

UNITED STATES  
NUCLEAR WASTE TECHNICAL REVIEW BOARD

TRANSPORTATION & SYSTEMS  
PANEL MEETING

March 15, 1991

Albuquerque Hilton Hotel  
Colorado - Texas Room  
1901 University Boulevard, N.E.  
Albuquerque, New Mexico 87102

NWTRB MEMBERS PRESENT

DR. DENNIS PRICE, Chair, Transportation & Systems Panel  
NWTRB  
DR. MELVIN W. CARTER, Member  
DR. ELLIS D. VERINK, Member

SENIOR PROFESSIONAL STAFF

Dr. Sherwood C. Chu

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Round Table Discussion

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Dr. Dennis Price, Chair  
 Dr. Melvin Carter, NWTRB  
 Dr. Ellis Verink, NWTRB  
 Dr. Sherwood Chu, Senior Professional Staff  
 NWTRB

Bob Robison, DOE, Oregon  
 Robert Halstead, State of Nevada  
 Chris Wentz, New Mexico Radioactive Waste Task Force  
 Ron Ross, Program Manager, WGA  
 Robert Neill, Director, New Mexico EEG  
 Tom Ward, Senior Engineer, Westinghouse/WIPP  
 Rich Leonard, Senior Engineer, Westinghouse

Ronald Milner, DOE  
 James Carlson, DOE  
 Chris Kouts, DOE/OCRWM  
 Kathleen Grassmeier, DOE/YMPO  
 Gerald Boyd, DOE  
 Bob Spooner, DOE

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

2           DR. PRICE: Ladies and gentlemen, we'd like to begin. In  
3 just a moment, I'll give an opportunity for any from the  
4 audience who would like to make any comments. We indicated  
5 that last night, we would defer that until this morning, and  
6 then we will begin the round table.

7           This is informal discussion, giving opportunity of  
8 all concerned parties to make additional comments and to  
9 stimulate thinking. We would like to ask all of those who  
10 participate to speak directly into the mike once again, and  
11 because the microphones are separated, there's sometimes two  
12 to a mike. We'll ask, as you speak, to put the mike directly  
13 in front of you.

14           And when we do the round table, we will want to try  
15 to do it--even though it's informal--for the sake of the  
16 recorder, one person at a time, as much as is possible.

17           All right. Are there any comments from the general  
18 audience, please? Yes?

19           MS. GRUBE: Good morning, ladies and gentlemen. I'm  
20 Geraldine Grube from the National Academy of Sciences, and I'm  
21 the WIPP STOP officer.

22           I wanted to make one comment about safety. Before I  
23 joined the STOP at the National Academy of Sciences, I worked  
24 in aviation safety. At that time, I found out that Lufthansa  
25 Airlines had the best aviation safety record of all airlines

1 in the world. The one thing that distinguished this airlines  
2 from the rest of the airlines was that after every flight,  
3 each pilot was debriefed, and I thought something like that  
4 might help both the weapons people and the civil waste people.

5 Thank you.

6 DR. PRICE: Thank you very much for that comment. Such a  
7 debriefing could work in with the building of data bases that  
8 we've been talking about and suggesting, so appreciate that  
9 comment.

10 Anybody else now?

11 MR. BECHTEL: Thank you, Mr. Chairman. My name is Dennis  
12 Bechtel. I'm a plan coordinator for the Clark County  
13 Department of Comprehensive Planning in Las Vegas, Nevada, and  
14 we're responsible--my department is responsible for evaluating  
15 the issues associated with the civilian program.

16 I just had a couple of statements. One, I think  
17 this is a very positive couple days. I think any time DOE can  
18 learn from prior experience from other programs, I think it's  
19 good. I know there's been some discussion that, well, there's  
20 been a long lead time between the things that are going to  
21 transpire in the civilian program, but I think a lot of the  
22 procedures and methodologies that come out of things like this  
23 can be useful to the civilian program.

24 As you're doing your work and as DOE proceeds ahead  
25 in their planning, I would hope that they would realize that

1 what you're doing, while useful, when considering health and  
2 safety issues, these things have to be taken into  
3 consideration in a context that you're dealing with  
4 communities and people, and when you're talking about routing,  
5 when you're talking about safety, I think you're doing a lot  
6 of good things. I think there's also a perceptual angle that  
7 kind of has to be looked at in this program that's, rightly or  
8 wrongly, it's there.

9           So I think, you know, people make decisions based on  
10 what's going to be coming out of this program, so I think it's  
11 important that the things, the mechanical things are taken  
12 into a context of communities and people.

13           The other thing is, I was talking to one of my  
14 associates from Nevada this morning, that I think kind of came  
15 out of yesterday's session, was the fact that DOE should rely  
16 very much on local communities and state people, people who  
17 know their communities, who know the problems, and the  
18 emergency response needs. So I think that's something that's  
19 also important that, I think, really kind of came out of  
20 yesterday's discussion, but I would like to emphasize that.  
21 So that's all I have.

22           DR. PRICE: Thank you very much.

23           Anybody else?

24           (No audible response.)

25           DR. PRICE: All right. Let's begin, then, our round

1 table discussion, and I would like to begin it by giving DOE  
2 an opportunity to initiate our conversation by responding to  
3 what you heard yesterday, and so I'll just turn it over to the  
4 right-hand side of the table and let you go.

5       MR. MILNER: Thank you, Dr. Price. My name is Ron  
6 Milner. I'm the Associate Director for Storage and  
7 Transportation in the Civilian Radioactive Waste Program.

8           If I may, I'd like to introduce my colleagues. With  
9 me at the table here, to my right, is Jim Carlson. Jim is the  
10 Director of the Transportation and Logistics Division. Chris  
11 Kouts is Chief of the Transportation Branch, and Kathleen  
12 Grassmeier, who manages the transportation program at the  
13 Yucca Mountain Site Characterization Project Office. And  
14 behind me is Mike Conroy, who manages the operational planning  
15 within the transportation program, and Susan Smith, who  
16 manages the institutional aspects of the program.

17           I'd like to start by thanking the Board for taking  
18 this initiative to foster an exchange of lessons learned from  
19 the WIPP program. I think, as was indicated yesterday, there  
20 has been close coordination between the WIPP staff and the  
21 OCRWM staff, but I think the insights from the external groups  
22 that are involved in that process are very valuable to us, and  
23 to be sure, there are very valuable lessons to be learned from  
24 the WIPP project, and we intend to take advantage of that.  
25 There are, of course, many similarities in the program; also,

1 many differences. The waste form is different. I think the  
2 transportation problem--the routing, at least--is somewhat  
3 different, but nonetheless, many lessons to be learned.

4 I think one of the paramount things that I came away  
5 from yesterday with was an appreciation of the need for early  
6 involvement of involved parties in the process, and I think  
7 once our siting for an MRS is identified, a site is  
8 identified, and we can start more route-specific planning,  
9 then I think that that's a very good lesson we can take away  
10 from this.

11 DR. PRICE: Chris, do you want to make a comment?

12 MR. KOUTS: I could. There were a variety of issues that  
13 were discussed yesterday. One--there's so many, I don't know  
14 the format of our discussions, or whether or not you want to  
15 go through some of these issues in some detail.

16 DR. PRICE: Yes, of course. That's the purpose of this,  
17 is to exchange comments and ideas on the issues, and maybe to  
18 further define views.

19 MR. KOUTS: Well, I have one other manager above me here,  
20 and I don't want to exempt him from the process here. We do  
21 have a pecking order.

22 Jim, do you want to say anything first, before I  
23 would?

24 MR. CARLSON: Since I'm here and I don't want to fight  
25 for the microphone with you, I'll let you.

1 MR. KOUTS: Thank you, Jim, for that.

2 Some of the things that were alluded to yesterday--  
3 and I don't think we went into very much depth--we talked a  
4 little bit about, and I think the WIPP people talked a little  
5 bit about the type of coordination we have, and I'd like to  
6 just recite some of the mechanisms just so the Panel's aware  
7 of some of these mechanisms that we do have in addition to  
8 some that were mentioned yesterday.

9 Mike McFadden mentioned that I sit on the WIPP  
10 Transportation Task Force, which I do. That's a group of  
11 people, managers within the Department, that discuss issues  
12 that are raised within the WIPP program, and I'm allowed an  
13 opportunity, as part of that task force, to comment and  
14 participate in discussions in relation to those issues.

15 We also have a, as was mentioned yesterday, a WIPP  
16 Transportation Institutional Task Force, and that's where,  
17 basically, the--it's not a WIPP task force. It's more of a  
18 DOE institutional task force in the radioactive waste area,  
19 and there are four subcommittees that that's broken down into.  
20 There's a tribal subcommittee. There's an emergency response  
21 subcommittee. There's an issue resolution subcommittee, and  
22 there's a public information subcommittee. So what I'd like  
23 to project and have people go away with is that we do have a  
24 lot of mechanisms.

