facility is a substitute for onsite storage, not  
3 for anything DOE has to deal with.

4 BULLEN: Bullen, Board. Just one last question then.

5 To reiterate the fact that it's not on site, you  
6 basically have a Q of utilities that basically think they  
7 have this pecking order of shipments, and my guess is that  
8 you can then designate that it go to PFS and pick up those  
9 types of shipments, rather than come to the utility to get  
10 them; is that the case?

11 KRAFT: Yeah, within the limits of the way you described  
12 it, I think that's correct. The utilities, you know, Jim  
13 Gardiner was correct this morning, as was Chris Kouts, the  
14 strict reading of the contract says as a utility, I get a  
15 slot associated with a spent fuel element that came out of my  
16 reactor on a given date prior to all these others. It's  
17 like, you know, SAT scores, percentiles on the bulk, and I  
18 get to tell you as DOE, you know, I put it over here in my  
19 broom closet, so you've got to go to my broom closet to get  
20 it. Okay?

21 That is about as impractical as you can imagine.  
22 So, I think there are ways that we can work out with  
23 utilities and DOE as to how to go about doing that in an  
24 efficient way, because the utilities want this to happen as  
25 well, and I think there are ways to work that out.

1           One of the things that we've thought about is  
2 campaigning. And campaigning, you know, imagine you've got  
3 so much fuel at a utility and it would take three years of  
4 shipments in or around the utilities operating schedule to  
5 off load it, well, then campaign it and plan it. Now, if you  
6 do that, then you've got several other utilities ready to get  
7 kicked back in the Q a little bit, and we'll have to deal  
8 with that somehow, commercial arrangements, swapping  
9 positions, who knows.

10           But none of these have even been discussed, and I  
11 think we're at the point now where DOE is driving designs  
12 that assume the absolute worst case what they will receive,  
13 without engaging in discussions with the utilities about how  
14 to make that make some sense.

15           BULLEN: Thank you very much.

16           ABKOWITZ: Okay, thank you, Dan. With Dan, it's kind of  
17 like Kobe Bryant, you can't control him, you can only home to  
18 contain him.

19           Do we have any other questions from Board members,  
20 consultants, Staff?

21           (No response.)

22           ABKOWITZ: Steven, thank you very much.

23           KRAFT: Thank you very much. I appreciate it.

24           ABKOWITZ: Before I introduce our next speaker, I have  
25 kind of the corollary to what Steve was talking about trying

1 to convince his kids that he was an NHL player. I actually  
2 play ice hockey, and I've got the opposite problem. A few  
3 years ago when I was felling more spry than I do now, I  
4 promised my son I would continue to play competitive hockey  
5 until a certain milestone age that I haven't reached yet, and  
6 it's becoming very difficult for me to fulfill that  
7 commitment. And thank goodness for Abdula, is all I have to  
8 say.

9           Our next speaker is going to be representing the  
10 State of Nevada, and our speaker is Bob Loux. Many of you  
11 certainly know bob from past activities. He's certainly very  
12 familiar to us here at the Board.

13           Bob has a master's degree from the University of  
14 Nevada, Reno, and has been employed by the State of Nevada  
15 since 1976. His work for the state has primarily involved  
16 energy policy, with emphasis on electrical energy  
17 forecasting, natural resource assessment, renewable energy  
18 stimulation, energy conservation, and, most recently, high-  
19 level radioactive waste management.

20           Today, Bob will give us the State's views on the  
21 transportation issues regarding spent fuel and high-level  
22 waste.

23           Bob?

24           LOUX: Good afternoon, Mr. Chairman, Members. Thank you  
25 for your invitation to be here today. I guess if DOE

1 believes the industry are a recalcitrant child, I'm not sure  
2 how they think of the State. Well, maybe I do know how they  
3 think of the State. Bad analogy.

4           As you may know, the State has employed numerous  
5 experts in the transportation arena. Most notably, you have  
6 Bob Holstead and others, and due to conflicts with the  
7 meeting in Tucson, the Waste Management meeting, Bob is there  
8 and delivering papers concerning I think many of the topics  
9 you're talking about today in transportation, and I hope that  
10 I can provide, with your agreement, Mr. Chairman, provide the  
11 panel and others with those papers as they're released later  
12 this week. As you know, Bob is the real expert here, so I'm  
13 kind of pitch hitting for him in some sense.

14           Obviously, the State of Nevada has been involved in  
15 transportation issues for many years. One of our primary  
16 concerns at this juncture in time has to do with the  
17 Environmental Impact Statement. As I think it was alluded to  
18 here earlier, the State in fact is engaged in litigation with  
19 the Department of Energy over the adequacy and the validity  
20 of the existing Environmental Impact Statement for Yucca  
21 Mountain.

22           And our view, of course, is that the EIS is legally  
23 and substantively deficient and inadequate in many respects,  
24 principally in the transportation issue, as well as others,  
25 and we would contend that the only way that a comprehensive

1 transportation program and plan can really go forward is with  
2 a plan that's embedded in NEPA, embedded in the Environmental  
3 Impact Statement process. And we think that DOE has got to  
4 commit to that, and specifically prepare an EIS that's  
5 specifically for transportation.

6           It's interesting to note in our litigation against  
7 DOE, of course as I've indicated, we believe it's legally  
8 deficient and inadequate. The government, on the other hand,  
9 has an interesting argument about the EIS itself that has  
10 some bearing here, in that they're arguing, in response to  
11 our case, that the resolution adopted by Congress to override  
12 the State's veto and signed in law by the President  
13 constitutes entirely new law and supersedes entirely the  
14 Nuclear Waste Policy Act as we know it, and as a result,  
15 they're arguing that in fact the EIS is moot.

16           So, a cynical person might reach a conclusion that  
17 depending either one of us is right, either that we're right  
18 and it's insufficient and legally deficient, or whether  
19 they're right and it's moot and doesn't exist, there really  
20 is not an Environmental Impact Statement concerning  
21 transportation, and perhaps not even Yucca Mountain, and may  
22 not be one in the future.

23           So, that's why I think we reiterate the concern  
24 that we need a valid EIS, one that's specific to the  
25 transportation issues, that will track the system that's been



1 talked about, both nationally and in Nevada.

2           What DOE appears to be doing instead is sort of a  
3 piecemeal approach to transportation planning, crafting  
4 whatever message seems to fit whatever audience they're  
5 talking to at the time.

6           For better than two decades, we have been involved  
7 in this issue. We have probably provided the most  
8 constructive comments and criticisms of the program in the  
9 transportation arena itself that we've made anywhere else.  
10 And despite the opposition to this site, we've provided every  
11 one of the federal agencies involved our view on these issues  
12 and made constructive proposals about how we think the system  
13 ought to go forward, how we think the planning ought to be  
14 done, and other issues associated therein.

15           I'd like to note two things. One is we've had a  
16 petition for rule making into the Nuclear Regulatory  
17 Commission since 1999 concerning transportation, terrorism  
18 and sabotage, which has never been acted upon, never been  
19 dealt with at this point, still pending. And after much arm  
20 twisting I guess, the Advisory Committee on Nuclear Waste has  
21 finally agreed to hear what the State has to say about  
22 transportation since they've heard from all of the other  
23 entities already, and a meeting I guess is going to occur in  
24 D.C. sometime in April. The actual date I don't think has  
25 actually been decided yet. So, we will be making a

1 presentation there.

2           In addition, what we'd like to do is associate  
3 ourselves with I think a document you probably have gotten in  
4 your packets from the Western Interstate Energy Board. It  
5 contains a variety of resolutions adopted by Western  
6 Governors. It contains a number of policy recommendations,  
7 and other factors that of course we've been deeply involved  
8 with and want to associate ourselves with.

9           After all, of course, the Governors are the ones  
10 that are on the front line on these issues. They're the ones  
11 that get the calls, the ones that have to make the decisions  
12 about emergency management planning, response, all of those  
13 sorts of things. So, the Governors, at least in the Western  
14 Governors, have been deeply involved in these issues for  
15 probably better than 15 years. In fact, the Department of  
16 Energy has funded the Western Interstate Energy Board, which  
17 is a component of the Western Governor's Association. They  
18 actually put together a transportation primer that contains a  
19 comprehensive framework for adequate transportation planning.

20           To maybe answer one of the questions that came up  
21 here earlier, we have not seen any evidence of any kind of  
22 planning in the transportation arena whatsoever. Likewise,  
23 we've had no contact with DOE about these issues of any kind.

24           Since the mid Nineties, we've been recommending  
25 about four basic components of risk management that should be

1 looked at by DOE. We believe there needs to be, first of  
2 all, development beyond EIS, development of a preferred  
3 transportation system. There needs to be a comprehensive  
4 approach to risk management and risk communication. We  
5 endorse the idea of full-scale physical testing of shipping  
6 containers, and we believe there needs to be an accident  
7 prevention and emergency response program that associates  
8 with the entire campaign.

9           The comprehensive risk assessment program should  
10 cover all the components of transportation. Obviously, will  
11 calculate probabilities and incorporating other data and  
12 models. This framework should be used not only working as a  
13 risk management tool throughout the project that involves the  
14 public, but risk management should be the basis of  
15 communication throughout the program as well.

16           We've advocated a preferred transportation system  
17 that DOE has yet to produce to reduce risks and avoid a lot  
18 of the public perception issues that are out there, and it  
19 has several components. I think several were mentioned here  
20 earlier. We believe dual purpose cask ought to be used for  
21 at-reactor and offsite transportation of spent fuel. We  
22 believe the oldest fuel should be shipped first. No fuel  
23 should be shipped until it has been cooled for at least 20  
24 years.

25           Rail probably should be the transport mode of

1 choice. We think that, and I'm glad to hear that the  
2 industry agrees, that the use of dedicate trains should be  
3 mandatory. That's something that the American Association of  
4 Railroads has been advocating for a while.

5           As early as possible, DOE and its carriers should  
6 identify preferred cross-county mainline rail and interstate  
7 highway routes, in consultation with stakeholders. And as  
8 early as possible, DOE should fully involve corridor states,  
9 Indian Tribes in system planning, and provide financial  
10 assistance under the 180(c) provision of the Nuclear Waste  
11 Policy Act.

12           We advocate a comprehensive and coordinated  
13 approach to accident prevention and emergency response. We  
14 believe DOE should maximize the use of regional  
15 organizations, like the Western Governor's Association,  
16 Western Interstate Energy Board. Obviously, DOE and the  
17 affected states should coordinate with Indian Tribes and  
18 local governments.

19           DOE should develop a comprehensive safety program  
20 modelled after the WGA-State-DOE WIPP transportation program  
21 that was worked on a number of years. They should adopt the  
22 Western Interstate Energy Board's September '94 proposal for  
23 evaluation and final designation of preferred shipping  
24 routes.

25           DOE should implement then 180(c) financial

1 assistance to the tribes, the state and local governments  
2 through rulemaking. And DOE should revise its plan for  
3 privatization of transportation services to emphasize safety  
4 and public acceptance.

5           The third area the state has really advocated for a  
6 long time as many stakeholders, in fact, nearly every state  
7 in the Western United States has advocated, is full-scale  
8 testing of casks. Instead of full-scale testing, the NRC  
9 currently relies on, as you know, scale model testing and  
10 computer analysis.

11           What we've urged, and it really hasn't happened,  
12 we've seen the recent draft protocol for demonstration  
13 testing, and we are going to be involved in that program, as  
14 Steve talked about earlier, and will be for very detailed  
15 comments on the testing protocol and participate in the  
16 meetings.

17           Based on our previous analysis and our preliminary  
18 review of the NUREG-1768, we're committed to the position  
19 that demonstration testing would not be an acceptable  
20 substitute for the combination of full-scale testing, scale  
21 model testing, computer simulation of each new cask design  
22 prior to certification.

23           Therefore, we advocate the following relative to  
24 cask testing. Meaningful stakeholder role in the development  
25 of the protocols and selection of the test facilities and

1 personnel; full-scale testing sequentially of all the tests  
2 prior to NRC certification, or as a prerequisite to DOE  
3 procurement; additional computer simulations to determine  
4 performance in extra-regulatory accidents, and to determine  
5 failure thresholds; re-evaluation of the NRC Modal Study  
6 findings, and revision of the cask performance standards, if  
7 necessary; and evaluation of the costs and benefits of  
8 destructive testing of a randomly selected production model.  
9 We think those are all very important elements of a cask  
10 testing program, one that we are going to be trying to  
11 persuade the NRC to move in.

12 I guess lastly, I'd like to talk a little bit about  
13 projected numbers of shipments. As you may recall, there are  
14 any number of estimates of shipment numbers. Recently, DOE,  
15 during the debate this last spring, DOE made estimates as low  
16 as 175 shipments per year to Yucca Mountain, which we believe  
17 is not only inaccurate but really under estimate the nature  
18 and magnitude and scope of the campaign.

19 In order to realize that number, a couple of  
20 assumptions have to be made. DOE would have to ship 90 per  
21 cent of the spent fuel by rail; assure that each shipment is  
22 made up of at least three cars per train; make thousands of  
23 barge and heavy haul shipments to move spent fuel from  
24 reactor sites without rail access to rail heads; create  
25 staging areas in rail yards and ports around the country in

1 order to assemble these trains; and lastly, and probably the  
2 most difficult, is construct the 300 to 400 mile rail line  
3 accident in Nevada at a cost probably exceeding a billion  
4 dollars.

5           We've reviewed all of these estimates. We've  
6 looked at the EIS. We've spent a great deal of time, and  
7 those of you that know Bob Halstead, you know that he has  
8 done this meticulously.

9           According to the DOE EIS, the 70,000 metric tons  
10 for Yucca Mountain would take about 24 years, and under the  
11 expanded capacity in the EIS of 119,000 metric tons, it would  
12 take over about a 38 year period.

13           The DOE mostly truck scenario would result in the  
14 largest number of shipments, perhaps as many as 180,900  
15 shipments over 38 years, perhaps 2,800 or more per year. The  
16 mostly rail scenario could result in anywhere from about  
17 45,000 shipments, or as few as about 13,000, depending on the  
18 mix of freight and whether they're dedicated trains or not.

19           The DOE mostly truck scenario right now is the only  
20 national available scenario that's feasible. All 72 power  
21 plants, all DOE sites can ship by legal weight truck.

22           As we said earlier, there's at present no rail  
23 access at Yucca Mountain. Construction of a new line,  
24 perhaps as many as 344 miles in length, could take ten years,  
25 cost perhaps more than a billion, and probably is a more

1 difficult engineering challenge as the repository.

2           The alternative rail construction is delivery of  
3 large rail casks by 220 foot long heavy haul trucks over  
4 distance of 100 to 300 miles on public roads, and even in the  
5 short-run, that's probably not feasible.

6           So, for maximum utilization of rail for cross-  
7 country transportation, as described in the EIS, it appears  
8 to be unlikely. The mostly rail scenario assumes DOE can  
9 ship thousands of casks by barge into the ports of Boston,  
10 New Haven, Newark, Jersey City, Wilmington, Baltimore,  
11 Norfolk, on and on.

12           Alternatively, the DOE would have to move thousands  
13 of casks from reactors to rail connections using large heavy  
14 haul trucks, which will require state permits and special  
15 route approvals. In the end, even if rail access to Yucca  
16 Mountain and all the other impediments to rail transport can  
17 be resolved, mostly rail would mean moving no more than 60 to  
18 75 per cent of the commercial fuel by rail, and the remaining  
19 are going to be by legal weight trucks.

20           In summary, I guess what we've seen is the DOE  
21 program is unfocused, is really a piecemeal approach to the  
22 whole issue. If DOE had worked through the logistic  
23 problems, it isn't apparent to us or any of the other  
24 stakeholders that are involved in looking at these issues.  
25 And, once again, the first step in this whole program and



1 plan has to be a valid EIS on which to base everything else  
2 that occurs in the program, including a national  
3 transportation plan.

4           In the handout I have given you is a whole list of  
5 statistics that our transportation people have generated  
6 regarding shipment numbers, shipment miles, and the like,  
7 which in our view are unprecedented. You can look at those  
8 are your leisure. And, as well, as I mentioned at the  
9 outset, as soon as I have available to me the four papers  
10 that our guys are preparing and utilizing at Waste  
11 Management, I'll make them available as well.

12           With that, Mr. Chairman, thank you again. I'll be  
13 happy to answer any questions you have.

14           ABKOWITZ: Thank you, Bob. We'll start with Board  
15 questions. Dan Bullen.

16           BULLEN: Bullen, Board.

17           Actually, Bob, I just have a couple of quick  
18 questions. I was intrigued by the, and I know you're not a  
19 constitutional lawyer, so you don't have to answer  
20 constitutionally, but the claim that it's a new law with the  
21 approval of the House vote and Senate vote, Presidential  
22 signature, isn't that just, and I'm going to be wrong here,  
23 it's either the Nuclear Waste Policy Act or the Nuclear Waste  
24 Policy Amendments Act that laid out the process whereby that  
25 selection was made? Was it the Amendments Act in '87?

1 LOUX: Actually, it's both of those.

2 BULLEN: Okay. But isn't that like an old law, and  
3 aren't we just following through with an old law, not setting  
4 any new laws just because they did what they said they were  
5 going to do?

6 LOUX: Well, it's a concept that we find kind of  
7 difficult to really get our hands around. Anyway, I think  
8 that the issue is difficult for us to kind of see some logic  
9 in it. But to actually rely on the statute that puts in  
10 motion all of this process, including calling for the  
11 Congressional debate and vote, and claiming that because of  
12 that, everything else in the Act is superseded, I think is  
13 going to be a difficult concept to sell to the courts at any  
14 rate. But, I agree, it's highly illogical.

15 BULLEN: Thank you. That's the first I heard of it.

16 The other question I have is in your handout, and  
17 maybe I'm just trying to get the right semantics here,  
18 because we hear numbers like 175 to 200 total shipments, and  
19 then you cite the 175 shipments on your Page 5, and then  
20 farther down, it looks like, you know, as few as 13,500  
21 shipments total, about 355 a year. If I divide that 355 by  
22 three and call a shipment three containers instead of one  
23 container, are they kind of the same numbers? I'm just  
24 trying to get the numbers to match here. So, is the  
25 definition of a shipment a little bit of semantics, or what

1 am I reading into this?

2        LOUX: Well, I think you're right. It is semantics. I  
3 mean, math is not my strong suit, so, I mean, I won't do the  
4 math. I'll trust yours on this one. But my belief is that  
5 that's relatively close. In order to achieve those, it's how  
6 you define a shipment, whether it's one container and one  
7 vehicle, or whether it's a whole train. I mean, I think one  
8 of the opponents in Nevada recently said in order to achieve  
9 this, you'd need a dedicated train that would really stretch  
10 from, you know, New York to Chicago, and to count that as one  
11 shipment, if you could do it all with a dedicated train. So,  
12 it's all in semantics and definitions, you're correct. So,  
13 you can use these any way you want, as we've written as the  
14 Secretary has done it.

15        BULLEN: Bullen, Board. One last comment, and just a  
16 suggestion.

17                With the upgrading of the studies that are going to  
18 be done for each of the reactors, which is what we heard, I  
19 mean, they basically stopped analysis in about '94 or '95,  
20 the DOE stopped analysis of what it's going to take to get  
21 fuel from sites, and I know personally that some sites have  
22 been upgraded because they had to put in dry cask storage, so  
23 they got bigger cranes, or they may have rail access to bring  
24 the casks in, I guess I would just suggest or encourage that,  
25 I'm sure Bob Halstead will be a busy guy after the happens,

1 but encourage that your numbers get updated with the latest  
2 and greatest that come out of the study that DOE is going to  
3 pursue relative to the current state of the art in 2003 as  
4 opposed to the 1994, '95 data.