25 In addition to that, we're involved in an

1 interagency task force, along with Gerald Boyd, to deal with  
2 the recent passage of the HMT-USA and how that impacts  
3 emergency response planning for the Department and all the  
4 programs. There's a Transportation Emergency Planning  
5 Program, which Gerald, I'm sure, could go on at length about,  
6 that we participate in. There's the Federal Radiological  
7 Planning Coordination Committee that we participate along with  
8 WIPP on. We were at Transax. We did have people there. We  
9 watched that exercise with great interest, and we're learning  
10 very much from those types of exercises that the WIPP program  
11 is conducting.

12           We also have a great deal of mutual participation at  
13 meetings. We show up at the same meetings that the WIPP  
14 people do and that the WGA does, and we have our contractors,  
15 we have our staff there, and there are many, many meetings  
16 during the year that we're present at, so we do get a very  
17 good understanding of how the issues are evolving and how  
18 decisions are being made in that regard.

19       DR. PRICE: Chris, I do believe you go to a lot of  
20 meetings.

21       MR. KOUTS: I know. My wife does, too.

22           We also, in closing on this point, we've got a lot  
23 of people that have moved back and forth, if you will, between  
24 the WIPP program and our program. Susan Denny, who's my  
25 counterpart in the Office of Environmental Management and

1 Restoration, who Gerald is representing here, used to be--was  
2 actually the author of our institutional plan that was issued  
3 back in 1986, so I coordinate very closely with Susan on a  
4 variety of issues. There are contractors who have gone to the  
5 WIPP program from our program, who have an understanding of  
6 our program and we have contact with on a regular basis, and  
7 our field offices work very closely together.

8           So, although this wasn't gotten into in any depth--  
9 and I think we only touched the surface yesterday--I did want  
10 to, for the Panel's understanding, make sure that you knew  
11 that we're very mindful of what's going on in WIPP and we're  
12 learning a lot from it.

13           I have about twelve other things I could talk about  
14 in relation to specific issues if--one that I'd like to talk  
15 about--Dr. Carter, did you want to say something?

16       DR. CARTER: I had a question, Chris.

17           All the committees, and so forth, that DOE has, if  
18 we can restrict it now just to two things, the OCRWM program,  
19 and also the WIPP program, but how do each of those programs  
20 specifically relate to the states, for example? Do you have  
21 members on the committee? Do you have liaison with all the  
22 committees you're talking about as far as the states are  
23 concerned? They have organizations, obviously, that you could  
24 deal with, like the Western Governors' Conference and all  
25 this. Anyway, what are the relationships in those areas?

1 MR. KOUTS: Well, in that regard, as we briefed the Panel  
2 back in Albuquerque in August of 1989, our institutional  
3 program is a variety of groups that we do have involvement  
4 with from our perspective. There was some discussion here  
5 about WGA has an involvement with the WIPP program, and  
6 they're also involved in our CVSA activities, so we use the  
7 Western Interstate Energy Board. They're our cooperative  
8 agreement group and we get technical input from the Western  
9 Interstate Energy Board on issues that come up in the program.

10 One specific example would be when the cask design  
11 reports for the preliminary design were issued in April or May  
12 of last year, the Western Interstate Energy Board was the  
13 first group to give us comments. We got comments from them in  
14 June, very good comments. We've only received comments from  
15 three organizations to date on those cask designs; the Western  
16 Interstate Energy Board, which is a cooperative agreement  
17 group. We've received comments from the utilities last month,  
18 and just recently, we received the State of Nevada's comments.

19 So the mechanisms that we use are sometimes  
20 different, but even among the mechanisms, if you will, in the  
21 organizations, there's a lot of cross-pollinization. I think  
22 Ron Ross can talk about the location of the WIEB people to the  
23 WGA people in Denver. They're located in adjacent buildings,  
24 I believe. They're very close.

25 MR. ROSS: No, they're now next door.

1           MR. KOUTS: They're next door, and about four out of the  
2 seven WIEB people who sit on the WIEB panel for us in the  
3 corridor states, the initial corridor states, are the WGA  
4 representatives, also. So it's not as if the WIEB is a  
5 totally separate organization. There's a great deal of  
6 overlap between those two organizations. The WIEB  
7 organization is considered to be a little bit more technical.  
8 Those people are a little bit more technically-based than WGA  
9 people--and they can speak for themselves. They are generally  
10 more policy-based. So in that relation, in that specific  
11 instance we can talk about that.

12           The WIPP program uses the Southern States Energy  
13 Board, so we are planning on bringing on a northeastern group.  
14 That's not really an issue for the WIEB people. And for the  
15 midwestern states, we have Midwestern Council of State  
16 Governments.

17           DR. PRICE: You had an issue you wanted to bring to the  
18 front?

19           MR. KOUTS: Well, I found myself as somewhat of a  
20 detached observer in some of the discussions on full-scale  
21 testing, and I think that that's a question that you raised,  
22 Dr. Price, in relation to public perception. I think Mr.  
23 Halstead addressed that, and that certainly has been a comment  
24 that the State of Nevada has made, and if I could take just a  
25 few minutes to kind of walk through this issue, at least to

1 provide a perspective that the Department--and especially our  
2 program--has given this a lot of thought and that there a lot  
3 of different facets to the full-scale testing issue. If it's  
4 acceptable to the Panel, I've got a few thoughts that I think  
5 might be interesting.

6           It's kind of difficult to know where to start, but  
7 there are--as the Panel's aware, we have regulations in effect  
8 that I think the WIPP people talked about. Assuming you get a  
9 certification from NRC, it's kind of like the Good  
10 Housekeeping seal of approval, and it's a very difficult  
11 certification to receive.

12           There are very rigid requirements that we have to  
13 comply with, and there are very rigid design practices that we  
14 have to follow, and I think that's one of the lessons learned  
15 from WIPP, is that you've got to listen to the regulator and  
16 do the things that they want you to do.

17           In the case of the WIPP package, I think if you  
18 listened to Mr. Gregory yesterday, there was one key point  
19 that he made that I think you ought to recognize, and that's  
20 that they did not feel confident that they could predict with  
21 any reliability what that package would look like under a  
22 test. They felt it would survive, but they couldn't  
23 analytically predict what that deflection would look like,  
24 because it is a collapsible package. We are not developing  
25 collapsible packages.

1           As a result, the regulator--and this was the view of  
2 the regulator--felt that they wanted more confidence, and  
3 given the process that they were going through in the  
4 certification area, the NRC wanted to see full-scale testing.  
5 We meet with the NRC on a regular basis with our cask  
6 designs. Our cask designers--and those are public meetings.  
7 People can attend them. They're noticed. We have not  
8 received any indication from the NRC that they felt that, at  
9 this point in time, that we need to do full-scale testing.  
10 They're aware of the fact that we're planning scale-model  
11 testing, and they have no problems with that. So from a  
12 technical perspective, the NRC has not indicated to us in any  
13 manner that we need full-scale testing on our cask designs.

14           There were a variety of comments made by Mr.  
15 Halstead in relation to the innovative nature of our cask  
16 designs, and I beg to differ with Mr. Halstead in certain  
17 areas. One of the areas, specifically, is the use of depleted  
18 uranium. He mentioned that yesterday, and I was somewhat  
19 surprised that he did because depleted uranium as a shielding  
20 material has been used in casks in the past.

21           Now, I think you should be familiar, the IF-300 has  
22 it. If we were doing something innovative with depleted  
23 uranium, such as taking structural credit for depleted  
24 uranium--which we're not doing--I would agree with Mr.  
25 Halstead that that is an innovative approach. We are not

1 doing that. We are following the reg guides and we are  
2 following established practices in that regard.

3           In relation to the BR-100 and the borated concrete  
4 copper fin, thermal transfer device, that has been used in  
5 casks in Europe. There's a good experience that's a patented  
6 device that Robattelle has. That's a subcontractor to B&W.  
7 There is a lot of experience with that.

8           The most innovative nature of our cask designs from  
9 my perspective is the fact that we are--for the PWR versions  
10 of our casks, that's the GA-4, and the BR-100 for the PWR  
11 basket, we will be seeking burnup credit from the NRC, and we  
12 have been working very closely with the NRC on this issue.  
13 And that's not something that a full-scale test is going to  
14 verify.

15           The establishment of criticality control within a  
16 cask is done on an analytical basis. It's not done through  
17 drop tests or fire tests, and we have a rather large program  
18 underway here at Sandia, and Mr. Sanders here, is in the  
19 audience, Tom Sanders can talk at length about it. It might  
20 be a subject of a future Panel meeting with the Board to get  
21 more technical information on the area. But in the area of  
22 burnup credit, I don't think there's any question that a full-  
23 scale test in that regard is not going to demonstrate non-  
24 criticality. It is done through an analytical exercise of  
25 nuclear experts, if you will, to demonstrate it.

1           And I think it needs to be also expressed a little  
2 bit as to what we really mean by burnup credit. The NRC has  
3 historically taken the assumption that we are putting fresh  
4 fuel in our casks, and fresh fuel does not need to be moved  
5 around in casks. This can be moved around in trucks, without  
6 any shielding, and the reason for that is it's not very  
7 radioactive at all. It only becomes radioactive, highly  
8 radioactive, after it's been through a fuel cycle, or it's  
9 been in the reactor and been basically involved in a chain  
10 reaction.

11           The whole issue of what we're trying to do is to  
12 move the NRC from a position of what we feel is not a real  
13 world assumption. None of the fuel that we're going to be  
14 moving is fresh. It's going to be burned at least for ten  
15 years. It's going to be cooled at least for ten years. It  
16 will have gone through one fuel cycle within the reactors.  
17 The amount of reactive material in those assemblies has been  
18 severely reduced, and all we're suggesting to the NRC is that  
19 in criticality calculations, we want to take credit for some  
20 of that reduction in reactivity. We're not asking for all of  
21 it. We're asking for some of it.

22       DR. CARTER: Chris, let me clarify something in my own  
23 mind. You say they consider fresh fuel. This is fuel that's  
24 never been in the reactor, or has it just been in the reactor  
25 and right out again?

1 MR. KOUTS: No. This has never been in the reactor.

2 DR. CARTER: Never been in the reactor. Unused  
3 completely?

4 MR. KOUTS: That's correct. That's a total conservative  
5 viewpoint on the part of the NRC. It's one that we feel is  
6 not what we believe to be reflective of the type of fuel that  
7 we're going to be moving.

8 Now, there is an issue with administrative controls,  
9 and Mr. Halstead had indicated that he was concerned about  
10 administrative controls. And the NRC is concerned about this  
11 issue, too, and we've done work--and Mr. Sanders can talk at  
12 length about it. We have gone through reactor records and  
13 searched and determined, tried to determine whether or not,  
14 indeed, the administrative records of assemblies within  
15 reactors are, indeed, reflective of the actual burnup that  
16 they have, and we find a very, very high correlation. But the  
17 NRC still is, in our meetings with them, is not totally  
18 convinced that administrative controls are appropriate, and  
19 what our recent discussions with the NRC on this issue have  
20 been, have been essentially to look at a potential measurement  
21 that's made prior to transport to verify, indeed, that the  
22 burnup that that assembly had in the pool is, indeed, what's  
23 coming out, and then it's a question of what type of  
24 measurement device do you use, and how intensive the  
25 measurement is, and so forth.

1 DR. PRICE: Excuse me. Does the NRC have a notion that a  
2 fresh fuel assembly might be put into a cask?

3 MR. KOUTS: Well, they're concerned that an error in  
4 loading might occur, also, and on the part of the regulator, I  
5 think in terms of the historical position of the NRC--and they  
6 are the real agency out there, that's charged with protecting  
7 the public--I think that that's a reasonable viewpoint, and  
8 they want to be assured in some manner that, indeed, the fuel  
9 has been burned, and burned to the levels that we want to take  
10 credit for in our cask designs.

11 Even if we don't receive burnup credit in our casks,  
12 we will still have capacities that are in excess of what we  
13 see every day. I should mention that the existing casks that  
14 are in the present inventory in this country were designed for  
15 180-day cooled fuel, which means a very short cool time out of  
16 the reactor, and the main reason that we can design casks for  
17 such high capacities is not really burnup credit, it's because  
18 we're designing for a different baseline. Our baseline is  
19 ten-year cooled, 35,000 megawatt days for PWR's, 30,000  
20 megawatt days for BWR's.

21 I would argue that if you took those same  
22 assumptions fifteen years ago and designed to the standards  
23 that existed fifteen years ago, you would have higher capacity  
24 casks on the road today. But the purpose of those casks was  
25 to transship newly removed fuel from reactor sites, and that's

1 why we see such increases in capacity.

2           To close on this issue, let me make one suggestion  
3 to the Panel, also. You're planning a trip later this year  
4 over to England. I suggest you meet with the nuclear electric  
5 people, the old CEGB, and talk to them about their  
6 demonstration tests, their Operation Smash Hit, and get their  
7 perspective as to whether or not they felt that that helped  
8 their shipping campaigns.

9           These were done on casks that basically were being  
10 used, or flasks, if you will, that were being used in their  
11 inventory, and get their perspective. We're getting an  
12 engineering perspective, I think, from Mr. Halstead and Mr.  
13 Robison that do the regulatory tests, and from an engineering  
14 perspective, I agree with you. I think that those tests are  
15 repeatable. You can translate them very well, but there is  
16 also a public perception issue here, and how you deal with  
17 that is sometimes difficult.

18           Let me close in saying this: The position that  
19 we've taken in relation to full-scale testing is that we,  
20 right now, have no plans to do full-scale testing on our cask  
21 designs prior to certification. We will consider full-scale  
22 testing after certification, with, perhaps, one of our  
23 prototypes. We have allowances made in our cask design  
24 contracts for the construction of an additional prototype. We  
25 could have that prototype made and do a demonstration, either

1 at the regulatory levels or some other type of test.

2           Our perspective was that--and what my engineers tell  
3 me and what my people tell me--is that the benefits, the  
4 technical benefits to be gained from full-scale testing for  
5 the types of casks that we're developing are not great, and  
6 the costs are very high. And the delay in the program would  
7 be substantial.

8           If we did it at this point--and we're looking at a  
9 '98 shipping date--I think you would see that we would have no  
10 other course but to use existing shipping casks that are out  
11 there today, that have been certified to previous standards  
12 than the ones that we're dealing with now.

13           We'd like to use our casks. We believe that our  
14 casks are very soundly designed, will be soundly designed. We  
15 have confidence they'll be certified, and we're going to do a  
16 great deal of scale-model testing. For the record, we are  
17 developing half-scale models for the GA casks, and we're doing  
18 a quarter-scale model for the BR-100, but I also hasten to add  
19 that I'm right now at a loss to identify any facility in this  
20 country where we could do those types of tests. Sandia  
21 doesn't have the capability to drop a 100-ton cask. We'd have  
22 to look around and hunt around to find a facility that could  
23 do it.

24           DR. PRICE: What about the issue of full-scale testing  
25 with respect to the fire tests?

1           MR. KOUTS: That's an interesting point, and the laws of  
2 physics work fairly well for the structural considerations.  
3 However, from a thermal perspective, they don't. But I would  
4 also hasten to add that the thermal aspects of the designs of  
5 these casks are not really the cutting edge. They are not the  
6 biggest problem, and you can very, very well model thermal  
7 outflow and inflow into the casks, and we have a very high  
8 confidence in that.

9           The real challenge of these cask designs is in the  
10 structural area, and that's the main purpose of the tests, is  
11 to basically verify that our analytical assumptions and our  
12 analytical calculations are appropriate, and also get some  
13 real data on some of our safety factors, as was mentioned  
14 before.

15           So, again, the thermal characteristics of the casks  
16 are not the most difficult ones to deal with, and as a result,  
17 we don't feel that we would gain that much from a full-scale  
18 test. We have very high confidence in our thermal analyses.

19           DR. CARTER: Has one of these casks, over the past, ever  
20 experienced a fire in actual operation?

21           MR. KOUTS: I'm unaware of any.

22           DR. CARTER: Anybody have any information? I don't know  
23 of any, either.

24           MR. HALSTEAD: I'm pretty sure there are none.

25           DR. PRICE: We ought to get this left-hand side here.

1           MR. HALSTEAD: Yeah, I don't want to make this a long,  
2 protracted dialogue. With all due respect to the past  
3 discussions Chris and I have had on these issues, I have to  
4 say there are a lot of people experienced in cask design,  
5 including some people who've recently taken casks through the  
6 NRC certification process, who would disagree with the  
7 characterization that the designs and materials are innovative  
8 and, you know, in my opinion, you can make a pretty good  
9 argument for either side of this.