5           So, I guess I'm assured that you'll do that. I  
6 just wanted to get on the record that, you know, as you make  
7 these kind of comments, everybody talks from the same set of  
8 data. It makes it a lot easier for us to work on it.

9           LOUX: It is difficult to do that. I mean, for example,  
10 in the EIS, DOE acknowledges that in 2002, that 25 of the 72  
11 power plants had not rail capacity. We think that that  
12 number probably could be as high as 32. But nonetheless,  
13 those are sort of in the ballpark ranges of sites that don't  
14 have access currently. The only way to get that material out  
15 of there is through barge or heavy haul, both of which you  
16 know have logistical problems associated with them, not that  
17 it's impossible, but the kinds of things that Steve was  
18 talking about I think are going to come into play.

19           And it seems to us that the earlier, as opposed to  
20 the later, that you get in and involve communities and states  
21 in these decision making issues, the better chances of  
22 getting them resolved in a time frame that might be  
23 productive. Holding onto this information and not going out  
24 and doing these kinds of things by the Department I think  
25 only increases the odds that they are not only going to be

1 logistically very difficult, I think they're going to  
2 increase the odds of legal challenges in other places, and  
3 have the same sort of problem that Steve was suggesting that  
4 was going to happen about well, then, how do you get it  
5 there, what are the options that are around.

6           The fact that DOE has really done none of this is  
7 in some sense surprising, in that, you know, the  
8 advertisement has been that all of this is really altogether  
9 already. And maybe I missed something in this morning's  
10 presentation by Jeff Williams that maybe there is something  
11 that's very comprehensive in nature and just ready to come  
12 off the shelf. But we haven't had any input into it, nor  
13 seen it. So, we've been hearing the same promises about a  
14 plan and all of these things for a number of months, and  
15 really haven't seen any. And I don't, as well, know the  
16 reason why.

17           BULLEN: Thank you.

18           ABKOWITZ: Okay, thank you, Dan. I have a couple  
19 questions, Bob. The first one is that we heard earlier today  
20 that the DOE has had in place and plans to use in the future  
21 the Transportation External Coordinating Committee Working  
22 Group, and I understand that the State of Nevada has been  
23 represented on that committee. What has been your experience  
24 as a stakeholder, and how do you view that mechanism in terms  
25 of an opportunity for constructive input in the future?

1           LOUX: Well, I can't speak for Mr. Halstead, who  
2 obviously is the one who attends those and has been involved,  
3 and I don't think the problem is necessarily with the forum.  
4 It's really with the kind of information that we're not  
5 getting, the kind of involvement in making decisions that you  
6 would expect, someone wanting to embark on a program of this  
7 magnitude would want to get input from all these other  
8 stakeholders that are involved. So, I don't think it's a  
9 fault with the process or the mechanism. It's really a fault  
10 with actually the information not being provided, and the  
11 lack of planning that's going on.

12           ABKOWITZ: Okay, thank you. The other question I had  
13 for you is has the State of Nevada, or what has been the  
14 extent of the State of Nevada's experience with the WIPP  
15 program, and what are your thoughts on how that's working?

16           LOUX: I can tell you that we've been involved in this  
17 process for close to 15 years, I would guess, with Western  
18 Governor's Association and the other states that are  
19 involved. And I think that our overall view is that the  
20 planning exercise, the involvement of the states was a fairly  
21 productive and helpful exercise, not only for the states and  
22 Governors, but certainly for DOE as well. And I think all of  
23 that, DOE would argue and agree, I guess, that in fact it was  
24 helpful to them as well.

25           The problem we see now that a lot of the

1 commitments that were made, a lot of the very hard fought  
2 concessions and issues that we hammered out with DOE over  
3 those years, sort of one year or two years of successful  
4 shipping took place. Now, they're moving into sort of backup  
5 many of those things, and remove them from the system.  
6 Primarily, they say for cost reasons, there's not a need to  
7 do these things anymore. But there's a movement away from  
8 the testing protocols, the other kinds of things that the  
9 states agreed to with DOE.

10           And almost in every one of these areas, and I can  
11 provide you, not here today, but later, a real detailed  
12 accounting of all of these areas that DOE has retracted on  
13 once they had an initial shipment or two, or even a year or  
14 so, all of a sudden, well, we know what we're doing now, we  
15 don't have to really do--this was only extra-regulatory to  
16 get you guys on board, is the feeling, and now we're on board  
17 and shipping, you know, we really don't have to pay attention  
18 any longer.

19           So, our experience has been mixed. Initially, it  
20 was very positive. We think we hammered out some very, very  
21 productive issues with DOE and the rest of the states, and I  
22 think it was well coordinated and worked very well to get  
23 these initial shipments made. But DOE since then has really  
24 backtracked.

25           ABKOWITZ: Thank you. Dick?

1           PARIZEK: Parizek, Board.

2           Does your office have any involvement with the 9/11  
3 issues in terms of review of transportation of the hazardous  
4 material, and so on, or is that something you're just sort of  
5 monitoring?

6           LOUX: Well, the State has an emergency management  
7 department that is primarily involved in issues other than  
8 the radiological ones, and my belief is that they have been  
9 involved in some of the planning that's been going on  
10 generally with all of the states and the federal government.

11           But as it relates to reviews that are ongoing, for  
12 example, by the NRC in terms of their review of all these  
13 issues, we've had no involvement whatsoever. We've had no  
14 input into that process, and not been asked to.

15           As I said in my talk, we've had a petition for  
16 rulemaking, in some ways, almost forecasting some of these  
17 events that have taken place since 1999 into the Commission,  
18 and their response about why nothing has been done with that  
19 petition is that it's been consumed within their own internal  
20 review of all these security and safeguard issues. But much  
21 like DOE, I don't think any of those things have come out the  
22 door yet that we're aware of, and have not seen how they've  
23 been treated at all. So, I'd have to say that, no, we have  
24 not had involvement in any of those issues.

25           PARIZEK: One other question. Do you interact with the



1 tribal concerns, or are they on their own? How do you deal  
2 with tribal concerns?

3 LOUX: We interact pretty closely with the tribal  
4 concerns in Nevada, at least attempt to, on an ongoing basis.  
5 As you might recall, early on in the program when the State  
6 was actually getting funding, which may come to an end here  
7 fairly soon, we were sharing a lot of those resources with  
8 the tribal governments in Nevada itself, making sure they  
9 had--in fact, that was the only way they could be involved in  
10 the program, attend meetings, and make their views known.  
11 But we've been attempting to work with the Nevada tribal  
12 organizations very closely.

13 ABKOWITZ: Okay. Any other questions from Board  
14 members, consultants, Staff?

15 (No response.)

16 ABKOWITZ: Bob, thank you.

17 LOUX: Thank you.

18 ABKOWITZ: I did want to announce that if anyone would  
19 like a copy of Bob's prepared statement, if you'll kindly  
20 place your name on the list with Linda and Davonya in the  
21 back there, we'll make sure that you get a copy sent to you.

22 Okay, the next perspective that we're going to hear  
23 about regarding the transportation issue is going to be a  
24 representative of the views from corridor states, and we're  
25 pleased to have Jim Reed making that presentation today.

1           Jim is with the National Conference of State  
2 Legislatures. He actually directs the Transportation Program  
3 at the National Conference. And for those of you that may be  
4 unfamiliar with the organization, it's a nonprofit,  
5 bipartisan organization, and is regarded as the nation's  
6 leading authority on state legislative issues.

7           The Transportation Program assists states on  
8 numerous public policy issues from traffic safety to  
9 radioactive waste transport through expert testimony,  
10 responses to requests for information, and in-depth research  
11 and analysis.

12           Mr. Reed is the author of dozens of policy briefs,  
13 reports, articles and books on various transportation topics.  
14 He received his master's degree in public affairs from the  
15 LBJ School of Public Affairs at UT, which is University of  
16 Texas, not University of Tennessee. And his undergraduate  
17 degree in political science from Colorado College.

18           Jim?

19           REED: Good afternoon, and I thank you, Mark, and  
20 members of the Board, for the invitation to come speak today.  
21 I'm really glad that the Board is interested in  
22 transportation issues.

23           Mark mentioned briefly what NCSL does. Let me just  
24 reiterate a couple of things. We're a Denver based  
25 nonprofit, bipartisan research and information organization.

1 We support the efforts of all 50 state legislatures and the  
2 U.S. Territories and Puerto Rico and Washington, D.C., and  
3 that includes about 7,500 state legislators and approximately  
4 30,000 legislative staff. We provide policy analysis and 50-  
5 state information on a wide variety of public policy topics,  
6 everything from abortion to taxes.

7           We organize educational forums on an annual basis  
8 to get our constituents together with themselves to discuss  
9 issues, and also with federal officials and also experts in  
10 various fields of endeavor. And we also provide input to  
11 Congress and federal agencies on state concerns. And  
12 anything we bring before Congress would be voted on by a  
13 super-majority of the states that come to our annual meeting  
14 every year. So, a 75 per cent majority is necessary for an  
15 NCSL policy to go forward in terms of influencing Congress.

16           We have had a cooperative agreement with DOE for a  
17 number of years. In 1996, several of the cooperative  
18 agreements were cut off. We remained as one of the few that  
19 were left, although our funding was reduced fairly  
20 dramatically. And we're also a member of TEC, the  
21 Transportation External Coordination Working Group.

22           What I'm going to do today is talk briefly about  
23 the federal role in spent fuel transportation safety, then  
24 talk about the state role, relate to you some state concerns  
25 and some recent state legislation, talk a little bit about

1 safety permits, a tool that I think is effective as far as  
2 states regulating transportation. The WIPP approach, we've  
3 heard something about that. I've got a few more details  
4 about what that involves. And, finally, some challenges and  
5 guidance.

6           Briefly, the federal government, of course, is  
7 preeminent in regulation, but the state role is recognized in  
8 terms of protecting public health and safety. Three primary  
9 acts are involved here, The Hazardous Materials  
10 Transportation Act, the Atomic Energy Act, and the Nuclear  
11 Waste Policy Act. And as we've heard previously, the spent  
12 fuel transportation is regulated jointly by the NRC and the  
13 DOT.

14           As far as what the DOT does, just a brief overview  
15 here, regulates shippers and carriers of all HAZMAT,  
16 including radioactive materials; regulates the conditions of  
17 transportation, including routing, handling, storage, vehicle  
18 requirements, driving and parking, incident reporting and  
19 driver qualifications; and also sets requirements for  
20 marketing and labeling packages and the placarding of  
21 vehicles.

22           The NRC establishes shipping container  
23 requirements. We've heard something about what the NRC does  
24 here today. Certifies cask designs; sets safeguard  
25 requirements for sabotage prevention; and also requires pre-

1 notification to states when spent fuel shipments are on the  
2 road; and also approves routes for spent fuel shipments.

3           Under the NWPA, the DOE has these duties. Taking  
4 title to the fuel at the reactor; providing casks for  
5 transport; arranging for the shipments to occur; managing the  
6 transportation contractors; assisting state and local  
7 governments in responding to transportation emergencies; and  
8 providing technical and financial assistance to states and  
9 Indian tribes for emergency response training under Section  
10 180(c) of the Nuclear Waste Policy Act.

11           A couple other requirements I wanted to mention.  
12 Place of origin inspections are required for all highway  
13 route controlled quantities of radioactive material by state  
14 or federal officers. That's required. And spent fuel, of  
15 course, is an HRCQ. And, in addition, the USDOT specifies  
16 routing standards by which states undertake a routing  
17 exercise, and comes up with preferred routes.

18           DOE is required to comply with all DOT and NRC  
19 transportation regulations, and as stated, they will comply  
20 with all applicable state requirements not preempted by  
21 federal law. And this is something that we do take  
22 seriously, and hope that DOE continues to hold that view.

23           What do state and local governments do in this  
24 area? Federal law and regulations dominate the field, but  
25 here's some of the things states do. They issue safety

1 permits and registration credentials. They enact traffic  
2 restrictions that apply to all traffic. They do designate  
3 preferred routes. They inspect vehicles, drivers and cargo.  
4 They adopt and enforce federal and/or consistent  
5 requirements. They impose reasonable transit fees to finance  
6 enforcement and emergency response preparedness. There are  
7 notification requirements when spent fuel comes through.  
8 And, of course, they enforce general traffic safety  
9 regulations.

10           Beginning with some of the state concerns, a key  
11 concern is that there's going to be insufficient funding to  
12 provide adequate emergency response, planning, incident  
13 response, and accident prevention for the expected increase  
14 in future radioactive waste shipments. Another concern that  
15 the states have generally is the federal preemption of state  
16 requirements and funding sources would interfere with the  
17 ability of the states to do what they feel necessary to  
18 protect public health and safety, and what's required under  
19 state constitutions.

20           One example here is there is, in federal law, the  
21 requirement that the federal government have a transportation  
22 safety permit for four types of HAZMAT, including spent fuel,  
23 and that's under the Federal Motor Carrier Safety  
24 Administration's auspices. To date, that requirement has not  
25 been fulfilled, which is fine with us, because the states

1 already have a fairly extensive system of transportation  
2 permits. There's talk now that that permit is going to come  
3 into force with some of the new security concerns. So, we're  
4 concerned about whether or not the FMCSA will say, well, your  
5 state permits are not going to be applicable now. We're  
6 going to enact this federal permit for these, and it's for  
7 four types of HAZMAT, controlled quantities, some of the  
8 poisons, some of the explosives, and there's one other one I  
9 can't remember. Anyway, that's a specific example, and  
10 that's an overall concern of the states.

11           Another one is unfunded federal mandates. Where  
12 the federal government creates a burden, there's a concern  
13 that the state would pick up the tab, state and local  
14 governments. So, in the case of DOE shipments, the states  
15 are pleased of course that Section 180(c), which does require  
16 the DOE to provide funding, but there's concern about a  
17 variety of activities that the states will have to conduct if  
18 these shipments come down the pike in the quantities that  
19 we're talking about.

20           The second point on this slide is insufficient  
21 ongoing consultation. And this does stem from DOE's decision  
22 to really drop a lot of the consultation in 1996 when the  
23 focus was put on looking at the Yucca Mountain, the  
24 repository in particular, not putting so much emphasis on  
25 transportation. So, we felt sort of an information--a lack

1 of an ongoing consultation mechanism there. The TEC has  
2 continued to meet, but it's gone to two meetings a year,  
3 where previously it was more than that. I think it was up to  
4 three at one point. We're hopeful and looking forward to  
5 DOE's coming back a more substantial consultation role in the  
6 future.

7           Of course security concerns are on the forefront.  
8 States want to minimize the risk that travelling spent fuel  
9 casks could become targets for potential terrorist attacks.

10           I wanted to mention before we move to the next  
11 slide a couple of items that have been brought up that I  
12 didn't put on these slides, but I will before I make the next  
13 presentation. Full-scale testing of casks, NCSL is on record  
14 of supporting that as a way to increase public confidence, as  
15 Steve Kraft mentioned in his remarks. So, that's one item  
16 that has been a concern.

17           Another one is dedicated trains. NCSL also, by  
18 vote of the states, believes that rail is the safer approach,  
19 and that dedicated trains would in fact give an extra measure  
20 of safety. So, we're on the record on both of those things  
21 and I wanted to mention they're not on the slide here.

22           As to routing, there's some specific concerns. The  
23 need to know routes. States in general want to know routes  
24 earlier to begin necessary preparations. Secondly, the  
25 states believe DOE should play a more central role in route



1 selection. And, actually, to that end, there was a TEC  
2 document a few years ago on routing that we thought was very  
3 constructive that talked about a process that DOE would use  
4 in the routing process.

5           Obviously, the DOT regulations set the parameters,  
6 but there's a fair amount of I guess other activity that can  
7 take place to work with localities and states in finding the  
8 right routes.

9           And then the third point there is the need to  
10 minimize potential routes so that resources can be focused on  
11 a smaller area, so the resources can be used more  
12 effectively. And some of the discussion earlier was the  
13 balance now between security and information, open  
14 information, and if everyone knows that this is the only  
15 route where a spent fuel cask can go, that's potentially  
16 information a terrorist might use. So, in general, though,  
17 this stands that the number of routes ought to be minimized.

18           And I wanted to bring up the routing paradox, as  
19 I've called it. Routing decisions often present a paradox  
20 for public safety officials. Routes that minimize  
21 radiological risk are usually through sparsely populated  
22 areas, where few might be injured during a transportation  
23 accident, but where emergency response might be more  
24 difficult and inadequate, perhaps. The well equipped  
25 emergency response teams are generally in urban areas,

1 populated areas, where you would have a quicker response, but  
2 you would also have a greater impact on the population for  
3 some kind of an incident. So, it is something of a paradox  
4 that state officials have to look at in conducting routing  
5 exercises.

6           As far as state legislation, the states have been  
7 active in this area for a number of years, and I've counted  
8 up some 500 laws that relate in some fashion to radioactive  
9 materials transportation. And this is just a listing here of  
10 some of the more popular, I guess, or some of the areas where  
11 states have been active. Transportation, permits, incident  
12 notification, routine, inspection and enforcement, rail  
13 regulation, and insurance and liability. And these are some  
14 of the numbers of states that have addressed these through  
15 legislation, just to give you a sense of where the states are  
16 on some of these topics.

17           I want to focus a few remarks on permits, because  
18 in looking at these issues and dealing with the states, the  
19 transportation permit, the safety permit, is I think a key  
20 tool for ensuring transportation safety. The permits  
21 generally involve an evaluation of a motor carrier's ability  
22 to operate safely, and includes an examination of past  
23 history, past safety compliance, financial responsibility,  
24 inspection record, and a variety of compliance factors. So,  
25 it is, I think, an important tool for states to use in this

1 regard in terms of ensuring safety.

2           These next three slides I've just kind of listed  
3 the state and the agency that does it in each state, and I'll  
4 quickly go through these. As you can see, there's 27 states  
5 total, and I guess at issue here is that it's--at the bottom  
6 there, you can see that there's 27 total. In six states, the  
7 Public Utility Commission does it. In seven, it's the  
8 Department of Transportation. In two, it's the Emergency  
9 Management Agency. In five, it's the EPA, Department of  
10 Health, Department of Revenue, State Highway Patrol. So,  
11 it's somewhat of a mixed bag as far as how a state approaches  
12 its own individual transportation permit.

13           And to that end, I think there's been--well,  
14 there's been some--we've heard from industry that there's  
15 confusion. I get a lot of calls because I've compiled some  
16 of these lists, and they want to know which states have what,  
17 and what agency does it. And I think we've been helpful in  
18 that regard. But I do think it could also be easier, and I'm  
19 going to talk about a uniformity initiative here in a minute.

20           To give you a sense of what a permit might require,  
21 here's what Oregon requires. It's I would call it one of the  
22 more stringent permits. They want to know a lot of  
23 information about what's going to go on with the permit,  
24 what's going to go on with the shipment. And these are some  
25 of the many things they ask for. They want to know routes,

1 the estimated radioactivity. They want to know the safety  
2 record as far as past violations, proof of insurance, proof  
3 of Federal Motor Carrier Safety Administration's satisfactory  
4 rating as a carrier, and a variety of things. They pre-  
5 inspect the vehicle, and so forth.

6 I put this up to show you that these are some of  
7 the steps states have taken, and I think many states believe  
8 these are effective measures to ensuring transportation  
9 safety.

10 Here's a list of just a couple other things related  
11 to radioactive and spent fuel shipments. Alabama requires a  
12 55 mile an hour speed limit for placarded HAZMAT. Colorado  
13 has a number of requirement. Port of entry inspections are  
14 required. Illinois inspects and escorts all high-level waste  
15 shipments. And you can see the rest there. These are the  
16 areas where states have some ability to take additional steps  
17 in addition to anything the federal government has required.

18 I want to talk just briefly about fees. I'm not  
19 going to go through all these numbers. But the states do  
20 assess fees to support the activities related to  
21 transportation as far as emergency response, emergency  
22 planning and accident prevention, the various things they do,  
23 inspections, and so forth. And these are some of the fees  
24 that apply specifically to spent fuel, high-level waste, and  
25 highway route control quantities.

1           Also, there's a few that say LLW up there for low-  
2 level waste. I've included those as well. But this is to  
3 give you a sense of quite a bit of variation. Illinois has,  
4 and a couple, Mississippi, have a pretty high fee, \$2,500 per  
5 cask on a truck. Others, you know, it's a much more modest  
6 fee of \$25 per trip.

7           This is basically to say states have done what they  
8 feel like they should do as far as collecting fees. And a  
9 number of the states have enacted the \$1,000 fee per  
10 shipment, has become I guess not a standard, but it's been a  
11 new target. Some of the newer legislation we've seen is the  
12 \$1,000 fee. I'm thinking of Indiana a couple years ago. In  
13 any case, these fees are used to generate funds for the  
14 state, and you've probably heard your state and every other  
15 state, except Wyoming, actually Wyoming is the only state  
16 that really doesn't have any financial problems. I'm not  
17 sure why. I guess they don't provide any services. I hope  
18 no one is from Wyoming here. I live in Colorado, our  
19 friendly neighbor to the north there.

20           But because of all the budgetary problems, states  
21 are looking for every dollar, and so a lot of these funds are  
22 being scrutinized for other uses. But I should note under  
23 the Hazardous Material Transportation Act, fees and monies  
24 collected for HAZMAT purpose need to be used for a HAZMAT  
25 purpose. You can't use the money for others, and industry is

1 very diligent in looking after the states and asking for an  
2 opinion from USDOT if that's not the case.

3           I mentioned kind of the myriad of permits that are  
4 out there. There is an effort underway for permit  
5 uniformity. It was under Hazardous Materials Transportation  
6 Uniform Safety Act of 1990 created a working group, and that  
7 working group was asked to create uniform forms and  
8 procedures for state and local governments that permit and  
9 register motor carriers of HAZMAT. And they've done their  
10 work. They submitted two reports to the Secretary of  
11 Transportation in '93 and '96. And I'm going to talk just  
12 briefly about what some of the elements are.

13           It covers all HAZMAT, including radioactive  
14 materials, that require a placard, and it does include  
15 manifested hazardous waste. States don't have to adopt this  
16 program if they haven't already adopted a program. At this  
17 point, they don't have to adopt it at all. But at some  
18 point, the Federal Motor Carrier Safety Administration will  
19 issue regulations to require this.

20           Basically, it's a base state program where a  
21 carrier would be issued credentials that are valid in all the  
22 states that participate in the program, and that base state  
23 would collect and distribute fees, and would do all the  
24 assessing of the carrier. Then that carrier could operate in  
25 all those states.

1           Uniform forms and procedures are used. It's a  
2 reciprocal system. But the states keep their right to do  
3 their individual enforcement. There's an accreditation  
4 process and peer review to make sure that the states are all  
5 doing it the same way. And a carrier would have to meet the  
6 requirements of the state with the most stringent program.  
7 There's three levels, which I won't get into today.

8           The status is that seven states are members of  
9 what's called the Uniform HAZMAT Alliance, Illinois,  
10 Michigan, Minnesota, Ohio, Oklahoma, Nevada and West  
11 Virginia. And the Federal Motor Carrier Safety  
12 Administration is currently looking at whether they want to  
13 issue regulations to make it a standard for other states.

14           As NCSL, generally we're not in favor of federal  
15 mandates, but this is a program where many states came  
16 together and said this is--it's a compilation of best  
17 practices. So, we feel like it's something where we can get  
18 additional safety enhancements through a uniform approach,  
19 more compliance on the part of industry.

20           The benefits are that there's a focus on safety  
21 fitness. The states perform background reviews of motor  
22 carrier safety records. There's a uniform approach to fees  
23 and applications. There's a convenience factor certainly for  
24 the carriers. It's a streamlined process.

25           For states, the regulatory burden is spread out.

1 If each state isn't doing their own permit, if you have a  
2 base state doing it for several states, those other states  
3 don't have to do it, except for the carriers in their states.  
4 Basically, you do it for the carriers that are domiciled in  
5 your state. And there's also some potential security  
6 improvements that we're looking at in the new environment  
7 here.

8           I won't spend any time on this, but basically the  
9 states continue to pass legislation. Here's a few bills that  
10 are pending this year. Illinois is looking at raising its  
11 fee. New Jersey is going to try to establish a 55 speed  
12 limit for HAZMAT trucks. Virginia passed a study last year,  
13 they're going to do a study of transportation of nuclear  
14 waste, and they're also looking at implementing some of the  
15 USA Patriot Act language, which requires background checks  
16 for HAZMAT drivers.

17           Okay, some of the pieces, the WGA Transportation  
18 Safety Program for WIPP, we've heard mention of that, and  
19 here's some of the specifics of it. It requires, under an  
20 agreement between WGA and DOE, highly qualified and specially  
21 trained drivers. There's rigorous independent inspections of  
22 vehicles. It's under the Commercial Vehicle Safety  
23 Alliance's Enhanced Radioactive Materials Standard. There's  
24 careful monitoring of road and weather conditions, and travel  
25 is restricted when warranted. There's an identification of



1 safe parking places along routes, provision of advance notice  
2 of shipments to states and monitoring enroute through a  
3 tracking system. And medical emergency preparedness has been  
4 established along the way.

5           Mutual aid agreements have been set up between  
6 states and between jurisdictions to ensure swift response.  
7 Emergency response plans have been set up along the way.  
8 Equipment has been an issue and adequate equipment has been  
9 purchased and maintained along the route, and periodic  
10 training and exercises for emergency responders is part of  
11 this plan. So, when you hear talk of the WGA model for WIPP,  
12 these are some of the elements of it.

13           We heard what Bob Loux had to say about how it's  
14 going forward. I think certainly as initially put together,  
15 it was a very positive thing for both the states, and I think  
16 DOE.

17           Some of the challenges for the states is ensuring  
18 an effective system to safely handle an anticipated increase  
19 in radioactive material shipments. Certainly there's a need  
20 for better inter-governmental coordination of emergency  
21 response to accidents.

22           I think that if more states designated routes, it  
23 would improve the safety of radioactive and HAZMAT shipments.  
24 Only ten states have designated alternative routes now. So,  
25 that means if it goes through a state that hasn't designated

1 its interstate highways and interstate bypasses, those states  
2 that have chosen to do their own routes, it's somewhat of a  
3 painful and drawn out process, but that gives the state a  
4 little more, I think, control over where those shipments are  
5 going to go.

6           In Colorado, for instance, the State Patrol doesn't  
7 want it going through the Eisenhower Tunnel, which is a one  
8 and a half mile underground tunnel that connects the ski  
9 areas to Denver. So, right now, HAZMAT has to go up over the  
10 pass, which is not all that--it's not a great alternative.  
11 Actually, the State officials in Colorado would rather see it  
12 go through Wyoming. Sorry, Wyoming. Interstate 80 instead  
13 of I-70. But, those are things the states work out together.

14           The states I think would like a more influential  
15 role in rail safety, although a lot of that is preempted by  
16 the Federal Rail Safety Act.

17           And, finally, I've talked a little bit about  
18 funding, and the states certainly want to maintain their  
19 ability to have fees and to raise money as they need to to  
20 support public health and safety.

21           Okay, when I talk to state legislators, I do go  
22 through some guidance and some ideas in terms of evaluating  
23 whether what they're doing is effective or not. And these  
24 are some of the steps quickly. Determine if your state has a  
25 disproportionately high occurrence of HAZMAT incidents,

1 including radioactive, and if these incidents are trending  
2 higher over the years. If they are, then you need to figure  
3 out why. The Research and Special Programs Administration of  
4 the USDOT is a resource for that.

5           Assess any developments that may increase shipments  
6 down the road, obviously, Yucca Mountain, potential shipments  
7 to Yucca Mountain and foreign fuel shipments, other  
8 radioactive shipments.

9           There's a methodology for doing a HAZMAT Commodity  
10 Flow Study to determine how much and what is going through  
11 your area. So, that's something I recommend that states do,  
12 and a number of states have done that.

13           Determine whether your state emergency preparedness  
14 is adequate for a radioactive materials transportation  
15 incident or accident, and define what resources might be  
16 needed for improvement. Work closely with the regulated  
17 industry and citizen safety groups to reach agreement on  
18 reasonable approaches. Industry, of course, seeks to protect  
19 public health and safety by avoiding accidents. We've heard  
20 that obviously the rail industry, the nuclear industry, don't  
21 want to have accidents, and so they're a positive influence  
22 in working on these issues.

23           In terms of preemption, have a sense of what might  
24 be preempted, but also don't be afraid to look at unique  
25 conditions and push the envelope, I guess, in places where

1 it's not clear whether a federal requirement would preempt a  
2 new state requirement.

3           And, finally, what I urge legislators to do is to  
4 fully fund enforcement activities that promote HAZMAT and  
5 radioactive materials transportation safety.

6           And that's it. If you have any questions, I'll be  
7 happy to visit with you.

8           ABKOWITZ: Thank you, Jim. In terms of the relationship  
9 between different states on this matter, have you had any  
10 discussions with Wyoming that have been productive?

11          REED: I do kid Wyoming.

12          ABKOWITZ: I was just teasing. This is Abkowitz, Board.  
13 Let me ask a couple questions, and then I'll hand it off to  
14 my colleagues.

15                I'm getting the impression, after listening to the  
16 presentations this afternoon, that there's consensus, if not  
17 unanimity, amongst the stakeholders that they would rather  
18 know about mode and route decisions sooner rather than later.  
19 It's almost reached a point where it's if you really want us  
20 to put together a system that we can have some confidence in,  
21 let us know what it's all about so we can start to focus  
22 where we need to focus. Is that a reasonable assessment from  
23 your perspective?

24          REED: Yes, it is. Yes, the states have wanted that for  
25 some time. Give us some early indication so we can start

1 preparing, counter-balanced of course by the issue that we  
2 don't know when, you know, we don't know when these shipments  
3 are going to start. You know, it's a long ways down the  
4 road, so you don't want to use up resources now. But the  
5 sooner we know, the better, and I think we're going to keep  
6 putting that pressure on DOE.

7       ABKOWITZ: Okay, thank you. The second question I  
8 wanted to ask you is Bob Loux mentioned that the WIPP  
9 experience from his vantage point has been predominantly  
10 positive, but he kind of constrained that observation based  
11 on over time, there seems to be perhaps some diminishing  
12 commitment. Is that an accurate assessment of what some of  
13 the other states have been concluding as well?

14       REED: I can't address that specifically, because I  
15 haven't really talked to some of the state officials in the  
16 last few years about that. So, that was new information for  
17 me as well. I'm going to talk to some of our folks in New  
18 Mexico and other states. I really haven't had that  
19 conversation.

20       ABKOWITZ: So, it's not something that's been coming to  
21 you in the form of active feedback?

22       REED: I have not heard that in terms of active  
23 feedback. Again, though, because of some of the diminishment  
24 in our cooperative agreement funding, we really haven't had a  
25 chance to get together our group for a while here. So, I'm

1 not sure.

2 ABKOWITZ: Okay. And then one final question. Could  
3 you articulate perhaps in a little bit more detail the  
4 challenges of properly preparing the emergency response  
5 community along transport routes, and, you know, whether you  
6 have a recommended strategy for how these various states can  
7 come up with kind of a consistent, uniform way of ensuring  
8 that should an incident take place somewhere along the route,  
9 that there is adequate coverage within proximity?

10 REED: Today, I'm not prepared to speak specifically to  
11 that. The TEC Group has actually spent a fair amount of time  
12 talking about that, and they did have a subcommittee I think  
13 looking at that. I was not involved in that myself.

14 I guess part of my thought from a state legislative  
15 point of view is that the legislators tend to give broad  
16 guidance and then let the emergency management folks figure  
17 out what they need to do. So, I personally haven't paid a  
18 lot of specific attention to that, but I think it's an  
19 excellent question and I'd be happy to look into it a little  
20 more. But, today, I don't have anything specific to say on  
21 that.

22 ABKOWITZ: Okay, thank you. Dan?

23 BULLEN: Bullen, Board.

24 Just a quick question about the state fees for  
25 permits for the transport of waste. And I guess it's sort of

1 a paradoxical question, because if the DOE is going to pay  
2 fees for emergency responders through 180(c) of the Nuclear  
3 Waste Policy Act, and then be charged a fee to actually  
4 train emergency responders, aren't they being, or is that  
5 like double taxation, or did I miss something there?

6 REED: You heard about the state budget problem?

7 BULLEN: Well, I understand the state budget problem.  
8 But if the money has to be spent to train emergency  
9 responders for the shipment, does DOE get charged twice, is  
10 the question?

11 REED: It's a great question. And, actually, it has  
12 come up at TEC, and there was a working group looking at this  
13 very issue. Does DOE reduce a state's 180(c) funding based  
14 on what it's collecting with this other hand? And I don't  
15 think the question has been resolved, well, from a state  
16 point of view.

17 BULLEN: Any money is good money.

18 REED: It would be nice to have both. Actually, I mean,  
19 it's the carrier that's going to be paying the fee to the  
20 states.

21 BULLEN: Right.

22 REED: And then they will bill DOE.

23 BULLEN: Bullen, Board.

24 But the carrier will be DOE, as I understand,  
25 unless it's all privatized. I guess the question also, I'm

1 looking at my state, which is Iowa, and I'm happy that we  
2 shipped our fuel before they enacted these laws, because we  
3 didn't have \$1,750. And the other irony, all of these fees  
4 can actually be requested for waiver, and we did that when we  
5 shipped to Savannah River. The only state that didn't waive,  
6 if you want to pick on a state, is our neighboring state to  
7 the east, Illinois. They made us pay. So, just for the  
8 record there, you can actually get them waived if you're like  
9 an educational institution.

10           But the final question that I have, and this sort  
11 of relates to the emergency response training and  
12 preparedness, is it your general consensus from the states  
13 that are involved that there's a deep concern about the  
14 ability to respond, or do you think that they're just waiting  
15 for the right time, as Steve Kraft mentioned, you know, three  
16 years before you start training the volunteer fire  
17 departments and their emergency responders, because you don't  
18 want to have it done too soon and have that training be, you  
19 know, obsolete? What's your consensus or opinion or feeling  
20 that you get sort of, you know, nationwide, I guess?

21           REED: You know, it's hard to, unless we get a vote at  
22 one of our meetings, it's hard to often speak for a consensus  
23 of state legislators. They're, of course, people that do  
24 something else. Only ten states have full-time legislators.  
25 The other 40 states are citizen legislators, so they're



1 doing something else. And trying to say what the opinion of  
2 state legislators is, it's a dangerous thing, unless we've  
3 had a vote on it.

4           But I get two senses talking to folks. One sense  
5 is that given what I told you about the permits, and that  
6 generates some funding, that gives us some idea that these  
7 carriers are safe, there is some opinion that we're going to  
8 be fine, that these shipments are going to be run safely,  
9 we've got an adequate infrastructure in place. Yes, we do  
10 need some additional funding to beef up some of our emergency  
11 response, but we've got a basic system in place that's going  
12 to work.

13           But another vein, and I can't really categorize the  
14 strength of those, is no, I mean, we're in trouble, if we  
15 have all these new shipments, we're going to be overrun, and  
16 we definitely need a lot of help. So, there's really a  
17 couple points of view on that.

18           There was a study that was very useful that NRC did  
19 in 1990 on emergency response capabilities, and unfortunately  
20 they haven't updated it since then. But I found it very  
21 useful in 1990. And it turned out about a quarter of the  
22 states are in really good shape. About half are so so, and  
23 another quarter are in pretty desperate straits. So, I guess  
24 that's why I kind of give the two-handed answer.

25           BULLEN: Thank you.

1 ABKOWITZ: Thank you, Dan. Priscilla?

2 NELSON: I may be having my National Science Foundation  
3 hat on, and it does seem out of it a little bit. Nelson,  
4 Board. I mean, it seems to me that if we look on into the  
5 future, we're looking not incrementally into tomorrow, but a  
6 lot of shipments taking place a lot in the future, and ciber  
7 infrastructure and communication and all of the aspects of  
8 information exchange are just going to become even more  
9 important. State boundaries are just going to be major  
10 continuing problems.

11 So, I'm wondering to what extent in developing an  
12 integrated nationwide kind of, without barrier, security  
13 aspect, is your organization geared in that direction,  
14 looking there so that they're actually seeing a way of maybe  
15 voluntarily having some information exchange, communication  
16 systems, agreements so that we actually have a seamless  
17 approach to this rather than heavily seamed, the way it seems  
18 now?

19 REED: That's a great question. A couple things. One  
20 is as an organization, yes, we're really looking ahead and  
21 working towards that. An example of what we've done recently  
22 in a different field is you know about the internet sales not  
23 being subject to state tax, state sales tax, except on a  
24 voluntary basis. Well, there's an agreement now that most of  
25 the states came to with, and including some of the big

1 concrete and mortar retailers, like WalMart, to set up a  
2 third party that would, you'd click a button on your internet  
3 and go there, and it would calculate your tax. So, the issue  
4 is states are losing money. They need to capture this. I  
5 guess that's the theme here.

6           So, I guess in terms of a seamless system using  
7 technology, there's an example. I think the permit  
8 uniformity thing I talked about is a key example. Once we  
9 move a little further long, I mean, there are a number of  
10 organizations, both public and private, looking at  
11 notification systems that are automatic. So, if a truck goes  
12 off the road, you know, it's automatically sent back to the  
13 control center, and someone responds immediately. The driver  
14 doesn't have to be conscious and make a phone call. There's  
15 lots of things like that that are becoming more seamless.

16           I think the idea of uniformity gets to your point,  
17 because, you know, why stop a truck at every state line. If  
18 it's already been credentialed in Colorado, let it go on  
19 through to, you know, Iowa, or wherever it's going, without  
20 stopping at every state border and requiring new credentials.  
21 I think that's what that uniformity effort is about, in  
22 part. And I think taking advantage of a lot of the  
23 electronic and internet and computer capabilities going  
24 forward is one of the things that a lot in the industry and  
25 the states are looking at.

1           NELSON: Just a followup. I believe that as soon as  
2 Homeland Security figures some things out, that that will be  
3 coming out, this seamlessness of information, and it can  
4 change the playing field for many of the things you've been  
5 talking about today very quickly.

6           REED: I agree. And I think, you know, in some ways  
7 state boundaries, boundaries of any kind, political  
8 boundaries, are becoming old fashioned. I mean, as a state  
9 organization, it's something of a paradox. I mean, every  
10 state has its issues and its jurisdiction and its identity as  
11 a state, and that's not going to go away. So, we need to  
12 figure out how to work around that and get beyond some of the  
13 artificial reasons that block progress between states.

14                   But, who knows, I mean, you know, our federal  
15 system has survived all these years, but, you know, changes  
16 are perhaps coming. You see a lot of local governments  
17 consolidating, for instance. You know, Miami/Dade County,  
18 they're coming together seeing the overlap. I don't know if  
19 states are going to do that or not. I mean, Texas and its  
20 constitution could divide into five states, so it would be  
21 going the opposite direction. But there's been talk of  
22 folding North and South Dakota in together and calling it  
23 Dakota. Anyway, I think it's a point well taken.