10           One of those people, David Snedeker, is one of the  
11 people who has assisted us in our cask design reviews and in  
12 the testing report. It's a very slim report. It's only the  
13 first thing we've done in this area, and I would say, in  
14 general, it would facilitate these discussions if both the  
15 Department and the State of Nevada put more of their resources  
16 into publishing things on the cask testing issue that are not  
17 just philosophical arguments for a position, but, for example,  
18 the literature is very lean on just good, honest descriptions  
19 of what was involved in the Operation Smash Hit project in  
20 England, or frankly, as far as I'm aware, there's not a good,  
21 straightforward discussion of the Trupact-II testing program,  
22 and maybe you have something in the process. I was looking  
23 for some of the WIPP people. I don't see Phil's up here.

24           But one of the problems we have is that most of the  
25 testing literature is on specific test results or approaches

1 to testing, and hasn't really dealt with the broader range of  
2 issues; for example, costs of testing, which often comes up as  
3 an issue. It seems to me, from my perspective, any time I've  
4 made a good case for testing, the answer that always comes  
5 back is, "Yeah, well, we agree with that, but it'd be too  
6 expensive," and frankly, we can't really answer that  
7 definitively.

8           Let me just make a few specific responses. Of  
9 course, I'm aware of the use of depleted uranium for shielding  
10 in the IF-300. The question in the GA-9 and GA-4's, and  
11 really, I think, in general with possible future use of DU for  
12 shielding is--I don't think these are the only designs we're  
13 going to see over the next ten years. The concern that's been  
14 expressed to me in discussion with the cask fabricators is  
15 that there is very limited experience in this country  
16 fabricating the actual full-scale cask components, and we're  
17 not sure that there is an adequate basis for defending scale-  
18 up assumptions, and one of the specific concerns that we have  
19 is how a full-scale cask that relies on depleted uranium  
20 shielding, how that'll hold up in the impact test.

21           Now, it's possible that that can be resolved without  
22 full-scale testing, but that's a specific area where we think  
23 there isn't sufficient past experience. Similarly, with the  
24 borated cement copper fin structure that Babcock & Wilcox is  
25 using, first of all, they haven't provided us with the

1 documentation on all that great French experience. Perhaps  
2 when we see that and talk to Vames and Young, the two people  
3 who have taken over the project from Paul Childress and, you  
4 know, they've said they will try to provide that information.  
5 It was not in the preliminary design reports and, in fact,  
6 the preliminary design report on that cask was pretty lean.

7           Nonetheless, there are claims that have been made  
8 for the thermal performance of a full-scale shell made from  
9 those materials that we think, again, because there is not the  
10 past record, at least in this country, with the testing,  
11 there's a good case for a specific application of a full-scale  
12 thermal test.

13           Now, as to why we are concerned about these types of  
14 issues, let me relate this back to the administrative controls  
15 issue. I don't want to get into a large discussion of the  
16 burnup credit issue. I, of course, agree with Chris that  
17 full-scale testing isn't going to have--doesn't have any  
18 connection to the burnup credit issue. There may be some  
19 issues associated with basket performance, but that's a  
20 separate issue, and the issue, really, there is whether you  
21 want to have a cask design be contingent upon administrative  
22 controls.

23           And I, frankly, don't have a problem with that,  
24 because for years I've argued that the way to resolve some of  
25 these questions about the adequacy of the NRC's performance

1 standards is to impose administrative controls on the use of  
2 the casks. If the rail casks are only going to be shipped in  
3 dedicated trains, operating under special passing protocols,  
4 under 35 mile an hour speed limits, then you've gone a long  
5 way towards resolving my concern about cask performance and  
6 the need for full-scale testing.

7           So I find it kind of interesting that after years of  
8 rebuttal from DOE, the NRC, and the industry that it's an  
9 unwise thing to design a cask that requires administrative  
10 controls as a condition of operation, that now, because of the  
11 pressure to increase the payload in the cask, all of a sudden  
12 I've got believers in administrative control on the other  
13 side. But that's okay. I really think that the burnup credit  
14 issue should be one that's resolved to the NRC's satisfaction.  
15 If the NRC says that you've got burnup meters that they have  
16 confidence in, or that the additional worker exposures are  
17 acceptable--I guess what I'm saying is, I think we can accept  
18 the burnup credit issue. I mean, I know we're getting far  
19 afield in discussing that. We probably need a separate issue,  
20 a separate meeting on cask design where we talk about these  
21 issues.

22           I do think, though, that the--and I don't want to  
23 say it's public relations, but the public confidence issue  
24 is very much worth considering, even though I think there are  
25 technical reasons why full-scale testing should be followed,

1 and I'll tell you how strongly we feel about this thing. It's  
2 certainly not an issue that we're going to give up on. We  
3 have pretty tight resources this year, as a result of some  
4 Congressional decisions, so we can't do all the work we'd like  
5 to do, but we're--

6 MR. KOUTS: So do we, Bob; so do we.

7 MR. HALSTEAD: And I do appreciate that, Chris. So it's  
8 going to probably take us two or three years to do some of the  
9 things I'd like to do this year and be done with them, but we  
10 are going to try to develop some cask testing protocols that  
11 would give us a basis for some cost estimates. We've already  
12 done some investigation you'll find in the back of the paper  
13 that Snedeker did, an evaluation of test facilities in the  
14 U.S. and Britain. It is true, it's a real problem finding a  
15 place that can drop a 100-ton rail cask. I think Winfrith is  
16 the only place that comes close, and I'm not sure that they  
17 could drop one that was loaded to simulate its actual travel  
18 weight.

19 Nonetheless, State of Nevada will continue to pursue  
20 this, and if NRC doesn't require it, it will be difficult, and  
21 if DOE doesn't voluntarily agree to it, but I'll be honest  
22 with you, we haven't ruled out buying a cask of our own--if no  
23 one else will test it--and sending it to Winfrith and asking  
24 the Brits to test it for us, and it's an issue that won't go  
25 away, and so it would be good if we could find a reasonable

1 way to resolve it.

2           Perhaps you can provide documentation or read the  
3 scale-model tests, or, for example, perhaps we could work out  
4 some agreement with the people at Lawrence Livermore lab. You  
5 know, we've had some very interesting discussions that Woody  
6 was witness to over the modal study and its application to  
7 Yucca Mountain, and one of the tantalizing things that came  
8 out of that discussion is that a lot of the concerns that  
9 states have about the ability of casks to survive accidents  
10 more severe than those assumed in the regulations might, at  
11 least, be bounded by our ability to use the scan system and  
12 the expertise of people like Larry Fisher and C.K. Chu.  
13 Unfortunately, they're not available to us because their  
14 relationship with the NRC as a technical support person  
15 precludes their being available for some of these discussions.

16           So there are a number of possible avenues short of  
17 full-scale testing that we might pursue to resolve some of  
18 these issues, but we're by no means convinced that full-scale  
19 testing won't be required.

20           MR. KOUTS: I think an important point to be made here is  
21 that when we hand a safety analysis report to the NRC, it is a  
22 public document. There is a docket that's established, and  
23 all parties interested in the certification of that design can  
24 participate and provide comments on it for the NRC to  
25 consider.

1           And as I've told Mr. Halstead on many occasions, any  
2 information that he has, and so forth, needs to be brought to  
3 the attention of the regulator so they can assess it and make  
4 their own judgments in terms of the technical positions that  
5 are suggested, and we support that process. We think it's a  
6 very positive one. We think it gives additional credibility  
7 to the designs, and we encourage any interested parties to  
8 participate in that process.

9           MR. HALSTEAD: We plan to be full party participants.

10          MR. MILNER: Let me make one final comment. Your points  
11 are well taken. In a cask development program, there's really  
12 two issues you have to deal with; the safety and  
13 certifiability, if you will, of the cask, and the public  
14 confidence issue, and I think we recognize that both need to  
15 be dealt with in some appropriate manner.

16          MR. ROBISON: Mr. Chairman, a question for the  
17 Department, then a comment, if I might.

18                 To make sure I understand your position clearly,  
19 what you're saying is that you do not now plan full-scale  
20 tests, but would consider full-scale tests?

21          MR. MILNER: We have no definite plan at this point in  
22 time to conduct full-scale tests. However, there is provision  
23 in our program that we could elect to do that.

24          DR. PRICE: And right now, your position is after  
25 certification.

1 MR. ROBISON: Yes, that after certification, you would  
2 perform the full-scale tests, right.

3 MR. HALSTEAD: Could we just clarify one thing, Chris?  
4 My understanding is that--because I know there have been  
5 changes in the vendor, in the contracts for the casks--is  
6 that, is it still the case that General Atomics and Babcock &  
7 Wilcox are to deliver two full-scale prototypes at the end of  
8 the program?