24           ABKOWITZ: Okay. Has there been any talk of Wyoming  
25 becoming part of Colorado?

1 REED: Wyoming is a beautiful state. Let me defer to  
2 Bob Luna.

3 LUNA: Bob Luna, consultant to the Board.

4 I wanted to--this has been covered at least twice,  
5 but I wanted to ask Jim if he has a route to or some  
6 understanding of what the definition of an adequate emergency  
7 planning system would look like? I mean, you've mentioned an  
8 adequate emergency response system three or four times, but  
9 there's not much definition associated with what an adequate  
10 system looks like. And I know you talked about TEC having  
11 looked at it once, and I've seen some of those discussions.  
12 But I don't think they went very far. But it seems to me if  
13 DOE is going to fund an adequate system, some kind of  
14 definition might be in the works that makes sense that people  
15 can agree with.

16 REED: I do agree with you on that, and I'm going to  
17 work on that. I didn't come prepared today with that.

18 LUNA: The other question I wanted to ask was what in  
19 your mind constitutes a full-scale testing program that makes  
20 sense?

21 REED: Okay, well, essentially that--I mean, as it  
22 stands now, you have quarter and half scale tests and  
23 computer simulations. I think the idea of a full-scale test  
24 would be for new designs. I don't think there's any talk of  
25 going back and having old designs re-certified. Although,

1 you know, we haven't really had this discussion in our group  
2 about some of the specifics.

3 LUNA: Well, let me rephrase the question.

4 REED: Okay.

5 LUNA: There is one group that I've heard from which  
6 wants to have a full-scale test to the conditions that the  
7 NRC certifies casks to, that is, 30 foot drop, 30 minute  
8 fire, one yard drop onto a pin, and emersion as the four  
9 principals. And there is another group that wants to have a  
10 set of tests which are extra-regulatory and more realistic to  
11 try and understand the overall how close you are to perhaps  
12 the failure threshold. Where do you think the NCSL is on  
13 some issues like that?

14 REED: Okay. When we originally passed this resolution,  
15 it was back in the early Nineties, the assumption then was  
16 that it would be the existing NRC tests, that the full-scale  
17 test would be those tests, and it wouldn't be--I think some  
18 of the talk of extra-regulatory is a newer development since  
19 we passed our policy a number of years ago. And we really  
20 haven't addressed that specific part. But it would be the  
21 existing NRC tests.

22 ABKOWITZ: Okay, thank you, Bob. And thank you, Jim.

23 We're going to take our final recess for the day,  
24 and we will reconvene back here in ten minutes. I'd also  
25 like to ask the individuals that will be part of the local

1 government panel if they could show up here next to the  
2 podium about five minutes from now so we can get organized  
3 for the panel session, I'd appreciate it. Thank you.

4 (Whereupon, a brief recess was taken.)

5 ABKOWITZ: We're entering the last segment of our agenda  
6 for today, and the venue is going to change a bit from the  
7 way we've been conducting things up until now. We're going  
8 to hear from a variety of different local governments from  
9 the State of Nevada, and it's going to be kind of conducted  
10 in a formal presentation, followed by panel Q and A type of  
11 format, and then following that is when we will invite public  
12 comments from individuals wishing to offer their comments on  
13 the record.

14 The views of local governments activity is going to  
15 actually include representation from five different counties.  
16 On our program today, we have Les Bradshaw from Nye County,  
17 Englebrecht von Tiesenhausen from Clark County. Pinch  
18 hitting for Kevin Phillips will be Paul Seidler representing  
19 Lincoln County. We have Abby Johnson from Eureka County, and  
20 George McCorkell representing Esmeralda County.

21 I'm going to give you a brief background on each of  
22 these individuals, and then I'm going to turn the program  
23 over to Les Bradshaw, who has apparently agreed to coordinate  
24 amongst the culprits here in terms of who speaks when and for  
25 how long.

1           Les was appointed Manager of the Nye County  
2 Department of Natural Resources and Federal Facilities by the  
3 Nye County Board of Commissioners in 1998. His primary  
4 duties are to manage the County's interests related to public  
5 lands, federal facilities, and natural resources issues.

6           Mr. Bradshaw has an undergraduate degree in geology  
7 from Arizona State University, and a Juris Doctorate degree  
8 from the Nevada School of Law. And as I mentioned before,  
9 Mr. Bradshaw and the other speakers will summarize their  
10 concerns about transportation issues related to Yucca  
11 Mountain.

12           As I understand it, Les will actually try to talk  
13 about issues of commonality amongst the counties, then talk  
14 about Nye County's issues, and then each of the other  
15 counties will talk about situations unique to them.

16           Englebrecht von Tiesenhausen has been with Clark  
17 County since 1990 where he is the primary technical  
18 specialist for Clark County's oversight of the Yucca Mountain  
19 repository program. Mr. von Tiesenhausen is responsible for  
20 the analysis and evaluation of technical and geological  
21 issues, and their programmatic and policy-related impacts to  
22 the County.

23           He has a Bachelor of Applied Science degree in  
24 metallurgical engineering from the University of British  
25 Columbia, and a Master's of Business Administration degree



1 from Pepperdine University. And as I mentioned before, he  
2 will be representing Clark County.

3           Pinch hitting for Kevin Phillips is Paul Seidler.  
4 Paul has a Master's in Public Policy from the University of  
5 Chicago, and has a 20 year career in the nuclear waste  
6 business. That began with a stint with the Illinois  
7 Department of Nuclear Safety, and has continued with his own  
8 firm today. And Paul is representing Lincoln County today as  
9 a consultant to the County on Yucca Mountain issues.

10           Abby Johnson has worked on nuclear issues for two  
11 decades. She's a graduate of Kirkland College in Clinton,  
12 New York, with a major in government and philosophy. She  
13 first became involved in nuclear waste when testifying at DOE  
14 repository guideline hearings in 1983, and has tracked the  
15 high-level nuclear waste repository issue ever since. And as  
16 I mentioned before, she will be talking about issues unique  
17 to Eureka County, and will also try to represent how those  
18 relate to the northern tier counties in general that lie to  
19 the north of the Yucca Mountain site.

20           And then, finally, we have George McCorkell, who is  
21 representing Esmeralda County. He is also an employee of  
22 Robinson-Seidler. He began his career as the Yucca Mountain  
23 oversight director--I'm sorry--he's in the capacity of the  
24 Yucca Mountain oversight director for Esmeralda County, and  
25 he's been in that position for the last three to four years.

1 Prior to that, actually worked on the Yucca Mountain project  
2 for about five years. And George has a B.A. in  
3 Communications from Muhlenberg College.

4 So, that's the background on our speakers. And,  
5 Les, it's your show.

6 BRADSHAW: Thank you very much. I'm very pleased to be  
7 here today, and we appreciate all the hard core people that  
8 stayed to the very end. Traditionally, the room clears out a  
9 bit about this time of the day on these kind of meetings.  
10 But we appreciate you being here, even though some of you  
11 have to stay.

12 Much of what's been said earlier in the day is  
13 direct on point with some of Nye County's perspectives. But  
14 initially, I want to--these are the colleagues that are here.  
15 They've been introduced.

16 I just want to lay out some of the geographic, the  
17 geography of this issue in Nevada. I know in the two days  
18 you've been here, you've probably seen some of these maps,  
19 and I just want to go through it very quickly. The national  
20 picture, the national transportation infrastructure in  
21 Nevada, the linkages of that infrastructure to Yucca  
22 Mountain, and then go over some of the rail and trucking  
23 shipment options that seem to be out there.

24 All these places, the red dots, and I'm sure you  
25 can see that not as well as you should, but the red dots

1 indicate where the material is now. And, of course, Yucca  
2 Mountain out in Western Nevada.

3           This is the national system of interstate highways  
4 in Nevada. The I-80 corridor along the north, and the I-15  
5 corridor along the south, and a number of U.S. highways that  
6 cut across various parts of the state. I-50, U.S. 6, U.S.  
7 95, and U.S. 93 are the principal federal highways that are  
8 not the interstate system in Nevada.

9           From Las Vegas, if you just were flying as a crow  
10 flies, it's a short distance from that transportation  
11 infrastructure out to Yucca Mountain. It's under 100 miles.

12           From Caliente, which is an entry point for the rail  
13 system from the east, or sort of from the northeast, it's, if  
14 you just came straight across, if you could, a short distance  
15 of a little over 100 miles, or so. And there will be some  
16 other people giving you more details on these different  
17 routes.

18           There's routes down from the I-80. You can come  
19 off different places, but the ones that have been sort of  
20 tagged or identified, well, at least the one off of the--  
21 directly north of the Beowawe type area up there, but also  
22 I've put on here, you know, there could be yet a shorter  
23 access point from along the I-80 corridor if the national--  
24 well, if the forces at work, whoever is going to decide this,  
25 and you've heard that story today, whoever does this, and

1 however they do it, there are limited options in Nevada for  
2 getting to Yucca Mountain from the national transportation  
3 infrastructure.

4           And from the south, instead of coming off right at  
5 Las Vegas, some other place along the I-15 corridor which has  
6 both interstate and rail access. By the way, I'm not  
7 suggesting all these are in the EIS. These are just  
8 conceptual shortest distances from the infrastructure to  
9 Yucca Mountain.

10           And the Jean corridor is another one that could be  
11 used. So, along that I-15 corridor, you know, you could buzz  
12 into Yucca Mountain from a number of different places, just  
13 depending on the politics of the issue, because this is less  
14 of a techno type problem than it is a political and a  
15 coordination type problem.

16           This is the Caliente corridor identified in the  
17 EIS. Also note that there's another segment of this corridor  
18 that would cut down through the test site, through the blue  
19 area and the gray area. If that were to happen, if the  
20 forces of nature out there would allow that to happen, that  
21 would cut off some of that route what I call around the horn,  
22 a 300 mile detour, a 320-some mile detour going around if  
23 that were the corridor that were selected.

24           Coming down from the north, that corridor goes  
25 parallel to the main basin and range topography in Nevada and

1 could probably be kept fairly flat, no major mountain ranges  
2 that we'd have to go over or around. You'd just snake down  
3 through the valleys. But that's a long haul, whether it's  
4 upgrading the highway system or building a new rail.

5           And this is not in the EIS, but I mean there is a  
6 short segment that could come off existing rail that comes  
7 down to the Army Ammunition Depot down by Hawthorne, and  
8 zapping on down to Yucca Mountain, new rail construction, but  
9 that's along the Highway 95 corridor, and that could be done  
10 if, you know, the political forces and all the issues having  
11 to do with that corridor were overcome. This did not end up  
12 in the final EIS because there was just a choice made that it  
13 was just too hard, and some other areas would be a little  
14 easier.

15           Well, this is self-explanatory. I mean, a number  
16 of routes could come off of the I-15 corridor.

17           This is the one that if some of it is by truck, and  
18 we've heard that today, that there apparently will be a  
19 mixture of truck and rail, or truck for sure, and maybe rail,  
20 or something like that, it just depends on how all of us work  
21 together over the next decade or so to make a transportation  
22 system happen. But, you'll hear from Clark County's view on  
23 this. They're not excited about this one. And, frankly, in  
24 my remarks on Nye County's perspective, we're going to say  
25 the same thing.

1           This is truck shipments. You know, we saw this  
2 around the horn route, a rail could be built around, or if it  
3 comes mostly by truck, or maybe it's both, you've got a rail  
4 over here and an upgraded highway, and they're sort of  
5 parallel, going around the Nevada Test Site and the Nellis  
6 Range.

7           Then yet another possibility coming down, you know,  
8 from an entry point off of I-80 up on the eastern edge of  
9 Nevada, this one is not in the EIS, but it's, you know, it's  
10 a straight shot down. Between Wendover and Yucca Mountain,  
11 there's probably, as I can recall now, once you get out of  
12 Ely, there's only, let's see, two stop signs, and you can run  
13 one of them because there is nobody out there.

14           And coming up 127 up from Baker, that's not in the  
15 EIS, but certainly is a straight shot off of the I-15  
16 corridor.

17           Okay, the Nye County perspective, I'll just briefly  
18 run through. Nye County believes that it has a unique  
19 position in this national discussion because of its position  
20 as being the end of the track, or the end of the road. Every  
21 single shipment is going to come to Nye County. Every single  
22 shipment is going to come to Nye County, whether it's rail,  
23 truck, carrier pigeon, airplane, whatever it is that is  
24 ultimately decided, we've got to deal with every shipment.

25           And as you can see from the options that I had up

1 on the screen, they're going to come in from every which way,  
2 just depends on what is ultimately decided. And that, as  
3 you've heard from the last two or three speakers, seems to be  
4 an issue that's still up in the air. So, we have a unique  
5 position in that regard, and we believe that we should be  
6 able to be uniquely involved in that decision making.

7           We believe that we ought to view the entire system,  
8 and find a route, mode, method, inspection, safety issues,  
9 all these issues ought to be determined based on best  
10 practices. And I know you heard that term earlier. Best  
11 practices should be figured out and implemented. There  
12 shouldn't be any forced political, you know, over print on a  
13 best practices transportation plan, such that it results in  
14 bizarre or weird outcomes. Because we believe that bizarre  
15 and weird outcomes are going to lead to a less than optimal  
16 system, and a less than the very best system that it could  
17 be.

18           Above all, Nye County is interested in having a  
19 repository that is first class, that works, and works well,  
20 that is an example to the world of how this issue could be  
21 done, and that we can all be proud of. And that's the only  
22 way, having a repository under those conditions is the only  
23 way that the Nye County Board of Commissioners can assure its  
24 residents that DOE is operating this issue in a very safe  
25 manner. We don't think that we ought to have to bear any

1 additional burden because of DOE's, you know, because of this  
2 operation.

3           Okay, if you could go to--yes, let's go to 19.  
4 Let's go to 20, the best practices. And I've kind of covered  
5 that. This whole issue is about transferring risk from 131  
6 sites out to one site. So, we believe that we are willing to  
7 accept that risk if that's what the nation has decided, and  
8 apparently it has. Congress has directed that this issue go  
9 forward. But we believe that in accepting that risk and  
10 being a team player and being part of this national solution  
11 to a national problem, that Nye County ought to be able to be  
12 at the table planning this myriad of issues that goes with  
13 this transportation campaign.

14           We are not really interested in permits in Illinois  
15 or, you know, but those are issues that a string of state  
16 governors back up stream are going to have to deal with. But  
17 we are interested in how the material arrives in Nye County,  
18 how it's packaged, the order in which it comes. When it gets  
19 out to Nye County, we want it to go to its final resting  
20 place and not sit out in the sunshine there for the next two  
21 or three lifetimes. We want the transportation, you know,  
22 the actual rolling stock that's involved in transportation to  
23 be safe, to be inspected.

24           You know, you've heard all the parameters and  
25 conditions that most people--we want nothing less than what



1 you've heard certainly in the talks given by Mr. Loux and Mr.  
2 Reed.

3           And let's go to the last one. We support--I mean,  
4 if someone asks us, well, should it go through Las Vegas  
5 Valley, we, like everyone else in Nevada, knows that the Las  
6 Vegas economy drives the wellbeing of the state as a whole.  
7 So, we're saying, you know, don't mess around with the Las  
8 Vegas Valley. The perception of risk sometimes can get out  
9 of hand. So, we're willing to go along with the, you know,  
10 with some alternate routing system that avoids the Las Vegas  
11 Valley if that's what, you know, the state and the Las Vegas  
12 Valley governments themselves and the other governors that  
13 are going to have to deal with this, if that's what's  
14 decided, we think that, you know, we are--the Pahrump Valley  
15 and Nye County, we're a little side bubble on this huge  
16 bubble that is the Las Vegas Valley gaming economy and the  
17 tourist based economy. We don't want that bubble to burst.  
18 We don't want it to even go down just a little bit. We don't  
19 want even another little blip like what happened on 9/11,  
20 because that had an adverse impact. So, we agree with that.

21           We also are suggesting to the nation at this time  
22 that the people that are planning all this consider, you  
23 know, all the corridors, and perhaps the notion of a single  
24 point of ingress and egress, or that deadends at Yucca  
25 Mountain, is not the best idea. It seems to us that multiple

1 ingress and egress, multiple choices, if there's going to be  
2 trucks and rail, or a mixture of that going on for the next  
3 at least 40 years, that DOE and the people that are  
4 implementing this transportation program ought to have the  
5 widest range of choices that they can have for getting to the  
6 site and out of the site.

7           And, so, the notion of having a single corridor  
8 that comes down to Yucca Mountain and deadends just doesn't  
9 strike us as a good idea for a number of reasons, and not the  
10 least of which is that we're hopeful that a billion dollar  
11 rail construction project might actually be through-going and  
12 go from Point A to Point B, and go through Nye County, and  
13 maybe do us some good besides--now, I'm not saying  
14 transporting waste won't be helpful to us, but maybe we could  
15 develop other commercial projects along that rail.

16           And my last point--well, I said my last point. So,  
17 we think that this issue seems to be early on. There's lots  
18 of chances for relevant entities to be at the table. We hope  
19 to be at the table. My colleagues from the other  
20 jurisdictions that are going to talk today will give you some  
21 detail about specific routings and how they might impact on  
22 their communities, and so on. And bear in mind, we could  
23 have spent an hour here telling you all in excruciating  
24 detail the impacts on the environment, water, wildlife, the  
25 range cattle business, the fencing, you know, the bisected

1 and segmented grazing allotments. I mean, there's a myriad  
2 of issues here that transportation will impact on, and I  
3 think you're aware of most of those and we have most of the  
4 same issues and problems that have been brought forward over  
5 the last hour.

6           And, so, with that, I will conclude my remarks, and  
7 Englebrecht von Tiesenhausen from Clark County will take up  
8 the baton at this point.

9           VON TIESENHAUSEN: Thank you, Les. I'm going to stay  
10 right here.

11           In deference to Dan Bullen, I decided not to have a  
12 hand-out and not to have any slides, so he can ask fewer  
13 questions.

14           BULLEN: Don't bet on it, Englebrecht.

15           VON TIESENHAUSEN: I'd also like to limit my comments to  
16 basically DOE controlled issues, because that was the  
17 instructions we got from our Chairman.

18           A few general comments, talk a little bit about  
19 rail shipments, a little bit about truck, some of the impacts  
20 to Clark County that we're concerned about, also mention some  
21 QA issues and a couple of things about WIPP, and a few  
22 comments about the Baltimore Tunnel fire.

23           As far as truck transportation goes, I will  
24 consider not only issues affecting Clark County, but look at  
25 a couple of selections we did that cover the nation as a

1 whole. Jeff Williams indicated that DOE considers at least  
2 rail to be the preferred option, even though no formal  
3 decision has been made of that. We feel that it is more  
4 difficult and more expensive to construct a rail to Yucca  
5 Mountain than DOE is believing at this point.

6           As early as 1986 in an EA for the repository  
7 candidate sites, DOE states that Yucca Mountain exhibited  
8 three potentially adverse conditions, high construction  
9 costs, difficult terrain and local conditions that could  
10 cause the transportation-related costs, environmental impacts  
11 or risks to public health and safety from waste  
12 transportation operations to be significantly greater than  
13 those projected for other candidate sites.

14           The EIS basically considers, and Jeff Williams  
15 discussed those five options for rail, and I just want to  
16 reiterate I guess some of the points he made, is Caliente,  
17 Chalk Mountain, Jean and Valley.

18           Since the EIS, and continuing today, as far as the  
19 Valley siting, Valley option is concerned, recent land use  
20 changes in Clark County have made it very difficult, if not  
21 impossible, to construct this line. The Jean and Sloan  
22 corridor have the same conflicts as the Valley.

23           This discussion of the Valley Airport Public Land  
24 Transfer Act, which would impact the Jean and the Sloan  
25 Corridors, and the Caliente Chalk Mountain route is not

1 preferred by DOE because of national security issues with the  
2 Air Force, and that basically leaves Caliente and Carlin,  
3 which are the most expensive and while DOE gives construction  
4 costs in the EIS that are less than \$1 billion, I think the  
5 general feeling is that they will exceed \$1 billion.

6           In addition, some of the routes selected would pass  
7 through the Las Vegas Valley and affect the downtown area.  
8 The Jean rail spur or the Sloan Jean Intermodal Transfer  
9 Station would have the largest effects on the downtown Las  
10 Vegas area. This is a major concern to Clark County, and I  
11 will get to some of the impacts that we're worried about  
12 later.

13           Because of the difficulties that we see in  
14 constructing a railroad access, and I'm not mentioning any of  
15 the ones that Les looked at, because we didn't look at those,  
16 we feel the default option is probably going to be truck.  
17 And truck shipments can vary anywhere from 50,000 to I guess  
18 100,000, depending on who you believe.

19           We've looked at some national truck shipment  
20 options, and just to give you some idea of the magnitude of  
21 the issues that are involved, we took the county population  
22 from the year 2000 census, and then we looked at number of  
23 people living within one mile on either side of those truck  
24 routes, and the total number of miles travelled.

25           If you look at the shortest possible routes, you're

1 looking at going through counties with a total population in  
2 excess of 125 million, and going through 706 counties, and  
3 the number of people living within one mile on either side of  
4 the centerline would be around 15 million, and the total  
5 shipment miles is roughly 88 million.

6           Another thing we looked at was consolidate southern  
7 shipping routes which would minimize impacts from weather.  
8 And, again, the population would be 124 million, number of  
9 counties 687, population within the centerline distance, 13  
10 million, and the shipping miles 92 million.

11           If you look at national transportation routes that  
12 would avoid Clark County, you're still looking at a  
13 population of 128 million, 129 almost, 707 counties, 12  
14 million within a mile of the centerline, and total shipment  
15 miles of 97, almost 98 million. These numbers are basically  
16 not that far apart. So there would seem to be no reason from  
17 our perspective not to avoid Clark County.

18           What are the impacts that we're concerned about?  
19 We're concerned about economic impacts, impacts to species,  
20 and air quality impacts. Clark County has issued, and I have  
21 a copy of it, and it's on our website, it's basically an  
22 impact report of what we see happening if truck  
23 transportation became the selected mode.

24           And by asking real estate people, bankers, et  
25 cetera, our consultants have come up with a transportation

1 dependent property value decreases from 2 to 30 per cent,  
2 with losses of up to \$8.7 billion. Accident costs estimated,  
3 and this is without necessarily having radiological releases,  
4 \$70 to \$100 million.

5           Impacts to species, Clark County has achieved and  
6 maintains a federal permit under the Federal Endangered  
7 Species Act, and major construction in the Clark County area  
8 could damage or could impact this permit, and it could impact  
9 other counties as well.

10           Air quality. We have recently come, or have  
11 submitted a plan to be in compliance with EPA's air quality  
12 standards, and the modeling indicates that our compliances,  
13 while there, it's tenuous to say the least. So, we're  
14 certainly concerned about anything that would impact that.

15           I would also like to mention a couple of things  
16 about WIPP which has come up several times. As you know,  
17 there have been two accidents, or you may not know, there  
18 have been two accidents during the WIPP transportation  
19 effort. Total miles travelled so far are about 1.5 million.  
20 The accidents are not notable by what happened, but rather  
21 by how they happened, in my mind.

22           In one case, the driver lost consciousness and the  
23 truck just travelled off into a field. Nothing happened. If  
24 this had been in the mountains, or anywhere near some kind of  
25 other critical infrastructure, the results could have been

1 much different.

2           In the other case, a happy cowboy came in his  
3 pickup truck and hit the rear of the WIPP truck. When they  
4 checked the load, they actually found some contamination on  
5 one of the drums that should not have been there. The truck  
6 was sent back to its destination, I believe, and upon  
7 investigation, they found out that the locking ring on top of  
8 the drum had not been torqued down to specifications. So,  
9 this is Murphy at work as a scientist, I guess.

10           But this indicates that this wasn't really--the  
11 accident was negligible, but there was a failure to follow QA  
12 procedures, and this I think is the important issue.

13           DOE has--Yucca Mountain Program, I should say, at  
14 least has a history of having quality assurance problems, and  
15 while this is outside of the purview of this meeting, it  
16 certainly does affect the way we feel and we think about  
17 transportation related issues.

18           A short comment on the Baltimore Tunnel fire. NRC  
19 did I think a fairly thorough analysis on reconstructing  
20 temperatures and the effects that a fire would have had on a  
21 nuclear waste transportation cask. They picked the High Star  
22 100 to analyze the effects. Their conclusion was there would  
23 have been no releases if this cask had been in the fire. And  
24 I have no problems with that conclusion. I would just like  
25 to point out that the High Star 100, as far as I am aware of,



1 uses a welded can, and if there had been a torqued lid with  
2 less seals, the results might have been slightly different.

3           Another issue with the Baltimore Tunnel fire, I  
4 guess it's the Nuclear Waste News, the January 23rd edition,  
5 they had a little article called The Fear Factor, in talking  
6 about this fire, and they said the most deadly risk from a  
7 spent fuel transportation accident may not be from radiation  
8 releases, but from fear itself.

9           That's the end of my discussion. Thank you.

10          BRADSHAW: Thank's Englebrecht. Paul Seidler for  
11 Lincoln County?

12          SEIDLER: Thanks, Les.

13           I'm here again representing Mayor Phillips. He's  
14 sorry he couldn't be here today. Two of his daughters are in  
15 the State Basketball Championship up north, and so he has a  
16 good excuse for not being able to make it.

17           I'm here as a consultant for Lincoln County. The  
18 Lincoln County program, very briefly, is really driven by  
19 what's called the Joint City/County Impact Alleviation  
20 Committee, a citizens committee that advises the program.  
21 It's been in place since 1984. Lincoln County is one of the  
22 three original affected units of government, along with Nye,  
23 Clark and itself.

24           The Lincoln County program has produced  
25 approximately 70 technical documents over the years, backing

1 up the findings and the various conclusions of the program,  
2 and that culminated recently in the production of an impact  
3 report which we'll get to the Board, which defines Lincoln  
4 County's views and perceptions with regard to impacts from  
5 primarily the transportation of spent nuclear fuel to the  
6 Nevada Test Site, to Yucca Mountain.

7           The position of the County since the beginning,  
8 actually the mission statement of the JCCIAC is to minimize  
9 risk associated with the transportation of spent nuclear fuel  
10 to the repository, to minimize potential impacts, and to  
11 maximize any potential benefits associated with the  
12 repository program. Those essentially have been the guiding  
13 principles of the program since the beginning.

14           In the EIS, there are five railroad routes, and I'm  
15 not going to go into a great deal of detail since this has  
16 already been discussed earlier, five railroad routes to Yucca  
17 Mountain. Two of those are in Las Vegas, and has already  
18 been mentioned, we just don't think those are options. That  
19 leaves two Caliente options, and one option from the north,  
20 and we think that the institutional and the land use  
21 obstacles associated with the northern route will be very  
22 challenging to the Department.

23           So, we sort of have come to the conclusion that  
24 it's quite likely if a railroad route is constructed, that it  
25 will be a route originating in Caliente, although we're

1 doubtful that the route going across the range complex will  
2 be one of those options. In fact, that's a non-preferred  
3 option among the five options that are identified in the EIS.  
4 It's a non-preferred option because of concerns from the Air  
5 Force.

6           Also, there are five intermodal options in the EIS,  
7 and of those five options, three of those originate in  
8 Caliente and two of those originate in Las Vegas. And for  
9 the same reasons expressed earlier, we think the Las Vegas  
10 options are not very likely.

11           Frankly, we think that at least initially, the  
12 likely scenario is intermodal transfer as the way that waste  
13 is going to get to the repository. The reason for that is  
14 that the Department's stated goal, as well as I think a lot  
15 of national interest in maximizing use of the existing rail  
16 infrastructure in the country for transporting waste, it's  
17 safer, it's more popular, we think it's less costly. So, we  
18 think that rail transport to the maximum extent possible will  
19 be the preferred option throughout the country.

20           We don't think a railroad is going to get built by  
21 2010, and I'm not going to go into great detail as to why we  
22 don't think that will happen. But we've analyzed that rather  
23 closely, and given the current DOE schedule, we're pretty  
24 skeptical about that.

25           So, that really, frankly, leaves the intermodal

1 options in Caliente. And for the audience, when we say  
2 intermodal, we just mean simply taking the waste containers  
3 off of railroad cars and placing them on truck cars, whether  
4 they be heavy haul truck or legal weight truck, and  
5 transporting the waste to Yucca Mountain. And we think the  
6 likely route for that will be around the northern side of the  
7 range complex through Lincoln County, Esmeralda County and  
8 Nye County into the Test Site.

9           The goal of our program has always been to be  
10 prepared and to be very much involved in the decision making  
11 process. We think that this is dangerous stuff, but we also  
12 are very aware of what the safety record is. We are aware of  
13 what the regulations are. We're aware of the safeguards as  
14 far as the casks and other aspects of waste transportation.  
15 And we think it can be done safely if it's done right.

16           The key thing to us is really the decision making  
17 process, and getting some decisions made, good decisions  
18 made, and good decisions made in a timely fashion. And after  
19 listening to the discussion this morning, and some of the  
20 discussions laid out today, I started to think, you know what  
21 we need is some really good high tech decision aids. I was  
22 at home and I was going through my kids' stuff, and this is  
23 the one I came up with (holds up a magic 8-ball). I'm just  
24 joking.

25           But, the bottom line is we need to start making

1 some decisions. They're relatively easy policy decisions.  
2 They're not politically easy decisions. They're decisions  
3 that, you know, there's a real tendency, desire to put off  
4 because of political considerations. And the position of  
5 Lincoln County is we just want to know where things are  
6 headed, because we want to know where we stand in this  
7 program, because there has been probably the biggest impact  
8 to date had to do with political cohesion within the  
9 community.

10           There are people who are reading the tea leaves,  
11 maybe using their magic 8-ball, and they've decided that they  
12 think there's a high probability that the stuff is going to  
13 go through the community, and they've, I don't want to use  
14 the word accepted that, but they've decided, well, if that's  
15 going to happen, we're a small community, this is a national  
16 problem, it's a national environmental problem that we're  
17 trying to solve here, let's be reasonable players in this  
18 process and let's, in the meantime, try to do things to  
19 maximize the benefits and the opportunity for the community.

20           Well, that, needless to say, taking that sort of  
21 approach when you're dealing with nuclear waste is  
22 challenging. It's stressful, and causes a considerable  
23 amount of tension in communities. Lincoln County has been  
24 going through that tension and that stress for over a decade,  
25 and they're hopeful that we've reached the point where some

1 decisions are going to be made one way or another so they can  
2 get on with life, whether it's as a transportation corridor  
3 to Yucca Mountain or whether it's not.

4           You know, I'm going to use this thing. Okay?  
5 Because there are some things I think the magic 8-ball could  
6 answer, and in my experience, the magic 8-ball is accurate  
7 100 per cent of the time. I'll start with a really easy one,  
8 and that's one that I've already discussed. Can spent  
9 nuclear fuel and high-level waste be transported safely?  
10 Let's see what the 8-ball says. You can't look because I  
11 might have to change it. Are there models for state and  
12 local programs? Are there models that we could follow that  
13 we could learn from? Yes, definitely. It actually said the  
14 outlook is bright. There are some great models out there.

15           I worked for the Illinois Department of Nuclear  
16 Safety. I was personally involved in shipments of waste,  
17 escorting waste shipments. We had, when I was there, a great  
18 deal of shipments to the G.E. Morris facility. We know it  
19 can be done right and we know it can be done safety. Again,  
20 it's a matter of getting down, making the decisions with  
21 regard to inspection programs and escort programs, all of the  
22 decisions that need to be made that really need to involve  
23 local governments, particularly in Nevada, because we're at  
24 the end of the transportation funnel.

25           The other examples, the Department of Nuclear

1 Safety has extremely progressive programs in Illinois, and  
2 it's one that I encourage people to investigate. It's one of  
3 two cabinet level Departments of Nuclear Safety in the  
4 country. They don't say that they like nuclear waste. They  
5 just recognize the reality that they're at the crossroads of  
6 the country, so they have a lot of this stuff going through.  
7 Half of the electricity in Illinois is generated by nuclear  
8 power. So, the state has taken a very progressive approach  
9 of protecting public health and safety.

10           Those are the sort of programs that we envision in  
11 Nevada to protect public health and safety in recognition of  
12 the realities that we think we're going to face in the  
13 future. WIPP is another good model for transportation.  
14 There's a great deal to learn from the WIPP model.

15           Will the waste go through the Las Vegas Valley?  
16 Okay, my sources say no. Frankly, we don't think it's going  
17 to happen. We've witnessed what's happened with the low-  
18 level waste shipments to the Nevada Test site, for example,  
19 and the political leaders in the State of Nevada have exerted  
20 themselves with the Department of Energy, and the low-level  
21 waste shipments generated, with a few exceptions, just don't  
22 go through the Las Vegas Valley anymore. They go through  
23 rural Nevada. We envision the same thing happening with the  
24 high-level waste shipments.

25           As Les has indicated earlier, the gaming community,

1 for perception reasons alone, will exert a lot of influence  
2 to prevent waste shipments from going through the Las Vegas  
3 Valley, and those are the main reason why we've concluded  
4 that the waste will go through rural Nevada.

5           Will rail be the primary transportation system  
6 outside of Nevada? And the magic 8-ball says, "As I see it,  
7 yes." We think it will be for the reasons I indicated  
8 earlier. Rail infrastructure exists. It doesn't go to all  
9 of the utilities in the country, but it's an existing  
10 infrastructure. It's a safe infrastructure, and from  
11 everything I could gather, the public, to the extent that  
12 it's voiced its position, and certainly the leadership around  
13 the country, has indicated that it would like to maximize the  
14 use of rail transport.

15           I'm not going to even bother using this for the  
16 next question, and that's will the railroad be built in  
17 Nevada by 2010, and we just have come to the conclusion that  
18 we just don't think that will happen. That's seven years  
19 away from now. When you think about the--while the DOE says  
20 that there won't be, and we agree, a need to do anymore EIS  
21 work in terms of identifying a corridor, there will be  
22 additional need for work, there will be additional work  
23 related to public lands that needs to be done. There's a  
24 whole host of issues and a very challenging political  
25 environment.



1           The country hasn't built a railroad of this scale  
2 for a long time, and certainly not in this type of political  
3 environment. The environmental issues that you face today in  
4 trying to accomplish this are much more challenging than in  
5 the past. We're not saying that it won't be built, that it  
6 shouldn't be built. In fact, we prefer rail transport. We  
7 just don't think it's going to be built in time to begin  
8 accepting waste at a repository, and that's why we've come to  
9 the conclusion again that intermodal transportation in  
10 Caliente will end up being the likely least fallback initial  
11 option.

12           I guess our message to the TRB is to have the  
13 resources focus on the realities of the program, the things  
14 that we think are really going to happen with this program  
15 based upon whether it be the political realities, the policy  
16 realities, the financial realities. We'd like to see  
17 decisions made, and if Jeff was still here, I would have  
18 given him my magic 8-ball, but we would really like to see  
19 some decisions made on mode and route as soon as possible,  
20 because that will allow the counties to get on with their  
21 programs, get on with decision making, and move forward in  
22 protecting the public health and safety.

23           We've all done a lot of research. We've all formed  
24 a lot of opinions on the details of that, and I'm not going  
25 to go and burden you with the details of that today. But,

1 really, the sooner that these decisions are made, the better  
2 off we'll all be here in Nevada.

3           That's all I have to say. Thank you.

4           BRADSHAW: Thanks, Paul. You're going to put some of  
5 those guys on the late night infomercials out of business  
6 with that new gadget there.

7           Abby Johnson representing a suite of counties along  
8 the I-80 corridor, and combining her comments with her  
9 specific county with some of the other in that suite.

10           Thank you.

11           JOHNSON: Thank you, Les. I am Abby Johnson. I'm the  
12 Nuclear Waste Advisor for Eureka County. But my presentation  
13 is coordinated on behalf of Eureka, Lander, Mineral and White  
14 Pine Counties. If I say anything that sounds too opinionated  
15 or outrageous, that would be speaking on behalf of Eureka or  
16 myself.

17           What I'd like to do is to talk about what it looks  
18 like from the draining end of the transportation funnel in  
19 northern Nevada. And you saw earlier what those maps look  
20 like.

21           We're looking at the possibility of commercial  
22 spent fuel, defense spent fuel, defense high-level waste, the  
23 Goshute PFS commercial waste, low-level and mixed waste bound  
24 for Nevada Test Site, all coming through our area.

25           You know, to us, jurisdictionally, we have a hard

1 time sorting out what's DOE's responsibility, what's the  
2 Department of Transportation's responsibility, what's the  
3 jurisdiction of the NRC, what's somebody else's job. It's  
4 all coming down to us, and we're looking at our  
5 responsibilities of public health and safety.

6           We have volunteer emergency medical and fire  
7 departments. We have extremely long distances, long response  
8 times, distant medical facilities for emergency care. When  
9 White Pine County responds to an emergency call, by the time  
10 they get there, get to the hospital, and get home, it can be  
11 four and a half hours.

12           DOE still can't tell us, as you well know by now,  
13 rail or truck, dedicated trains or general freight, or  
14 routes. These are things our people asked in the Draft  
15 Environmental Impact Statement hearings.

16           And public confidence has been touched on today.  
17 Well, it doesn't do anything for public confidence when the  
18 people of Crescent Valley, Eureka County, Nevada hear year  
19 after year, gee, we still can't answer that. We still don't  
20 know. We'll have to get back to you on that.

21           I'm going to skip a lot of my presentation because  
22 it's been covered by other people. For the Carlin Rail spur  
23 concerns, DOE says it can decide on a corridor based on the  
24 information in the FEIS, that they don't need any more  
25 information. They can make that decision today. We don't

1 think there's enough information to make that decision, or at  
2 least an informed decision. And even DOE in their budget  
3 language for the FY '04 budget had a description of  
4 activities for '03 that said they were going to spend money  
5 to design culvert sidings and spur facilities for all five  
6 corridors so they could get some cost estimates to help them  
7 make a determination of which corridor they should pick.

8           They have, at the same time, not verified any of  
9 the conceptual work they've done. They have not put on their  
10 hiking boots, as far as we know, and checked out any of the  
11 five corridors, except they did work on the Caliente corridor  
12 a long time ago.

13           County concerns, this is primarily Lander and  
14 Eureka Counties, actually very similar to what Les said,  
15 flooding, grazing, mining, stigma, land use, impacts on and  
16 takings of private land, a huge issue, taking of private  
17 land.

18           Cumulative impacts. To date, DOE has failed to  
19 acknowledge of address the cumulative impacts due to the  
20 transportation of low-level waste and high-level waste spent  
21 nuclear fuel through rural communities.

22           The FY '04 Presidential budget alludes to an  
23 integrated plan for the two national shipping campaigns to  
24 Yucca Mountain, and low-level waste to the Nevada Test Site.  
25 That was a surprise to me that there was someone thinking in

1 that sort of big picture kind of way. Of course, it was just  
2 a sentence.