9 MR. KOUTS: We basically--the costing of the contract  
10 includes a second prototype. That's an option on the part of  
11 the Department should we elect to take it. Our plans are that  
12 we would definitely have one prototype developed, but we do  
13 have the option to have an additional one developed if we  
14 choose. So we have a provision in the contracts that will  
15 allow us to do that, but that's an option that we have to  
16 elect.

17 MR. HALSTEAD: If I could make just one quick lessons  
18 learned comment before we move on from this, on the issue of  
19 the intent of tests and the documentation of tests, and the  
20 use of, say, video of tests in public education and public  
21 relations programs, I think there's a real important lesson to  
22 be learned in the Trupact testing, which I would counterpose  
23 to the Operation Smash Hit experience in Great Britain, just  
24 to give you a sense of what the response of the State of  
25 Nevada would be.

1           If we feel that we see public education that we feel  
2 is propaganda--and, you know, we're very concerned about the  
3 way the old Sandia crash films are still used without an  
4 adequate discussion of what their intent was, what the  
5 limitation--what the successes of those tests were, and what  
6 the limitations frankly acknowledged by Rich Yoshimura and Bob  
7 Jefferson, if you read the reports on the tests, are. We  
8 would hate to see that type of public education/public  
9 relations product come out, and I can guarantee you we will  
10 spend resources to counter it in kind.

11           The type of public education that we feel is useful  
12 and valid, and that we can all agree on is the kind of public  
13 information that I think Tom Ward is going to develop for the  
14 WIPP program, based on the Trupact testing, where he can  
15 actually show honest, if not spectacular, footage of  
16 regulatory compliance tests, and I really think that the  
17 documentation of those tests is going to go a long way towards  
18 resolving the concerns in a fully honest and constructive  
19 manner of public officials and the immediate public I'm most  
20 concerned with right now, the emergency responders, and people  
21 who are actually directly involved in the transportation  
22 system.

23           Like I say, I don't know that we have any scientific  
24 basis for predicting, you know, what the impact on the general  
25 public of these types of materials is, but from a non-

1 scientific, speculative position which I have on it now, I  
2 think there's a real advantage in having test footage that was  
3 conducted under regulatory conditions, and that we all agree  
4 is valid. I think that is a powerful statement, and will not  
5 engender counter-propaganda from people who are--I mean, it  
6 may from some groups who, you know, for whatever reason, don't  
7 want to accept those results, but I would to the extent that  
8 we use documentation of testing in public outreach, public  
9 education things, that that's the approach we take. I think  
10 that's a real important lesson learned here.

11           And I'd even say the same thing as far as the  
12 documentation of your scale model testing. I think there's  
13 great value in educating the public, you know, on the range of  
14 tools that are available to a cask designer to meet the  
15 regulatory concerns.

16       MR. MILNER: I think I fully agree with you on that one.

17       MR. WARD: Tom Ward here. Is my microphone on there?

18           Yeah, I think one thing we're missing--and I'd  
19 submit to Gerald that we all show the Trupact testing video,  
20 and the comment was made yesterday about the train crashing  
21 into the cask. I wish Phil Gregory were here to give me the  
22 exact specifics, but to paraphrase what I've heard him say in  
23 the past, that Trupact, in the 30-foot drop test, experienced  
24 up to 100 G's. Now, the rail cask, or the deck crash, I  
25 believe, although it's a lot more spectacular if things go

1 flying everywhere, only experienced something in the  
2 neighborhood of 30, and I submit that we go take that Trupact  
3 test video we have now, pull back all copies, overlay--give  
4 the lead to that rail crash test as opening footage, and  
5 explain the fact that it's, although more spectacular, it only  
6 experienced a third, and then go into--and show the  
7 documentation and give the specifics for that Trupact test  
8 where it hits a 100 G's. Let the world know that there is a  
9 difference.

10 MR. KOUTS: Tom, I don't want to disagree with you, but  
11 when I was over in Europe, in talking to some of the people in  
12 Britain, their perspective of the impact of that, or the  
13 comparison of that test to a 30-foot drop, was it was about 85  
14 per cent of a 30-foot drop. I hadn't heard a third figure  
15 before, but what I'd heard is, based on their calculations, it  
16 was about 85 per cent of the 30-foot drop. So, you know, I  
17 think there are differing opinions as to what the actual  
18 stresses in that are.

19 MR. WARD: Well, whatever. Someone should go back and  
20 look at the test results and compare the changes.

21 MR. KOUTS: And that's the difficult part with those  
22 types of tests, and why, when you do a controlled experiment  
23 with a 30-foot drop, you can understand the forces a lot  
24 better than trying to construct something that is perhaps more  
25 spectacular, but not translatable, if you will, or easily

1 translatable into something that technically you can  
2 understand.

3 DR. CARTER: Well, I think a point that everyone should  
4 keep in mind is that if you do this sort of thing, I think you  
5 need to be very positive about the tests that you're doing,  
6 and the reasons for them, and so forth, and not get into a  
7 contest of our tests are good and these tests are bad. This  
8 is just going to confuse the public and others even more if  
9 you do that sort of thing.

10 MR. HALSTEAD: Yeah, I agree with that comment. I don't  
11 have a problem with the use of the Sandia footage that Tom has  
12 suggested, but I'm not honestly sure how much that improves  
13 public confidence. I think something like putting graphics in  
14 your video that explain the equivalency in terms of a mile-  
15 per-hour crash into a brick wall of the 30-foot drop on an  
16 unyielding surface might be a better way to get that point  
17 across.

18 I don't know. Like I said, we're just beginning to  
19 try to work out the details of this, and I hope it's one of  
20 the things we can exchange. But the point I'd make again,  
21 that perhaps both the Department and the State and the TRB  
22 might work on is the lack of literature on this issue that  
23 addresses the kind of issues we're talking about today. I  
24 don't know of a single monograph or article that I could point  
25 to that objectively reviews the history of cask testing, and

1 addresses issues objectively, for example, that have been  
2 debated between Bob Jefferson and Conan Furber over, you know,  
3 exactly what was the speed of the train cell when it hit the  
4 cask in the Sandia test, you know. Was it going 60 miles an  
5 hour or 20, and I think, really, that maybe we need Dr. Price,  
6 among your graduate students or someone, we really need to  
7 encourage someone to--someone who's not involved as an  
8 advocate of a position--to look at that whole question. It's  
9 an amazing gap in the literature, and maybe then we'd have  
10 some more neutral basis for resolving some of these questions.

11 DR. PRICE: Mr. Neill?

12 MR. NEILL: I recall one of the German films on safety  
13 and transportation, and it showed the locomotive striking a  
14 brick wall, and I asked the guy about it, and I said, "Gee,  
15 that looks like Albuquerque, the Sandia test," and I asked,  
16 "Well, do you tell the German people that this film on the  
17 German cask was in the U.S.?", and he said, "No, we don't tell  
18 them that."

19 One general point I'd like to make--and this relates  
20 to fundamental credibility, you know, the plans for  
21 demonstrating compliance for the shipping cask. As we all  
22 know, the WIPP project is ahead of the High-Level Waste  
23 project, and the plans to bring waste--and the Secretary has  
24 given a high priority and Leo Duffy's been making statements,  
25 you know, on bringing waste as early as June, and did you hear

1 the details regarding the certification of the RH-TRU shipping  
2 cask yesterday, with the schedule, and the plans for providing  
3 the SARP to NRC, and the mechanisms to place copies of the  
4 SARP in the public document rooms throughout?

5           Well, I didn't hear it, either, and there is a point  
6 on that, is that here, after 13 years, and we've known we want  
7 to bring one-third of the contact handled wastes, which are  
8 remote handled, we still don't have anything to throw on the  
9 table here.

10           I'd like to make one general observation, though,  
11 and that is, my understanding of the certification process  
12 that NRC goes through, whether it's a federal agency  
13 requesting certification of a shipping container, or in the  
14 private sector, there are two fundamental routes you can  
15 pursue in assuring or demonstrating to NRC that the container  
16 will fulfill the requirements of 10 CFR 70, and one is through  
17 an analytical method, and it's very difficult to try to prove  
18 that the leakage rates are very low for both normal  
19 conditions, as well as for accidental conditions, to go  
20 through an analysis and convince people that your conclusion  
21 that the rate is that low is good.

22           And the other mechanism is to do it through testing,  
23 and one can have these very sensitive helium leak detectors to  
24 prove that you're less than--I forget the number offhand, but  
25 it's at  $10^{-5}$ , I think, of a leakage rate.