3           We also have rural legal weight truck concerns.  
4 White Pine County is the county that Paul was referring to  
5 that is receiving most of those low-level waste shipments  
6 coming from Wendover through Ely to the Nevada Test Site, and  
7 White Pine County especially is concerned that that sets a  
8 precedent for high-level waste shipments.

9           We've talked a lot today about emergency response  
10 needs and the dependence on 180(c). 180(c) funding is  
11 supposed to provide planning funds to tribes and states to  
12 train local governments in emergency response. Our opinion  
13 is that at the draining end of the funnel, 180(c) is not  
14 going to be adequate. It might be adequate for corridor  
15 states. Of course, the program hasn't been set up, designed,  
16 there hasn't been stakeholder input. So, it's kind of not  
17 comforting to say, oh, 180(c) will take care of that, without  
18 knowing the specifics of how it would take care of counties  
19 at our end of the funnel.

20           In Eureka County's Impact Assessment Report, we  
21 recommended as an impact issue, we are studying a regional  
22 emergency response and training center in central Nevada in  
23 the vicinity of the rail spur and truck routes, we think  
24 that's essential, staffed with professionals, not volunteers.

25           It's not clear that local responders, based on

1 180(c), will be ready, based on DOE's lack of attention to  
2 transportation planning for years, and it's unclear about the  
3 funding adequacy of 180(c).

4           We believe that national transportation planning is  
5 the first step. In order to make a defensible decision on  
6 Nevada rail, DOE should begin national transportation  
7 planning first, and Nevada routing decisions must be made in  
8 that national context. And I can't emphasize this enough.  
9 This includes the potential for 40,000 metric tons of  
10 commercial spent fuel in western Utah at Nevada's border at  
11 the Goshute--potential for the Goshute PFS facility. For  
12 DOE, national planning must include that. It can't be, well,  
13 it's an NRC facility, it's NRC's responsibility. No, that's  
14 the same waste.

15           DOE must also overcome enormous institutional  
16 barriers as it attempts to work out national transportation  
17 plans, as we heard today, such as consulting stakeholders,  
18 and working with federal agencies and industry groups,  
19 something that we haven't seen a lot of so far.

20           We find that the system's approach is missing.  
21 There is yet to be a solid integrated transportation  
22 proposal. This transportation, movement of waste, is not a  
23 linear process. Instead, it is a confluence of shipments as  
24 they move to Nevada. And DOE needs to look at worst case  
25 scenarios, including logistical complications.

1           For example, in the Draft EIS, they said if the  
2 Carlin route flooded in Crescent Valley, they would just stop  
3 shipments until the flooding went away. Now, I consider that  
4 to be a logistical complication that kind of backs things up,  
5 plus you're not necessarily going to know in advance when  
6 it's going to flood.

7           Other people have touched on WIPP, so I won't.

8           I find that whenever I do a presentation, I always  
9 have a "Questions Remain" section, because these questions  
10 keep remaining. Mostly truck or mostly rail? What does DOE  
11 need before making this decision? What else do they need to  
12 know? Dedicated train or general freight? I was surprised  
13 at how little that was discussed today. Who makes this  
14 decision? When? On what basis? Cost, safety convenience,  
15 security, expediency? Do the railroads, states, local  
16 governments, industry, the public have a voice in the  
17 decision?

18           Route designation by states is likely to redirect  
19 shipments away from urban areas and towards rural areas. Yet  
20 this, in turn, will affect national transportation planning  
21 and emergency response capabilities.

22           I'm glad Jim used the word paradox, because that's  
23 what we have here, a variation of his paradox. The FEIS  
24 asserts that the risks from accident are infinitesimal, that  
25 99.999 thing. Rural communities reason that if that's really

1 true, why avoid urban areas where emergency response  
2 capability is more advanced and roads are better.

3           On the other hand, if the risks are greater than  
4 portrayed by DOE and NRC, then why are rural people being put  
5 at greater risk by their government and being more expendable  
6 because of where they live, something that we've gone through  
7 already with above and underground nuclear weapons testing.

8           Regarding safety and security, DOE and it's federal  
9 partners must look at safety and security vulnerabilities  
10 throughout the system, including terrorism and sabotage.  
11 Here's an example. NRC requires armed guards in urban areas,  
12 and does not require armed guards in rural areas. They've  
13 told me they will not drop their weapons. They will still  
14 hold onto them.

15           Now, the things that I think the TRB could help  
16 with. To advocate for a national transportation planning  
17 that uses a systems approach. To encourage DOE to engage  
18 affected states and local governments now, and to maintain an  
19 ongoing dialogue, transportation being part of oversight.

20           I know the Chairman wants to have a narrow scope  
21 for the charge of this panel, but I think that the TRB  
22 providing oversight on the technical validity of the package  
23 performance stuff that NRC is embarking on, not so much that,  
24 but integration of that information into the DOE planning  
25 process. I can see a situation where these things are going



1 on in parallel universes, and the NRC information never  
2 connects to the DOE path forward to 2010. You guys could be  
3 instrumental in making sure that those two groups are talking  
4 to each other.

5           It's also important to encourage DOE to study and  
6 be aware of the cumulative effects of transportation of high-  
7 level waste, spent nuclear fuel, low-level waste on local  
8 infrastructure and emergency preparedness, not just in the  
9 event of accident, but just the day in and day out kind of  
10 thing.

11           And, finally, rural routing should not be the  
12 result of political convenience.

13           Thank you.

14       BRADSHAW: Thanks, Abby.

15           George McCorkell for Esmeralda County.

16       MC CORKELL: Thanks.

17           I just wanted to begin by saying that as you will  
18 see, Esmeralda County shares a lot of the sentiments that  
19 were addressed by my colleagues here, and I don't think that  
20 should be seen as repetition, but in fact should magnify the  
21 importance of these issues coming from separate  
22 jurisdictions.

23           This map I actually pulled out of the Final  
24 Environmental Impact Statement, and I've got it up here, this  
25 is my only slide. I just wanted to give you a visual for two

1 reasons. First of all, so you know where Esmeralda County,  
2 in particular, the county seat of Goldfield, are situated  
3 geographically, and also so you can see, as I'll get into in  
4 a minute here, Esmeralda County's vital role in the  
5 transportation system.

6           Esmeralda County has spent over a decade  
7 understanding and evaluating issues associated with the  
8 transportation of spent nuclear fuel and high-level waste to  
9 Yucca Mountain. Our approach has been to position the County  
10 so that it has a credible and meaningful role in the  
11 development of transportation public policy versus getting  
12 entangled in the hysteria and public posturing that is the  
13 trademark of this issue.

14           It is our responsibility to put nuclear waste  
15 politics aside and begin the development of the system and  
16 policies that protect public health, the environment, and  
17 economy of Esmeralda County.

18           Esmeralda County is certain that all shipments to  
19 Yucca Mountain will be transported through our county. The  
20 basis for this is really very simple. All routes go through  
21 Esmeralda County with the exception of route options that go  
22 through Las Vegas Valley. I doubt that there is a person in  
23 this room who honestly believes that waste will be  
24 transported through the Las Vegas Valley. And the only other  
25 option is the Caliente Chalk Mountain route, which is by far

1 the best option, but not among DOE's preferred alternatives,  
2 which was mentioned earlier.

3           Englebrecht talked a few minutes ago about land use  
4 conflicts that of course would make it virtually impossible  
5 to construct routes in the Jean and Valley corridors.

6           I just wanted to add that there are also political  
7 considerations which would eliminate route options through  
8 the Las Vegas Valley. This has already been demonstrated  
9 with the routing decisions for low-level waste shipments to  
10 the Nevada Test Site. Minor transportation incident a few  
11 years ago cause political fear in Nevada that resulted in DOE  
12 dictating to shippers to use transportation routes that avoid  
13 the Las Vegas area. Thus, all shipments to Yucca Mountain  
14 will go through Esmeralda and Nye Counties, and very likely  
15 Lincoln County.

16           Depending on routing decisions yet to be made,  
17 other rural Nevada counties might be impacted as well, but  
18 all shipments will go through Esmeralda County, perhaps the  
19 poorest and least prepared county in Nevada. Impacts are far  
20 greater in rural Nevada than they are in other communities  
21 due to our location at the end of the transportation funnel,  
22 where shipments are highly concentrated and resources for  
23 emergency management are limited.

24           DOE is far behind in beginning the process of  
25 developing transportation policy and coordination with key

1 stakeholders. Local governments in Nevada that are impacted  
2 by transportation routes should be a focal point of the  
3 decision making process. A record of decision on routing and  
4 mode is needed to begin focused discussions on transportation  
5 policies. Stakeholders must be involved on important  
6 decisions concerning full-scale testing, dedicated rail,  
7 emergency response planning and training, medical  
8 preparedness, shared use of rail for commercial purposes,  
9 tracking systems and operational issue recommendations such  
10 as safe havens, inspections, advanced notifications, and  
11 escorts, just to name a few.

12           This map, as I said earlier, illustrates our  
13 County's vital role in the national waste transportation  
14 effort. DOE produced it to depict the various options  
15 analyzed in the Final EIS for shipping high-level waste by  
16 rail to Yucca Mountain. As you can see, all rail corridors  
17 to the repository will traverse the eastern portion of the  
18 county near the town of Goldfield. Goldfield is our county  
19 seat and one of our largest population centers.

20           One method for mitigating potential adverse impacts  
21 of waste transportation would be to employ local residents in  
22 the construction and operation of the railroad.

23           Furthermore, the railroad should be routed and/or  
24 branch lines developed to increase money and tourism  
25 opportunities. Given the existing political climate and the

1 many environmental and land use challenges DOE will face,  
2 we're not at all optimistic that the railroad will ever be  
3 developed. And I think Paul alluded to this earlier.  
4 Considering that DOE has not even scratched the surface in  
5 developing plans for railroad, it seems beyond the realm of  
6 possibility that this mode of transportation will be  
7 available to begin waste acceptance in 2010.

8           While rail is our preferred mode of transportation,  
9 we expect that waste will be transported at least initially  
10 by truck in Nevada. We also believe that DOE's objective  
11 will be to maximize the use of rail on a national basis.  
12 Therefore, it seems that an intermodal facility will be  
13 developed. There are three intermodal options considered in  
14 the EIS. Two are located in Clark County, and a third is  
15 located in Lincoln County near Caliente.

16           For reasons stated earlier, we have absolutely no  
17 expectation that waste will be transported through Clark  
18 County, and we expect that an intermodal facility will be  
19 developed in Caliente, which will result in the use of U.S.  
20 95 as the highway corridor to the repository.

21           U.S. 95 is a major artery for highway traffic  
22 through Nevada, and traverses the entire length of Esmeralda  
23 County. And, no, I don't have it pictured on this map.  
24 Other maps show it. It very much parallels the proposed  
25 Caliente and Carlin rail corridors in Esmeralda County. So,

1 you can kind of get an idea, you know, it impacts, kind of  
2 takes up the same terrain there.

3           An issue there is that, you know, U.S. 95 takes a  
4 90 degree turn in Goldfield. This curve has been the scene  
5 of numerous commercial truck accidents over the years. In  
6 addition, there is a very steep grade just outside of  
7 Goldfield that causes many vehicular breakdowns. These are  
8 examples of the type of everyday impacts that must be  
9 considered.

10           In conclusion, we, and I think everybody else  
11 mentioned this, we strongly encourage the DOE to take the  
12 steps necessary to immediately begin site specific  
13 transportation planning.

14           Mr. Williams earlier today alluded to the WIPP  
15 model, he talked about the WIPP model. And this model has  
16 demonstrated that DOE can work closely and early with local  
17 governments to achieve success, which should certainly be  
18 followed.

19           The past avoidance of the transportation issue by  
20 DOE has generated unnecessary distrust in rural Nevada. In  
21 order to safely transport waste and to gain public  
22 confidence, DOE must immediately engage rural Nevada in  
23 transportation planning.

24           Thank you.

25           BRADSHAW: Thank you. I think you've heard just about

1 every conceivable safety and public confidence issue that  
2 there is out there, and I think that concludes our remarks.

3 ABKOWITZ: Les and the rest of the panelists, thank you  
4 very much.

5 We have a little bit of a time management problem  
6 here, so I'm going to ask the Board members to restrict their  
7 questions to their most compelling ones. And I do want to  
8 also point out we have nine people registered to speak in the  
9 public comment period, and I recognize those individuals may  
10 have other commitments. I certainly don't want to detain  
11 them.

12 Dan, did you have--

13 BULLEN: Just two quickies?

14 ABKOWITZ: Yes, two quickies.

15 BULLEN: Bullen, Board. Just maybe a quick comment from  
16 each of the people besides Les, because Les proposed the idea  
17 of not a deadend rail spur. And, routinely, everybody said  
18 that rail transport, although it may not happen by 2010, is  
19 probably the preferred route. Would a rail spur that  
20 basically was a through line, with a spur off to go to Yucca  
21 Mountain, be advantageous or desirable, depending on the  
22 route chosen through the counties that have expressed a  
23 concern about the fact that it's going to be an intermodal  
24 transfer and truck? I mean, I'm trying to look at areas  
25 where economic development--I mean, Les obviously identified

1 that as a possible issue for his county. But, do the other  
2 counties feel the same way? And you don't have to speak for  
3 your county. You can give me your personal opinion. I don't  
4 want to put you on the record, because I know I go on the  
5 record, and people get mad at me.

6         JOHNSON: Abby Johnson, Eureka County. Yes, I think  
7 that Eureka County, if the route were to be built, it would  
8 be better to have a through route than a deadend.

9         SEIDLER: I would agree with that. There's not a lot of  
10 that that it would stimulate economic development, and so I  
11 think we need to see more evidence with regard to that.

12                 The other concern is the politics associated with  
13 that, because the implication then is, of course, that waste  
14 would be shipped potentially through Clark County or Washoe  
15 County. And, so, there are some political implications, even  
16 if it's stated that the purpose for going through is for  
17 economic stimulation, I think you open up potentially a can  
18 of worms with regard to the politics of this issue.

19         VON TIESENHAUSEN: Englebrecht von Tiesenhausen, Clark  
20 County. I don't think there would be much benefit to Clark  
21 County in this issue, actually.

22         MC CORKELL: I think Esmeralda County has actually  
23 looked at the minor route, which Les showed you earlier in a  
24 figure as, you know, a possible, you know, as you said, as an  
25 economic development base because it would open up a lot of



1 the mining in that area, and could, you know, and I think  
2 further investigation is certainly needed, but could  
3 stimulate some economics.

4 BULLEN: Bullen, Board. Just a last question for Mr.--  
5 is it Seidler?

6 SEIDLER: Yes.

7 BULLEN: You mentioned a report that's being prepared.  
8 Is there an opportunity for us to receive that? And I assume  
9 it will come at some point in the near future?

10 SEIDLER: Yes, we'll make sure you get it right away.  
11 And, also, I do have Mayor Phillips' official talking points  
12 for today's meeting. But, we will get you the impact  
13 mitigation report.

14 BULLEN: Great. Thank you.

15 ABKOWITZ: Dick?

16 PARIZEK: Parizek, Board.

17 I'm looking at Page 6, Item 4, Transportation  
18 Planning from Les' talk, and you have a bullet there that  
19 says take the time to do it right. And that has a lot of  
20 implications in terms of how you'd recommend this be done,  
21 what sort of time frame. Because taking time means you can't  
22 make a quick decision. On the other hand, all of these  
23 deadlines that are looming require action. We heard one  
24 let's get on with deciding so we can then deal with this at  
25 the local level. But, your bullet there is thought

1 provoking. Do you want to elaborate on that?

2 BRADSHAW: Just not too much, because I know there's  
3 lots to do. But the issue of taking the time to do it right  
4 I think has implications for a good, safe, well thought out,  
5 we don't want to be pushed up against a deadline, and this  
6 has been brought out by the various people here. We don't  
7 want to be pushed up against a deadline, and then have some  
8 rush decision that has a weird or bizarre outcome. So, just  
9 take the time to do it right.

10 DOE has been at this. We've been at this for 35  
11 years, or so, and this is the key issue that's going to make  
12 this national program work. There has to be public  
13 acceptance. I mean, otherwise, if you have one line in to  
14 Yucca Mountain, and the mayor of Salt Lake City lays on that  
15 track, it's over, you know, it's over. So, I mean, we've got  
16 to think this out and make this transportation plan work so  
17 that the public has confidence in it and it's safe, and that  
18 nobody feels that they're being unduly imposed upon. I think  
19 that embodies what I was trying to say.

20 PARIZEK: And the last bullet, DOE is in a position to  
21 support best practice, but not to take point. Now, they  
22 really have the responsibility to create the transportation  
23 and carry out the transportation program, but how do they do  
24 that and not take point?

25 BRADSHAW: Well, they ought to let--by that, we mean

1 that DOE has a lot of, and I'm not saying this  
2 disrespectfully, but DOE is carrying a lot of baggage on this  
3 issue. They've got lawsuits. They've got court orders, and  
4 so on. They've got, you know, they're predisposed, or  
5 they're being pushed along in certain directions, and a best  
6 practices national transportation plan may best be done and  
7 thought out by people that are at the table with DOE. For  
8 instance, I'm just extemporaneous here, but like the national  
9 legislative group, Mr. Reed's group, I mean, they've thought  
10 out many of the details here. So, DOE has to gather these  
11 people in and spread the heat around on this decision.

12           This will never ever be a popular decision, and  
13 whatever decision is made, there's going to be oxes gored all  
14 the way from Las Vegas to the East Coast. So, share that  
15 decision making.

16           PARIZEK: One other point. I want to compliment each of  
17 the speakers on what I see to be a very mature analysis of  
18 the problems as you see it at the local level. You're down  
19 at the low end of the funnel, again, without the resources  
20 and without maybe the emergency response capability, and all  
21 of the other things that you've pointed out. It's an eye  
22 opening presentation that each of you gave. It gives me a  
23 lot of food for thought, and I would hope that this then can  
24 go back in at the national level and be shared, because  
25 you're all the point people from the point of view of where

1 it's coming to, or could be coming to. And, given that, your  
2 mature outlooks are greatly appreciated.

3 BRADSHAW: Thank you.

4 ABKOWITZ: Thank you. I'd like to echo Dr. Parizek's  
5 remarks in terms of the level of concern and time you've put  
6 into contemplating your views on the subject. And I'm sure  
7 we'll have an opportunity to visit with you again as time  
8 goes on. Thank you.

9 We're moving into our public comment period at this  
10 point, and I just wanted to point out that the Board has  
11 always considered it to be very important that any individual  
12 who has views to share on the subjects that we are assessing  
13 have the opportunity to speak on their behalf. And, so, in  
14 doing so, we're entering into that time allotment here for  
15 our session today.

16 I have nine people registered on the program. I'm  
17 going to read them out in the order that they have been asked  
18 to speak. Because we have so many folks on the program, I'm  
19 going to ask each speaker to try to focus their comments and  
20 keep their comments to no more than a five minute period.

21 We will start with Dr. Sam, and again I'll  
22 apologize ahead of time here for my pronunciation, it's  
23 partly the way these names have been written on the paper and  
24 partly my inability to know where to accentuate. But I'm  
25 going to try my best. We're going to start with Dr. Sam

1 Armijo, and then he will be followed in the following order,  
2 Dolores Honeycutt, Tom McGowan, Grant Hudlow, Sally Devlin,  
3 Bill Vasconi, Jacob Paz, Judy Treichel and Kalynda Tilges.

4           Okay, so, we'll start with--and if you would please  
5 identify yourself for the transcription when you begin your  
6 points.

7           ARMIJO: Mr. Chairman, my handwriting isn't very good.  
8 It's Sam, last name is Armijo, A-r-m-i-j-o. I will be brief.  
9 I wanted to focus my remarks on the issues of public  
10 confidence and communication. I will not repeat, because I  
11 think an excellent job was done by the counties of Nevada.

12           I would totally endorse their proposals. I think  
13 DOE could do a lot better if they did a bottoms up approach  
14 to communicating with the legal entities in the state. I  
15 think top down, and strictly at the top at the state level is  
16 probably not the most productive way to go, but certainly  
17 these counties have put a lot of thought into their work, and  
18 it shows.

19           I personally have spent a lot of time in the  
20 nuclear industry, 30-some years in the nuclear industry.  
21 I've been responsible for the design, the development, the  
22 licensing, the production and the selling of fuel for G.E.'s  
23 nuclear fuel business around the world. So, I'm familiar  
24 with this technology. I've retired. I'm now an adjunct  
25 professor at the University of Nevada at Reno. But I would

1 like to emphasize that the remarks I make are my own, and  
2 don't necessarily represent the university nor my former  
3 employer.

4           I think the problem in Yucca Mountain, if you read  
5 the newspapers in Clark County and Washoe County, where we're  
6 from, may give the wrong impression of the views of Nevada  
7 citizens. Nevada citizens are very open, they're very smart,  
8 and they're very independent. I had the opportunity to be a  
9 delegate to the 2002 Republican Convention here in Las Vegas  
10 last year, and I was also a member of the Party Platform  
11 Committee, and clearly the issue of Yucca Mountain was very  
12 important to the state. And I was a little concerned in that  
13 committee that I might be the only person who was supportive  
14 of Yucca Mountain. We had 20 to 30 people from all the  
15 counties on the Platform Committee.

16           I walked into that meeting, and I found immediately  
17 there were three or four other people with position papers,  
18 ranchers, ex-military people, as well as myself, with well  
19 thought out, very well prepared presentations, material  
20 supporting Yucca Mountain. This was a grass roots  
21 initiative.

22           In the Platform Committee, because on the whole  
23 there was no support for an Anti-Yucca Mountain plank, and  
24 consequently our Platform Committee did not issue any plank  
25 on Yucca Mountain. And as we talked among the committee

1 members, I found that people were very open. They wanted to  
2 hear, they wanted to hear from people that knew what they  
3 were talking about. They were not interested in sound bites.  
4 They were not interested in propaganda documents. They  
5 really wanted to talk and understand what was going on.

6           We then went to the general floor of the  
7 convention. We also had a lot of conversations.  
8 Unfortunately, there was no opportunity to debate the issue  
9 of Yucca Mountain. But, again, we found that the delegates  
10 were very open and wanted to learn more about it.

11           So, I urge perhaps the Board and everybody here in  
12 this audience who has expertise, and I know there's  
13 tremendous expertise in this room, to get involved, to talk  
14 to people. Slick brochures from DOE are wonderful to a  
15 certain extent, but that won't convince people. You've got  
16 to have person to person contact, and I think again a lot  
17 should be done to emphasize bottoms up communication.

18           The net result of all of this work at our  
19 convention was one plank was proposed from the floor  
20 supporting the President's nuclear programs, nuclear energy  
21 and energy independence program, and that received the lowest  
22 votes from all of the delegates of all the platform planks.  
23 One platform proposal to state that the Republican delegated  
24 supporting Yucca Mountain failed by a slim margin, and the  
25 only one that passed on Yucca Mountain was something in

1 between that said, well, in the event that the Senate  
2 overrules the governor's veto, we urge the governor to please  
3 work with the federal government to make this thing safe,  
4 sound, and of maximum benefit to Nevada.

5           And I think the time for the politics and  
6 everything else should be over, but it isn't. And the only  
7 way it will be over is if more effort is placed by the people  
8 in the know to talk to the citizens, talk to the base level  
9 governing organizations, and you'll find that you make an  
10 awful lot of progress.

11           Again, I want to go back to that issue I mentioned  
12 yesterday, excessive conservatism in design does not put  
13 people's mind at ease. In fact, it alarms them. Because if  
14 non-mechanistic, unrealistic accident scenarios are proposed,  
15 engineered, and then said well, we can still handle that,  
16 people believe that those terrible things can happen, even  
17 though they can't.

18           So, again, I go back to that old point, the  
19 realistic engineering, good engineering is what's needed, and  
20 excellent communication, and to the extent that the Board can  
21 influence DOE and others to talk at the grass roots, we'll  
22 all be better off.

23           Thank you.

24           ABKOWITZ: Thank you. Our next speaker will be Dolores  
25 Honeycutt.



1           HONEYCUTT: I'm Dolores Honeycutt from Goldfield. I'm  
2 president of the Chamber of Commerce there, and on the  
3 Citizens Advisory Commission.

4           I'm also very nervous. I guess you all can tell.  
5 I came from back east originally from around the power  
6 plants, and you'll find more fear there than you will here  
7 where it's going to be a reality.

8           This was my first meeting. I was kind of  
9 overwhelmed yesterday by all the technical things, but  
10 gradually, I began to see the impact on me and Esmeralda  
11 County. I had hoped for more answers, but I guess I got more  
12 questions, like a lot of you did, because you didn't get your  
13 questions answered either.

14           In Goldfield, we are like an extended family.  
15 Everybody is very close. Asking for safety measures and  
16 protective equipment is only to protect themselves and to  
17 help, because we feel like this is our friend or our family  
18 that's going to be reacting. We don't have a medical center  
19 close. If we have any kind of serious thing, they have to be  
20 air lifted to Las Vegas or Bishop or to Reno.

21           And in the presentation, you heard that just about  
22 any kind of way you take it, it's coming through Esmeralda  
23 County, and we don't have the facilities. So, we do need  
24 that addressed.

25           Thank you.

1 ABKOWITZ: Thank you. Our next speaker is Tom McGowan.

2 MC GOWAN: Tom McGowan, Las Vegas resident and candidate  
3 for election as mayor of the City of Las Vegas, Nevada.

4 I want to be the first to welcome you here to the  
5 world famous Tuscany Hotel. Thank you very much. It's very  
6 impressive. And as a matter of fact, when I found my way in  
7 here, I said how do I get to the catacombs, and he told me.

8 It was recently determined by a well settled  
9 astrophysicist that instead of a big bang followed by a  
10 gravity induced big crunch, all matter in the four-  
11 dimensional universal spacetime continuum is racing apart  
12 towards an ultimate end state of respectively insularized and  
13 intra-remotely distanced isolation, thereas and thereby  
14 marooned in an infinite void where relativity no longer  
15 exists, since there will be nothing within the range of  
16 scientific perception to obtain as deemed relative to. Does  
17 that make sense?

18 BULLEN: Pay attention.

19 MC GOWAN: You have no lines.

20 BULLEN: I'm sorry.

21 MC. GOWAN: Consistent therewith, it's abundantly  
22 evident that DOE, within a few decades of exhaustive self and  
23 mutual confoundment, has attained to the same state of  
24 advanced morbidity with regard to itself and the TRB, as well  
25 as to the rest of reasoning humanity, as to the rest of you.

1           The validity of that assertion is attested to by  
2 the fact that DOE's presentations, which ordinarily begin  
3 with the reassuring phrase, "Once upon a time," and end,  
4 "Happily ever after," have since become identifiable by the  
5 frank and forthright short title, "I don't know," and endless  
6 reiteration. And have further declined to the "CYA"  
7 expediency driven pleadings, "Safety is a function of  
8 funding," which leads unerringly to the reasonable assumption  
9 that both safety and funding are a function of smart, or the  
10 absence of it, which explains everything.

11           In the fictional world of DOE, the most egregiously  
12 impactive consequences of seismic activity occur only at a  
13 discontinuity definable as the ambient surface, and not at a,  
14 however, albeit internalized quasi surface discontinuity  
15 definable as an underground repository, whose cumulative sum  
16 of subsurface deployed discontinuity is quantifiable in  
17 several hundred cubic meters of virtually empty space, or if  
18 backfilled, of granular material in stark contract to the  
19 intrinsic rigidity of the encompassing host rock. Correct me  
20 if I'm mistaken anybody.

21           In similar mystical fantasm, DOE assures all and  
22 sundry blathering idiots who just fell off the turnip truck  
23 that in the instance of compelling need, it has the  
24 capability to retrieve the emplaced waste before, but not  
25 post, closure and to deploy it on the proximally adjacent

1 ambient surface, not as unlawful interim storage, but solely  
2 pending further instruction apparently deemed ensuing  
3 eventually, if ever, or at all, from some higher pay grade,  
4 somewhere, somehow, ad infinitum ad nauseam. You know the  
5 rest.

6           Thereas, and not surprisingly, it's obvious to all  
7 but the certifiably comatose that DOE's repository scheme in  
8 service to the "betterment of mankind" is more so akin to a  
9 fascinating, costly and protracted game designed by Parker  
10 Brothers to appeal to the eight year old market.

11           For its part, the eminent, prestigious almost the  
12 whole Board, shrunk to a quorum, you are still a quorum; is  
13 that correct? You have no minds, just nod approvingly.

14           BULLEN: You can't hear me nod.

15           MC GOWAN: Anyhow, the TRB interprets DOE's de rigueur  
16 recommendations to invite public communication, whatever that  
17 may be, which equates to interaction in the real world, to  
18 comprise a mandate to engage in public censorship. Don't  
19 take offense at that. You're new here.

20           Incidentally, what do you do here exactly? Never  
21 mind.

22           But, why quibble, since the activities of the DOE  
23 and all nuclear waste transfer and storage at Yucca Mountain  
24 and that of participants is now, has always been, and  
25 foreseeably will remain, a wholly transparent and indeed

1 omni-embarrassing exercise in futility, reinforcement of the  
2 undeniable fact that the world's leading scientific,  
3 technological and academic minds have failed themselves, each  
4 other and all posterity, inter-generationally, and for the  
5 rest of human time. It gets worse. And for no other reason  
6 than the fact that via NWPA, the Congress instructed the  
7 generic "you" not to think, and worse yet, it paid you to do  
8 it. Even worse than that, you agree.

9           It paid you also to ignore the probability that in  
10 the instance the repository is found to be unsuitable and  
11 beyond remediation, either before or post-closure, the  
12 retrieved waste eventually, or sooner, will be destined to be  
13 re-transported elsewhere, perhaps omni-directionally, and  
14 perhaps in perpetuity.

15           Clearly, the fundamental crux of the issue is not  
16 now and never was or will be nuclear waste, per se, but is  
17 causally rooted and embodied in the frailties of limited  
18 interested, expediency driven human nature.

19           But, human problems have a human solution, with the  
20 help of almighty God. We are each and all creator-endowed  
21 with intellect, freewill and conscience, and the greatest of  
22 those attributes, by far, is conscience. Not on your agenda.  
23 Don't even look it up. Conscience.

24           We can make this place a better world, and properly  
25 harnessed nuclear waste can provide an endless supply of

1 safe, clear, neo-energy conducive to world peace, progress  
2 and productive co-existence. Don't tell that to George W.  
3 and Saddam. They have their minds made up. In fact, don't  
4 even tell each other, because some of you may have your minds  
5 made up. Why you did not consider other alternatives yet, I  
6 have no idea. Maybe some day you can explain it all to your  
7 great-grandchildren.

8           But, first, we have to really want to make a better  
9 world, and to do so, we must first want to become better  
10 people. It's not quite that simple. It can be done, but it  
11 isn't for the faint of heart, and won't be done by those who  
12 sell their hearts, minds and souls for a price, however  
13 lucrative.

14           So, coward, take my coward's hand, and together,  
15 let's endeavor to take one, however timorous and faltering,  
16 step down from the primordous tree, and strive confidently  
17 across the non-returnable threshold that opens onto the  
18 brilliant horizon of unprecedented challenges and  
19 opportunities for extraordinary human achievement that awaits  
20 and beckons throughout the third millennium, and beyond.

21           I've run out of jazz ideas, so that's about it.

22           ABKOWITZ: All right, thank you very much. Our next  
23 speaker is Grant Hudlow.

24           HUDLOW: Hi. I'm Grant Hudlow, and I wanted to thank  
25 you for getting some industry experience in here. That was

1 very refreshing. Steve brought some things up that  
2 scientists have a hard time figuring out how it works. But  
3 when it goes down the road and it works, well, then we accept  
4 it. We need to do the same thing with the metallurgy from  
5 the chemical industry. Any time I want to know anything  
6 about a hole in the ground, I go talk to a miner. He's the  
7 one that's going to have the rock land on his head, and so he  
8 knows what he's doing in there, and what the mine is, and so  
9 forth. I'd like to see some of that.

10           Steve mentioned the safety culture for nuclear  
11 transport, and they seem to be doing pretty well, either that  
12 or they're hiding it very well, I don't know which. And I  
13 think the public expects the DOE to hide things, and it  
14 doesn't expect them to do a good job. So, I think that needs  
15 to be emphasized, that the culture, we have a safety culture  
16 in the chemical industry in the Fifties was that it was an  
17 honor to die for the company.

18           We've slowly changed that. The DOE at the test  
19 site still has a safety culture problem. I talked to several  
20 people about how about the danger of radioactivity. Oh,  
21 well, radioactivity doesn't hurt you. Well, how about the  
22 people around you that are dead? Well, they were wimps.  
23 They're not a man like me. So, that's not a safety culture  
24 that I think should be spread out into the public.

25           And along those lines, we were talking about a

1 full-scale test. How about for a rocket launcher on one of  
2 these canisters. I talked to a young scientist in Los  
3 Alamos, I think, maybe Sandia, he mentioned it only punctures  
4 a quarter of an inch hole in the side of the canister, and a  
5 little bit of radioactivity comes out. Well, I guess he did  
6 that on the computer model. That little quarter of an inch  
7 hole takes out the inside of a tank. And if you happen to  
8 have several Hiroshima bomb fallout equivalents in there, I  
9 want to know where you're going to test that. Maybe on the  
10 other side of the sun would be a good place.

11           And I just want to add that into the safety  
12 consideration. I noticed in some of the paperwork, they said  
13 that we have a management plan for sabotage, and I'd like to  
14 ask you what that is, since when they've released several  
15 Hiroshima bombs fallout out across the country, is that FEMA  
16 is going to get the body bags out, pick up bodies for  
17 hundreds of miles. Is that the plan? Nobody has spelled  
18 that out, but that's the only one I can see.

19           ABKOWITZ: Thank you. Our next speaker is Sally Devlin.

20           DEVLIN: Thank you, Mr. Chairman. You're doing a  
21 beautiful job. We really appreciate it. And I think all of  
22 us old timers here want to say thank you to Tom. We have  
23 missed him. I thought he was dead. And you can't start my  
24 time yet. I thought he was in the obits in the paper here,  
25 and when he showed up, I was so thrilled, because us old



1 timers, or we have endured, remember the 30 minute speeches  
2 with John Cantlon, or longer, do you remember that, Dan? It  
3 was fun, and we're delighted that he's still with us. And  
4 thank you.

5           So, now you can start me. Just a welcome. We're  
6 all friends here. We've all been together for years. Right,  
7 Claudia? Remember? Anyway, I do want to say something.

8           It was my pleasure today to meet Jim Reed. And the  
9 reason I say this is I met him on the phone, and he sent me  
10 the 2000 Governors' Conference Legislature stuff, and in  
11 that, was a page where every state, and at that time there  
12 were 22 states, and what they charged for transportation.  
13 So, of course, I went to our Department of Transportation. I  
14 got the forms. I read them, and so on and so forth. I  
15 culled out inspections, and what have you.

16           And I hate to keep saying nasty things about Nye  
17 County. I hope Les is still here. Good. And that is we  
18 have mold in the schools and all kinds of things. The reason  
19 is Nevada has no inspectors. And, so, no trucks carrying  
20 anything are inspected. Now, that's rather important. The  
21 27 that they have range from \$5 in New Hampshire, to \$1,200,  
22 and maybe more now, in Nevada. So, I suggest you get that  
23 report, because it was the last page of my transportation  
24 report to you guys.

25           The second one I want to talk to is Steve Kraft.

1 Is he here? All right. You asked that people be assured of  
2 the safety of this project. And I'm going to tell you how  
3 people can be assured. You talked about the H-Star 100. I  
4 have all the information from NRC on that. I want to see  
5 these canisters filled with half a mega-ton of the high-level  
6 waste, and drop from 70 feet, and splintered with a spike. I  
7 want to see them burned up with the waste inside. I don't  
8 want any of the pantywaist stuff that you're doing. And then  
9 if any of this stuff endures, then and only then will I  
10 believe you. Does that tell you how you impressed the  
11 public?

12           What you're doing with empty canisters is  
13 unacceptable. Anybody can go into 1,400 degrees and burn for  
14 three days, like they did in Baltimore. What you're doing is  
15 fraud on the public, and I'm going to say it. Put the hot  
16 stuff in the canisters, and go for it. Then let's see. And  
17 let the public see. Let us find out the radiation  
18 potentials, and so on. And that is my opinion, because what  
19 you're doing is not impressive at all. You are not doing  
20 full-scale testing.

21           The other thing is, and of course I have to say it-  
22 -how much longer do I have?

23           ABKOWITZ: You have about two minutes.

24           DEVLIN: Okay. The other thing that I have to say, and  
25 of course I have to bring in two things. The first is

1 political, since we had a Republican, and I'm his Democratic  
2 counterpart, and we of course said we don't want Yucca  
3 Mountain. You haven't tested anything. Everything is phony  
4 baloney, and it's all money, and it's all politics. And I  
5 concur. I've been in on this for ten years, and I say it  
6 honestly to each and every one of you that I have not  
7 received one single report with a period at the end of the  
8 sentence. And I think after ten years, there should be some  
9 periods.

10           And the reason I am so glad that I am against it is  
11 for my conclusion, and that is when you are bringing this  
12 high-level waste, or anything else, for that matter, into  
13 Yucca Mountain, or any repository, or where the governor of  
14 South Carolina laid in the road and the government road over  
15 him, this is what goes on in the world. And as far as I am  
16 concerned, and I told you about my 60 pages on my bugs by Dr.  
17 Bond, which everyone should read, what about the bugs in all  
18 of these sites, 70 something sites. Who has examined them  
19 for bugs? Who knows what you are transporting, bringing in,  
20 contaminating, and what have you? Who knows how long these  
21 rods will last. We just have to look at Hanford and what  
22 happened to the rods around the pellets. My bugs ate them.  
23 Bechtel is getting \$4 billion to clean up the mess there.  
24 And why? Because my bugs ate the containers. So, may I say  
25 to you this is very serious stuff.

1           The other thing I do want to say is it was very  
2 interesting hearing Lincoln County, and Abby, with Eureka,  
3 and Esmeralda County, and I have to leave you kind of  
4 laughing, and that is I was recently up in Esmeralda. 98 per  
5 cent of Esmeralda, and you may correct me if I'm wrong, is  
6 federal. They have maybe 600, 800 people living there,  
7 mostly in Goldfield, which is 26 miles from Tonopah, which is  
8 Nye County's county seat. And we are educating their  
9 children because they have no money.

10           Now, I want everybody to know here that every cubic  
11 foot of waste that's placed in the Test Site, we counties  
12 affected get 50 cents. They put in last year something over  
13 a million cubic feet. We got paid close to a million  
14 dollars. Actually, it was more than \$2 million. So, we're  
15 going to get the rest of the money owed to us. This year,  
16 there will be 2,000,600 cubic feet put in the Test Site.