1           But one interesting thing. If you go down either  
2 path, you're caught in certain pitfalls there. For example,  
3 when DOE subsequently realized in the fabrication of the  
4 Trupact shipping containers in Carlsbad that the first 15  
5 units didn't quite meet the requirements for the thickness of  
6 the walls that, at the meetings with NRC in Washington, the  
7 DOE contractor said, "Well, let me go through an analysis to  
8 show you that using a conventional thickness of a cylindrical  
9 pressure vessel, that the thickness was still adequate," that  
10 the NRC approach was, "Hey, wait a minute. You've depended  
11 upon testing to demonstrate compliance. Now, if you really  
12 want to show that this is okay for these 15 units, you're  
13 going to have to test them. We're not going to change horses  
14 in midstream here. We're not going to use partial testing and  
15 partial analyses," so there is a danger no matter which route  
16 you go down, eventually, that you can get into a problem in,  
17 let's say, in testing, where they'll say, "Well, this is  
18 inconclusive. We better do another one, and another one," and  
19 so you do have some very real problems of cost and time and  
20 delays, and that's something, I think, that needs to be faced  
21 up to squarely, that like you buy the whole package, if you go  
22 with analysis or if you go with tests.

23           MR. HALSTEAD: Yeah, that's a lessons learned from the  
24 Trupact-II testing that, I think, maybe didn't get fully  
25 discussed yesterday, but--and again, I know Phil isn't here,

1 but my understanding on the thermal test--and this was also in  
2 relationship to the O-rings--was basically that it took four  
3 Trupacts to do that full sequence of testing, learning from  
4 the analysis, feeding the lessons learned back into the design  
5 and retesting, and I am fully aware of and troubled by the  
6 possible implications of a reliance on the testing approach.

7           You know, I don't want to sound like I'm more  
8 concerned with the dollars than with proving the safety, but  
9 there is a point, very quickly, where the costs do become  
10 very--it's one thing if we know that under contract we're  
11 going to have two prototypes to work with, and you need one  
12 for operations testing and we'd like to roast one. The  
13 problem is, if, in the process of testing that first one, we  
14 find things that need further testing that may involve another  
15 cask or two, I acknowledge that's a problem, and that's,  
16 again, one of the benefits for us of the WIPP program having  
17 gone. We have a recent experience documented beyond belief.  
18 I don't know what the final SARP was, Bob. I think I worked  
19 through the first 4,000 pages of it, but it was an awesome  
20 safety analysis report on the Trupact-II.

21           As I understand it, largely required, even though it  
22 wasn't a regulatory--required by the NRC that the amount of--  
23 that, in fact, the initial decision to do full-scale testing  
24 in the Trupact-II program was to speed up the certification  
25 process, and to, in effect, have less--to more immediately get

1 to that comfort level we were talking about and, in fact, as I  
2 understand it, just the opposite occurred; that the NRC people  
3 involved in that particular program, the more they saw in the  
4 thermal analysis and the O-ring, the more they wanted to see.

5           So, again, there are some, from our standpoint, I  
6 think, some really significant lessons learned. I'm glad  
7 neither OCRWM nor the State of Nevada had to pay for those  
8 lessons, because I understand it was fairly costly.

9           DR. CARTER: I wonder, Mr. Chairman, I'd like to ask if  
10 either Oregon, New Mexico, or the Western Governors'  
11 Association, as well as WIPP--restricted at the moment to  
12 those four--have any particular advice based on WIPP  
13 experience so far that they'd like to offer the OCRWM folks,  
14 based on that experience that you've had. This is a good  
15 opportunity to either raise issues or give good cogent advice.

16           MR. WENTZ: I believe one observation or experience I'd  
17 like to relate about the Trupact-II full-scale testing is you  
18 can always get into a debate on how far we should go with  
19 programs to address public perception issues, but I think as  
20 most of us realize, that in almost any of these issues dealing  
21 with nuclear waste disposal, nuclear power, that in so many  
22 instances, public perception is actually reality, and I'll say  
23 from my personal experience, I had the opportunity to go out  
24 and witness all the Trupact-II testing. To DOE's credit, they  
25 invited the media, independent reviewers, members of the

1 public, and for those of us who had to go out and deal with  
2 the public and relate what the DOE program was as far as  
3 transportation, safety, testing, NRC certification, for me,  
4 personally, it was invaluable to be able to say that I had  
5 witnessed these tests. I understood what the testing  
6 procedures were, and relate that to the public and say it in  
7 full honesty, that I felt very confident after it had received  
8 that NRC certification, that I felt that they had a very good  
9 package and had gone beyond what the regulatory requirements  
10 were, and it did pass the test and everything. And I do think  
11 that that is a--this whole issue of public perception and  
12 building public confidence in this particular arena is a very  
13 significant one that I think should not be discounted.

14           And I think you can always get into these arguments  
15 about costs and benefits, but when you look at some of the  
16 benefits over the long term, this public confidence issue can  
17 run up quite a bit as far as costs. Lack of public confidence  
18 can run up to millions of dollars and hundreds of millions of  
19 dollars if you don't address that issue, and I think that's a  
20 very important lesson to be learned that I think OCRWM should  
21 take note of.

22           MR. ROBISON: Mr. Chairman, from the perspective of the  
23 State of Oregon, I think it's important to understand the  
24 nature of the problem we're looking at here in terms of public  
25 confidence.

1           It's a very sophisticated group of people who are  
2 doubting their government's and their institutions' ability to  
3 handle nuclear waste safely. They know very clearly the  
4 difference between public relations and sound engineering and,  
5 if you will, detailed attention to safety plans.

6           In Oregon, we have chosen recently to pay our  
7 attention, to use the time we have available on nuclear waste  
8 transportation issues to focus on the TRU waste shipments to  
9 WIPP, because we see those as the first shipments, and right  
10 now, the most important.

11           I must say that I'm not a cask engineer. I also  
12 haven't studied in detail the certification process, and we've  
13 also not been looking carefully at the High Level Waste  
14 Program. I am, however, a person that finds myself having to  
15 interpret what the engineers and what the certification  
16 processes say, and explain that to governors--to my governor--  
17 to our citizens advisory groups, and to our state legislators.

18           From what I've heard this morning, that the  
19 Department does not plan to use full-scale testing as part of  
20 the certification process frankly comes as a surprise to me,  
21 and a bit of a shock. I guess that would be very, very  
22 difficult for me to explain why they don't plan on doing it to  
23 the audience that I'm responsible to, to making this  
24 interpretation and making this bridge.

25           Let me say one more time that these are

1 sophisticated people. They understand the difference between  
2 public relations testing and certification and engineering  
3 testing. I would recommend that the Department seriously  
4 consider full-scale testing as part of the certification  
5 process. It'd make my job a lot easier.

6 MR. KOUTS: Could I ask a question that would certainly  
7 be helpful to me?

8 Let's assume that we did do full-scale testing, for  
9 a moment, during the certification process, and we established  
10 the designs were fine. And then maybe we're going to ship  
11 seven years from now. There will be a concern on the part of  
12 the public about the safety of these designs, and the question  
13 I would ask you is, would a test seven years ago on a full-  
14 scale Trupact, assuming shipments are going to happen today,  
15 be satisfactory to your constituency, if you will, from a  
16 public perception standpoint, or are we really talking about,  
17 no, not just full-scale testing now, but also full-scale  
18 testing on a production model prior to shipment to demonstrate  
19 that, indeed, the production model that we're making is  
20 similar to the one that we tested during the certification  
21 process, which was a prototype and instrumented and everything  
22 else?

23 I mean, are we talking about--when we deal with  
24 public perception, I mean, my sense is that--and I'm an  
25 engineer and supposedly engineers know nothing about

1 institutional issues, but just speaking as a human being, I  
2 would--a test like that, to me, would mean more on a cask that  
3 DOE or whatever entity planned on using real soon, and the  
4 testing of that cask and the compliance of that cask with the  
5 regulations would have more of an impact on me, than a test  
6 that occurred seven years ago during a certification process,  
7 when the NRC was looking at it as a technical issue.

8           And I need your input, you know, to give me some  
9 insight as to what your view is on that issue.

10          DR. PRICE: I've heard some suggest that what is needed  
11 is a lot sampling approach to the production units, and so  
12 every so many that come off the line, you'd pull one and do  
13 full-scale testing.

14          MR. HALSTEAD: Yeah. We're specifically responsible for  
15 making that recommendation, not for more than one, and we're  
16 not, again, sure exactly what the details would be. But we've  
17 argued that some method for picking one of the--I mean, this  
18 is the whole question of testing a prototype as opposed to  
19 testing a production model and, you know, the assumption is  
20 that the prototype is extraordinarily carefully produced  
21 because a lot of money is riding on its acceptance.