17           And last, but not least, I am extremely concerned  
18 with the AT18 that is going into Frenchman's Flat at the Test  
19 Site. And does everybody know what AT18 is? AT18 is 2 1/2  
20 metric tons of plutonium grade stuff from Los Alamos, and 1  
21 1/2 tons of uranium. This is weapons grade plutonium and  
22 uranium. And it's going into Frenchman's Flat. Now, you all  
23 are seismographers and you know that's the most earthquake  
24 prone area of the Test Site. It's on the north, coming from  
25 Pahrump, northeast corner.

1           So, there's an awful lot of stuff that we're well  
2 aware of in Pahrump, since we're 40,000, 50,000 people. And  
3 I get concerned with Lincoln County, because they are the  
4 greatest county in the world and they have really nothing,  
5 except 900 kids in the coop extension and 125 leaders, and I  
6 certainly salute them for that. Esmeralda has nothing.  
7 Eureka has very little. And that's not their fault.

8           Nye County is 18,300 square miles, and I was at a  
9 committee fortunately with Carver, who was our commissioner,  
10 and he told me the size. Our other commissioner there, who  
11 was assistant fire chief, I said how many firemen do we have  
12 trained. Maybe in the entire county, 21. How many EMTs do  
13 we have, because our gal that is now working for Les and used  
14 to work for the county, Susan Morris, said we have about 18,  
15 or so. Now, this is in a country 18,300 square miles, all of  
16 the population is in Pahrump, you might as well say. Tonopah  
17 loses every day, and that's our county seat, and we're trying  
18 to change that.

19           But, you're getting a picture of enormous  
20 distances, and I have to leave you laughing, or I wouldn't be  
21 me. And that is remember when you break a tire, or you blow  
22 out a tire, where do you go in Nye County? You go to the  
23 brothels or the casinos. And now we have Dillon's Dolls, and  
24 I hope everybody after the meeting asks me about Dillon's  
25 Dolls.

1           Thank you.

2           ABKOWITZ: Thank you. Our next speaker is Bill Vasconi.

3 I hope I pronounced that correctly.

4           VASCONI: My name is Bill Vasconi. I'm a construction  
5 worker. But that doesn't mean I don't participate at your  
6 meetings. I'm involved with anything in the past years from  
7 employee transition committees, to historical foundations, to  
8 preserve the artifacts of the Test Site during 50 years of  
9 testing. I've also been involved with a community advisory  
10 boards, site specific advisory boards, and for those Nevadans  
11 that think nuclear safety and benefits is an item to talk  
12 about.

13           I worked at the Nevada Test Site some 17 years in  
14 association with such outfits as Sandia, Defense Nuclear  
15 Agency, Lawrence Livermore National Laboratories, Los Alamos  
16 Scientific Laboratories. I've enjoyed this afternoon's  
17 meeting. I've enjoyed the Nye County presentation. I like  
18 to hear people say that it's a national issue versus a state  
19 issue.

20           Many of us involved know that the national issue  
21 portion of it, we've got some 70 nuclear powered submarines,  
22 ten nuclear powered aircraft carriers, five areas in our  
23 country where we worked with atomic weaponry. Those items  
24 have been, particularly the Navy's, have been transported  
25 across the United States from such places as Birmingham,

1 Washington, Hitney, Maine, Newport News, et cetera, to Idaho.  
2 We've not had no problems.

3 I enjoyed the presentation by NEI, and believe me,  
4 if there was something wrong with the credibility, the safety  
5 of transportation of spent fuel rods, my State of Nevada  
6 would have told you time and time and time again. The safety  
7 record stands.

8 I also enjoyed the comments made by Bob Loux, a  
9 representative of the State. You know, I've attended a lot  
10 of meetings. I sit across in panel discussions from Bob  
11 Loux. I've never heard him talk this way. It gives me time  
12 to pause and think, because believe me, the State of Nevada's  
13 position that Yucca Mountain hasn't been responsible or  
14 realistic has been politically motivated and based.

15 You know what? That doesn't work well with a  
16 scientific project. And the way Bob talked today, maybe our  
17 state is reexamining their approach to Yucca Mountain. Maybe  
18 there's an opportunity for us Nevadans to seek benefits  
19 before that opportunity is history as well.

20 You know, I can give you the perception of looking  
21 out that window. You would think my, God, it rains a lot in  
22 southern Nevada. But if you join yourselves and go on down  
23 to the lake, you'll see a ring of white dirt around there  
24 about 60 foot high. If you go on out in the back part of  
25 Nevada, you'll see that we've been in a drought for some four

1 years. So, sometimes the perceptions you see made by a state  
2 official aren't true.

3           Now, you may find that some feel that a railroad  
4 system cost prohibitive. Bob did. But what Bob didn't tell  
5 you was that's just about how much money our taxes are going  
6 to be increased by our governor, equal to the amount of that  
7 railroad system. They want about \$800 million, the citizens  
8 of Nevada have their taxes increased.

9           Bob might want to refrain from talking about the  
10 casks, because I was in a meeting with Bob and I said, "Bob,  
11 if the Nuclear Regulatory Commission does all the tests that  
12 Nevada wants to prove its validity, will Nevada then accept  
13 shipments of high-level waste to Yucca Mountain?" He said,  
14 "Hell, no."

15           So, when I look at it, are we attacking the  
16 substance or the procedures? Bob wants to talk about the  
17 AEIS and what's wrong with it. Bob wants to talk about  
18 litigation, which they've got some six or eight suits against  
19 Yucca Mountain. What Bob ought to talk about is people like  
20 me that's not involved with politics, that are not servitude  
21 to an organization, that are Nevadans that believe this can  
22 work.

23           And, believe me, beyond these walls, beyond the  
24 folks that sit here in government, beyond the people that are  
25 paid to speak and say what they do, there's a good many



1 Nevadans that look at you, the National Academy of Sciences,  
2 to be our voice, to be the ones that question, to be the ones  
3 that get it right. We, too, want to see something done on  
4 transportation.

5           A record of decision, is that what you want to call  
6 it? You know, some two years ago, I attended a meeting with  
7 the DOE, the DOT folks were there, lawyers were there, the  
8 state was there, legislative individuals were there. Russ  
9 Dyer said, "We want meaningful dialogue." Russ Dyer, DOE.  
10 He said we want to talk about the fact that this state, the  
11 mayor, does not want high-level nuclear waste going through  
12 the greater Las Vegas area, metropolitan area. We want to  
13 talk about the state giving us alternative routes. We ant to  
14 talk to the state about trucks. We want to talk to the state  
15 about railroad, not that the state will pay one dime, not  
16 that the state will be involved in any of the financials.

17           They turned a deaf ear to that request. Why? Implied  
18 consent.

19           So, sometimes what you hear on the mike is not all  
20 true. But, again, I want to thank you for coming to Nevada,  
21 and believe me, as one who spends a good bit of time out of  
22 doors, if every time you come here it rains, damn it, come  
23 more often.

24           Thank you.

25           ABKOWITZ: Thank you very much. Our next speaker is

1 Jacob Paz.

2 PAZ: My name is Jacob Paz. I hope you remember me.

3 I'm making five comments. First of all, on the  
4 transportation issue, we have to look at the East. We have a  
5 problem in the East of the--the bridge is corroded. In 1974,  
6 you have an accident at the Connecticut Turnpike, which part  
7 of the Turnpike fell with the heavy load that you have to  
8 carry from the East. It's a very serious issue.

9 Second, the Environmental--I'd like the gentleman  
10 who spoke before me if he would stay, I would like to rebutt  
11 him a little bit. Second, we have an issue in the  
12 Environmental Impact Statement, upon closure is there is a  
13 resumption of the Nevada Test Site, what impact it has on  
14 Yucca Mountain has not been addressed at all.

15 Third, very recently, yesterday was published and I  
16 got, and I hear several people here talk about, by Ewing in  
17 Scientific American about uncertainty at Yucca Mountain. I  
18 have approached several times the DOE to do some studies,  
19 recommended, there are uncertainties that cannot predict at  
20 this point in time the rate of migration of radionuclides,  
21 the effects of radionuclides, and heavy metals. I made a  
22 recommendation to the Board to get an advice from the  
23 National Academy of Sciences, because this is a group which  
24 in 1980 or 1983, first approached it.

25 Second, I'd like to know how Murphy Lowe, with all

1 the uncertainty and the scientific input, in my opinion,  
2 should go into the modeling. I think there is a very serious  
3 issue. We cannot predict. In my opinion, we don't have  
4 sufficient study to approve at this point Yucca Mountain.  
5 You have spent \$7 billion, and very big conservatism, as a  
6 scientist, I don't accept it. As a scientist, you need to  
7 have more data.

8           That's all. Thank you.

9           ABKOWITZ: Thank you. Our next speaker is Judy  
10 Treichel.

11          TREICHEL: Judy Treichel, Nevada Nuclear Waste Task  
12 Force. This isn't a presentation. It's a laundry list. So  
13 it's difficult, but if you sit here for two days and you just  
14 sort of take notes and then get up to put something on the  
15 record that you think needs to be there, this is how it winds  
16 up.

17           When Abby Johnson was talking, she talked about the  
18 fact that at the end, there's always a second called  
19 remaining questions. And I think you have a lot of those  
20 after these two days of presentations, because I don't think  
21 a lot of questions were answered adequately. And one of the  
22 reasons that that always happens is because there is never a  
23 clear understanding, or a clear agreement on what the  
24 definitions are.

25           When Priscilla Nelson was asking about safety, I

1 think it probably meant something different to the person she  
2 was asking who was up here, it meant something different to  
3 her, and it meant something different to the people in the  
4 audience.

5           The simple answer, and the one that we know is  
6 true, because I've been discussing this for almost 20 years  
7 with the Department of Energy is safety equals legal. If it  
8 complies with the regulation, it is then safe. And it is  
9 someone else's decision. The thing can be passed off, but if  
10 it wasn't in compliance with the regulation, NRC wouldn't  
11 have let it happen, EPA wouldn't have let it happen,  
12 therefore, that's what safe means. So, that's one of the  
13 things to keep in mind as far as a definition. That's one of  
14 the more important ones because it's come up all these years.

15           In addition to that, things get clouded because  
16 words like suitability and the suitability determination has  
17 already been made, which I think is a sin, because you've  
18 heard how much of the work is in its infancy. A lot of the  
19 talk yesterday was about how they are just beginning to scope  
20 various work that they plan to do. And yet it's kind of  
21 water that's over the dam. But the definitions get messed  
22 up.

23           When this thing was recommended, it was recommended  
24 by the President and the Secretary in many ways because it  
25 was their determination that it was national security.

1 People across the nation see that as a threat to national  
2 security to have nuclear waste coming as close as it will  
3 that you heard from Englebrecht's talk.

4           The other thing that I wanted to make sure and put  
5 on this record was it's very disconcerting to people who have  
6 come to have a special feeling and a special respect for  
7 Technical Review Board meetings, because it's the one place  
8 that things get hashed out, and to have heard the phrase  
9 used, "Let's talk about that off line, let's talk about that  
10 later," this is the venue where things get talked about.

11           If there is a disagreement between a Board member,  
12 between a consultant, between a speaker and whoever they're  
13 interacting with, this is the place where we want to hear it.  
14 We don't want it to happen somewhere else. We've fought  
15 with DOE and NRC for years over that, and the sorts of things  
16 that perhaps go on on the phone, and it's not an open program  
17 when that happens. And this is the one place where you  
18 cannot do that.

19           I also think in light of this idea about fostering  
20 and building public confidence, which is almost a joke at  
21 this point, the Department of Energy, Margaret Chu very  
22 recently said that they were about to embark on a public  
23 participation program. Well, it just couldn't be a moment  
24 too soon, could it.

25           But, I think that the idea of fostering public

1 confidence is something that's never going to happen when  
2 you're talking about accident scenarios or possibility for  
3 risk being unrealistically high or something that can't  
4 happen. You're putting this program into effect, into place,  
5 it's going on in a country that has seen two years worth of  
6 things that could never have happened.

7           If you ask anybody if NRC's geniuses took their  
8 time to run the risk assessments on planes hitting buildings  
9 and anthrax in letters and D.C. snipers knocking people off,  
10 and, I mean, Columbia is falling out of the sky, the list is  
11 endless, and things do happen and they can happen. And when  
12 I see a number like that 99.99, the first thing I think is  
13 probability, somebody is going to use that to weight  
14 something.

15           When you ask what a dose is going to be, make them  
16 tell you what the dose will be. It's not that hard. And  
17 it's not that they are required not to say, that NRC has made  
18 them use probability assessment, or risk informed,  
19 performance based, or whatever it is. Ask for the dose. And  
20 if you want to do the math with it later, that's fine. If  
21 you would have used those sorts of calculations on the recent  
22 disaster that happened in Rhode Island, you may have had  
23 three minor injuries to the people that were there, not 95  
24 stone cold dead people.

25           So, just finishing up here, I think your job is

1 just as important as it was the day you got started. There's  
2 a whole lot of stuff that's just starting out. You saw  
3 designs today that none of us had seen. You saw designs that  
4 we were still asking questions about, well, where does that  
5 fit, how does that work, do you have a track or are you on  
6 wheels. And you were getting different answers. And the  
7 next time, you're going to see something entirely different.  
8 So, it's just starting out, and your job is altogether as  
9 important as it was.

10           And when you've got DOE out there supposedly  
11 inspiring confidence, but yet the utility is going to be in  
12 the driver's seat, that's a tremendous disconnect. It's not  
13 going to work quite that way, and there are a lot of  
14 questions. There are a lot of remaining questions, and they  
15 still need to be asked.

16           And I thank you for having the counties on. It was  
17 great that you did that. And I would like to have you also  
18 be able to talk to some public interest groups that are kind  
19 of the other big segment that hasn't been talked to.

20           So, thank you.

21           ABKOWITZ: Thank you. Before I introduce the last  
22 speaker, I did want to respond to a couple of things that Ms.  
23 Treichel made reference to. One is we do plan to hear from  
24 more groups, as you know, and it's just a matter of  
25 allocating the time with future sessions to make sure that we

1 have an opportunity to get all those parties in front of us.

2           I also wanted to comment that with regard to the  
3 Board and the off line issue, the person who said that  
4 yesterday immediately acknowledged a poor choice of words,  
5 and did not imply in any way, shape or form that the way that  
6 the Board has conducted itself in the past will change. We  
7 will continue to be a very, very, very open process. I just  
8 wanted to state that.

9           TREICHEL: Okay. But just don't start to act better.  
10 We've heard that from other places.

11           Thanks.

12           ABKOWITZ: Thank you. Our last speaker is Kalynda  
13 Tilges.

14           TILGES: Kalynda Tilges, Shundahai Network.

15           That was a good choice of words that Judy used,  
16 laundry list. I tried to put this together in a form of  
17 comments, but all I really have is a list of questions. I do  
18 have one small statement at the end. And I do have to say,  
19 with all due respect to the Board, that as I mentioned the  
20 last time you were here, I have a problem with the public not  
21 being able to make comments until the very end, because I  
22 have a list of questions here. I have comments. But NEI and  
23 Clark County are the only ones here. It's like to me, it's  
24 living proof that the DOE really doesn't care what we have to  
25 say, and I do see two members of the Technical Review Board



1 missing as well. And, to me, that's very disturbing, not  
2 only from DOE, from the Technical Review Board.

3           If the public is going to be invited and given  
4 space to make comments and ask questions, I think it would be  
5 a matter of respect for people to actually be here who made  
6 the presentations, or give the public some small time, or  
7 figure it out so the public can also ask questions of the  
8 presenters. I'm still going to ask my questions to put them  
9 on the record, but obviously I'm not going to expect an  
10 answer.

11           So, with that said, my questions, most of my  
12 questions were for Jeff Williams' presentation. I think this  
13 Slide Number 3, I brought my own, you don't have to put them  
14 up, is very, not only missing safety information, it's very  
15 appropriate for DOE and how they seem to work everything  
16 around and around in circles.

17           Also, many places, I stopped at Page 38 and 39  
18 about communication, fostering public confidence, build  
19 working relationships, make informed decisions. I was  
20 wondering actually if the DOE had a timeline on this when  
21 they were actually planning on starting. Because they  
22 haven't done so. This is the same lip service they've been  
23 doing for years now, and to me, this means absolutely  
24 nothing. In fact, it means less than something, less than  
25 nothing. It's a slap in the face, because there really isn't

1 a plan to do that. I mean, when? They're not here to do it  
2 now.

3           Secondly, another question I had, and like I said,  
4 these are just for the record, I don't understand how the  
5 Department of Energy can say the impacts of the  
6 transportation are all in the Final Environmental Impact  
7 Statement, when from today and every other presentation I've  
8 seen, they don't really have a clue how they're going to  
9 accomplish this shipping scheme.

10           Also, Slide 41 talking about 180(c), about funding  
11 for the tribes, and all of that, well, as we all know,  
12 Congress can pass all the laws they want, but then they have  
13 to appropriate the funds. So, what's the Department of  
14 Energy going to do, or Office of Repository Design, or  
15 whatever you want to call it, what are they going to do if  
16 the funds aren't enough, or if the funding is cut? Are you  
17 going to cut something else in your program to make sure that  
18 most important of things is done? Or will you just change  
19 the rules like you've done with everything else that was  
20 inconvenient to you?

21           Secondly, I'm curious to know how the Department of  
22 Energy--these are all comments on Jeff Williams'  
23 presentation, by the way, just for your information--I was  
24 curious as to how the Department of Energy planned on working  
25 cooperatively with the State of Nevada when the State of

1 Nevada doesn't even want them here.

2           Also, I was curious as to whether or not the  
3 Department of Energy, Jeff Williams brought up the--or maybe  
4 it wasn't Jeff Williams, I don't really remember at this  
5 point--brought up the people tying themselves to railroad  
6 tracks in Germany to stop shipments, and I was curious if  
7 they were expecting any of that if they started to ship here  
8 in the United States, and how they planned on dealing with  
9 that as pertaining to safety and public confidence in the  
10 program.

11           Another question that I had, and I'm sorry, I  
12 really don't mean to be snide and cynical--well, cynical I  
13 can't help. On Kirk Lachman's Slide Number 8, the waste  
14 emplacement gantry, I couldn't help but thinking back on a  
15 Technical Review Board meeting we had in Pahrump a couple of  
16 years ago, when reference was made, and possibly I believe it  
17 was by Mark Peters, or, no, he actually commented on it,  
18 about the mechanism to remove damaged or compromised casks,  
19 he quoted it as being the world's largest whisk broom. So,  
20 I'm curious, is this the design of the world's largest whisk  
21 broom, or is this something completely new? Has this been  
22 developed yet? Is this just another, you know, little  
23 fabrication in the mind to make it look good on the  
24 presentations?

25           And the last thing that I have is actually a

1 comment, and it talks about aging facility functions.  
2 Section 141 of the Nuclear Waste Policy Act basically states  
3 that monitored retrievable storage, interim storage, shall  
4 not be located in the same state as a repository. It has  
5 nothing to do with licensing. And the only difference that I  
6 can see between interim storage and an aging facility is in  
7 the spelling of the word. A rose is a rose by any name.

8           Thank you.

9           ABKOWITZ: Thank you. That concludes our program for  
10 today. I just wanted to take a moment to thank the  
11 participants, both the planned presentations, as well as the  
12 comments from the public. I want to thank the Board and  
13 Board Staff and others that were involved in this. And I  
14 feel that we've learned a lot today.

15           We're going to convene, and I'd like to ask that  
16 the Board Staff and consultants and members meet in ten  
17 minutes in the Forenza Room, which is next door, and we'll  
18 start discussing what we've learned and where we're going to  
19 go with that.

20           But, again, thank you very much all of you, and  
21 enjoy your evening.

22           (Whereupon, the meeting was concluded.)

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