22           Let me just say from the credibility standpoint, you  
23 know, it's possible that testing a production model nearer the  
24 time of shipment might have more impact on the public;  
25 however, I would make another argument for the benefit of

1 doing the testing at the certification stage, and that is, I'd  
2 also see it as a very useful bench-marking exercise.

3 Remember, the issue came up yesterday of testing versus  
4 analysis, and the way regulators look down the road if, in  
5 seven years, you need a design change, and, you know, what  
6 does that mean if you've based your original certificate on  
7 testing as opposed to analysis.

8           The reason that I see testing as a supplement to  
9 analysis is exactly the kind of issue I'd be anticipating,  
10 that if you tested, if you satisfactorily tested that cask  
11 during certification, presumably you would be in a better case  
12 to rely solely on analysis for minor design changes. But  
13 nonetheless, I think that's--I don't know how to--I would say,  
14 from a Nevada perspective right now, we're primarily concerned  
15 with the certification stage, but we're struggling with the  
16 issue of whether--particularly if there is this long lead  
17 time.

18           And remember, there is also the question of whether  
19 the casks that are currently being designed are even the casks  
20 that are going to be used for Yucca Mountain shipments. I  
21 mean, my guess is any cask that's built and certified in the  
22 nineties is likely to be used for some shipments to Yucca  
23 Mountain, because even with an MRS in the system, you would  
24 have a few reactors that are rail capable, that because of  
25 geographic location, might ship directly to a repository. But

1 it's also likely that we're going to have an MRS, and the MRS  
2 may take some functions like consolidation and packaging, in  
3 which case--I know there are plans, you know, to change the  
4 internals of the BR-100 so that it could be used in that  
5 system configuration as well.

6           It's also possible that the casks we're talking  
7 about now aren't going to be used for shipments to a  
8 repository, or for only a minor slice of it, and so that's a  
9 certain precautionary point in terms of how much we ask you to  
10 spend and do right now. Really, we need to resolve this MRS  
11 question. I mean, the issue that the Board has raised so  
12 often, that, you know, we're working on components of a  
13 system, but if we're not sure what the larger system is going  
14 to be like, it's very hard to actually say how we want the  
15 various components dealt with, and if this was only going to  
16 be a from reactor to MRS cask, then the State of Nevada's  
17 position might be quite different.

18       MR. NEILL: In response to Mel's question, some specific  
19 things. For example, the material on the certification of the  
20 shipping casks should be made available. Now, on WIPP, for  
21 the contact-handled transuranic certification program, those  
22 materials are available at the NRC document room in  
23 Washington. The Department of Energy has never seen fit to  
24 provide access to those materials or to establish it in New  
25 Mexico.

1            Secondly, really, put out your plans for the  
2 certification of the RH-TRU shipping cask. It doesn't give a  
3 great deal of credibility sometimes to other states that the  
4 plans for the DOE for the past decade for the RH-TRU shipping  
5 cask is to modify an existing NRC-approved design to  
6 accommodate some of the transuranic waste, and submit that to  
7 NRC for certification, which probably will not be a big deal  
8 thing. If NRC has approved a high-level waste shipping cask  
9 previously, one can modify it slightly for the requirements.  
10 Again, it hasn't been done in 13 years. I don't want to get  
11 into that, but some of those are very specific things to  
12 establish a high level of confidence and credibility in what  
13 is being done.

14            I also want to mention something. I think that it's  
15 to DOE's credit they're involving other groups in boards. For  
16 example, on the design of the Trupact, we were invited to  
17 participate and we got in and I raised issues of a second  
18 spare tire, no, it would really hurt the payload; the length  
19 of time for this lightweight trailer before you retire it.  
20 It's very lightweight and it's pretty heavy loading for that,  
21 which is a little bit above the normal conventional trucking-  
22 type things. Getting into the velocity that the truck would  
23 overturn going around a radius coming off an interstate, we  
24 made recommendations to not permit the generators to load  
25 these facilities outdoors. In fact, they didn't even have a

1 lower temperature limit on the O-ring for loading, and  
2 following the Challenger disaster, it seemed rather surprising  
3 that, in view of that, that you'd specify the lower  
4 temperature, whether you get rain or snow or ice on it.

5           But the point I'm making is, this is very good,  
6 meaningful input on the technical area to provide, I think, a  
7 meaningful thing. Going to a burn test, where some of the  
8 others--and we've been invited next week, for example, to  
9 witness the loading of the first bins up at Idaho--those tend  
10 to be somewhat flamboyant or not terribly meaningful from a  
11 technical standpoint. The real issue is reviewing the data on  
12 leakage, you know, subsequent to the burn test.

13           And those are some specifics, I think, to ensure  
14 that there's a solid technical input from the various state  
15 agencies that may be involved, which just goes a long way in  
16 providing credibility.

17       MR. WENTZ: In response to Chris's question, I think it  
18 is a good one and it gets back to Bob's concern about, you  
19 know, if you do commit to full-scale testing, you might be  
20 committing, over the long term, to something that could be  
21 quite costly. But I do think, on this issue of production  
22 testing after you receive certification, that that is largely  
23 what the public and what other independent reviewers are going  
24 to require, as far as that is largely going to be determined  
25 by your quality control, quality assurance plan, and the

1 degree to which you're going to involve outside, independent  
2 technical reviewers and an issue Bob raised yesterday about,  
3 you know, do you get an NRC inspector, since there is not  
4 going to be a large number--well, I'm not sure about the OCRWM  
5 program.

6           With the Trupact program, there's not going to be a  
7 large number of casks, of Trupacts, and we had also called for  
8 an NRC inspector to come down and check out each one, that it  
9 wouldn't be a big commitment of resources on their part, but  
10 we could say that not only do they have a NRC-approved quality  
11 assurance, quality control plan, but we've had the regulator  
12 down here to bless these things, and again, it gets back to  
13 public confidence.

14           Now, I don't know if that's something that is  
15 applicable to the OCRWM program. I don't know how many casks  
16 you're contemplating, but, again, that would go a long way to  
17 convincing the public that maybe production testing is not  
18 needed if an NRC inspector is looking at each one of these.

19           MR. KOUTS: I think it's important to review the process  
20 that NRC goes through in the fabrication, and what they  
21 require. They need to basically bless, if you will, the QA  
22 plan of the fabricator. They also do substantial reviews, and  
23 do reviews of welds, and then we have a case and recent  
24 industry example--which will remain nameless--where several  
25 casks were deemed not fit for service because of the fact that

1 the radiographs of the welds were not acceptable to NRC, and  
2 where there was an issue between the interpretation of those  
3 radiographs of the welds, the NRC went to an independent  
4 evaluator and got an independent consultant to give them a  
5 reading, too.

6           So the NRC has a lot of oversight in this area, and  
7 I think we need to demonstrate that there is a problem before  
8 we start suggesting that something needs to be fixed, and do  
9 we have any real evidence that that process doesn't work well.  
10 I don't know. I mean, maybe you're in possession of some  
11 information that I'm not, but I haven't seen any evidence that  
12 led us to believe that the NRC oversight of fabricators is not  
13 up to snuff. Trupact certainly went through a process.

14           Again, I think it's important for any commenter on  
15 the program to identify a problem and make sure that there's  
16 evidence to determine--to make sure it's a problem, rather  
17 than speculating whether or not it is a problem or not.  
18 That's my own perspective.

19           MR. HALSTEAD: I think, unfortunately, there's a lot of  
20 evidence that on public perception standpoint we've got a  
21 problem on the question of the technical adequacy of the  
22 products coming out. I think all of us would agree that there  
23 have been both improvements in the fabrication methods used by  
24 cask fabricators over the last 20 years, and I think precisely  
25 because of the documentation in NRC dockets of errors that

1 were found, I think there is greater scrutiny now on the part  
2 of NRC, and I certainly--I'm not saying there isn't room for  
3 substantial improvement, but I think it would also be  
4 inaccurate and unfair not to acknowledge the learning curve  
5 that has been followed.

6 MR. KOUTS: I agree with you, Bob, and just in closing, a  
7 lot of discussion is made generally by the Department and  
8 other people in the nuclear industry about the safety of the  
9 materials transport, radioactive materials transport. I don't  
10 think it's happened by accident. I don't think it's a  
11 serendipitous occurrence that we haven't had major releases of  
12 radioactivity from the transport of these materials. I think  
13 it's because that there is a system in place that has been  
14 shown to be effective, and it's not to say that it's perfect.  
15 No system is perfect, and where it needs to be adjusted it  
16 should be, but, again, we have a long track record here and  
17 there is a system in place, and before we start adding  
18 accoutrements to that system, we ought to clearly make up our  
19 own minds collectively that, indeed, there are improvements  
20 that really need to be made.

21 DR. PRICE: Well, of course, we need to be sensitive to  
22 the fact that the scale-up of activity is going to be  
23 considerably different in the--we hope--when shipping ever  
24 begins. We're talking about several orders of magnitude of  
25 difference of numbers of shipments, numbers of casks,

1 activity. Everything is like tenfold.

2 MR. KOUTS: I agree with you, Dr. Price. Again, though,  
3 I think we have to look to the European experience. They're  
4 shipping at the rates that we project to ship at. Their  
5 safety record is totally consistent with the one in this  
6 country, and the reason for it is because the regulatory  
7 structure is similar, the checks and balances are similar, and  
8 again, worldwide, I think we've seen an experience in this  
9 industry that we've had a very, very safe system, and I think  
10 the European experience gives us a great deal of confidence  
11 that we can do the same type of shipping and have the same  
12 type of shipping record in this country.

13 DR. PRICE: I wonder--go ahead, Bob.

14 MR. HALSTEAD: Yeah, I'm sorry. Just before we leave  
15 this point, Dr. Price, I would disagree somewhat with Chris on  
16 the relevance of the European experience, not because I'm not  
17 impressed with the safety record, but just because of the  
18 differences in mode, differences in length of shipment. I  
19 think there's a lot to be learned, but some of it might be  
20 applied if we're shipping high-level wastes, say, from Hanford  
21 to Long Beach by boat. Then there a lot of things to be  
22 learned from the European experience. I think you have to  
23 keep in mind the differences in mode and shipments.

24 But the one area where we do have experience in this  
25 country, that I've never seen fully developed, and something

1 which I think would be a very good topic for this Panel to  
2 pursue--and perhaps in the arena of a Panel hearing--the  
3 people in the defense side at DOE who've been involved with  
4 the Naval reactor program, and with the research reactor  
5 programs might feel more comfortable sharing their experience.

6           For years we've tried to get the same kind of  
7 origin, destination, shipment-by-shipment data base that we  
8 have for civilian spent fuel shipments for analysis and, you  
9 know, I'm obviously aware that the national security issues  
10 that might be involved in some aspects of the discussion of  
11 those shipments, but from the little information that I have  
12 available, it seems to me that we've had about the same number  
13 of, you know, say we're talking about 26-2700 civilian spent  
14 fuel shipments over the last 30 years or so, and my  
15 understanding is that the long distance shipments in the Naval  
16 reactor and research reactor programs are at least in that  
17 ball park, and it would be really very interesting, both to  
18 have information on those shipments, and on the cask design  
19 and fabrication experience.

20           Admittedly, it's not an NRC-regulated program and it  
21 may be that, you know, I shudder--I guess as I say this, I'm  
22 hoping that the defense program shipping record is better than  
23 their facilities management record, as I would not want to  
24 cast aspersions on a program that's being planned to be  
25 conducted under full NRC regulation and, you know, we all know

1 the problems that come about when OCRWM has to live down the  
2 track record that some of the other facilities have incurred,  
3 but I really think this issue of getting into the spent fuel  
4 transportation record of the Naval and research programs, I  
5 certainly would find very enlightening, as I've been unable to  
6 obtain the information we lack through other channels.

7           I'd really like to suggest that as something that  
8 the Board might pursue. We're going to continue to write  
9 letters asking for information, but we haven't gotten very  
10 far.

11         DR. PRICE: All right. Okay, I would like to kind of  
12 leave the full-scale testing.

13         MR. ROSS: I would rather speak to more of a broader  
14 perspective of this, if I could, perhaps, in that I am not  
15 into either program, if you may, but I deal with, if you may,  
16 the electorate body, the governors, and what I've heard here  
17 kind of parallels what we experienced in the WIPP program, and  
18 let me lay out more of a general perspective, and not  
19 specifically testing.

20           What made the WIPP program really a credible program  
21 with the elected officials and with the emergency response  
22 people is probably the lesson that we can bring here, and that  
23 is, first, we need to know how the program's going to operate  
24 in an open environment. The governors are not going to get in  
25 and criticize how you're testing or drop-testing, or whether

1 your analysis is correct or not. They're going to depend on  
2 their technical people to do that for them, as we do WIEB.  
3 But it needs to be a process which they have confidence in,  
4 and that confidence comes from it being open and it being  
5 understandable, and to be early on, that it's known what's  
6 going to happen.

7           Additionally, what happened in the WIPP program--and  
8 I have to give a lot of credit to Tom and his people--is they  
9 admitted where things didn't go right, and what they did to  
10 fix it; the O-ring situation, the dust ring or debris shield,  
11 or whatever they now term that. All of those things went to  
12 providing credibility. The iterations you went through,  
13 instead of saying, "Well, we fixed it," you know, that didn't  
14 add any credibility, but if you could bring it along saying,  
15 "Yeah, we did experience a problem here. We did do these  
16 things and that fixed the issue. The analysis was rerun and  
17 it worked." That's what added a lot of credibility to the  
18 program from the public side or the elected officials' side.

19           Additionally, it was published up front what they  
20 would do. We knew exactly where they were going, and when  
21 they said, "Wait a minute, we've got to stop and do this,"  
22 that was open and published and that. So from that  
23 perspective, that helped. Having the experts there and coming  
24 back to us with the information, of course, that's always  
25 very, very dependent on our decisions, or our decisions are

1 dependent upon that, but as I say, that kind of feeling, give  
2 and take, and working through it, as well as having a road map  
3 that's open right there for everybody to work with, I think,  
4 is very valuable.

5           I'm not going to get into discussing whether you  
6 should test early on the prototype or test later on the  
7 production. I think that those decisions need to be made as  
8 you go down the road, but at least publish that you are  
9 considering those things.

10           From at least a personal view, the production model  
11 is probably more relevant as it was with the WIPP one.  
12 Trupact-I went through a bunch of iterations. It was finally  
13 dropped. Trupact-II was put through all of the tests and  
14 that--or, not tests, but evaluations, and finally, that was  
15 the piece that was tested, and people have confidence, then,  
16 that the thing going down the road actually fell the 30 feet,  
17 it actually went through the burn test, that kind of thing.  
18 They understand that, and what's on the road is what survived.

19           So to give you just a feeling that's non-technical,  
20 but more of a political feeling, I think those are the lessons  
21 that, from my end, you could take some things away with.

22       DR. PRICE: Go ahead, Chris.

23       MR. KOUTS: Could I ask a question? You know, as you  
24 know, we try to work through our regional groups to get input  
25 into our program.

1 MR. ROSS: Right.

2 MR. KOUTS: And this is a process that we've been  
3 embarked upon since, I guess, 1985-86, and we feel it's a good  
4 process to get--do you feel that that approach is a good one  
5 for the Department to take? I know that there are specific  
6 nuances state-to-state that we need to deal with, and so  
7 forth, but do you believe in the early stages of a program--  
8 and certainly we're not as close as we are to WIPP--do you  
9 think that that's a reasonable way for us to approach--

10 MR. ROSS: Well, WIPP started that way. WIPP started  
11 with--and I have to relate to WIEB, because that's our  
12 technical group. The WIPP program started with WIEB and  
13 Laurie Friel and all of the things that went on there, and the  
14 technical work that came out of that, I think, benefited both  
15 sides. I can only view it from that perspective.

16 They feed us the information. They translate what  
17 all of these numbers mean and that into things that we can  
18 say, "Hey, we have confidence that it will survive a 30 mile  
19 an hour crash." They also speak back to you on our generic  
20 concerns that they try to translate into things that then can  
21 be tested, if you may. So I think that that dialogue is  
22 excellent at this point.

23 I think at some point, though, in your plan, you  
24 need to have a stop point and say, "All right, now we involve  
25 the governors, we involve the emergency response people, you

1 know. Is this something that they can't deal with if it is,  
2 in fact, an accident?" and, you know, those kinds of things,  
3 and I think that their observations are also valuable.

4           So at some point you need to start clicking those  
5 things in. But right now, as you indicated, you know, your  
6 relationships with WIEB, I deal with them, you know, on a  
7 daily basis, Laurie's end. Now, we don't deal with this  
8 particular question every day, but she does provide me with  
9 information.

10           Additionally, you know, we have taken a stance on  
11 the transportation primer. We have taken a stance on the  
12 comprehensive transportation program itself, and it's all  
13 really gone through that technical aspect, and I think it's  
14 probably generally appropriate right now, but I think at some  
15 point you need to start thinking about how to get this out,  
16 this information beyond the technical.

17       DR. PRICE: Before leaving the issues relating to  
18 testing, I would like to hear a little brief discussion about  
19 testing to destruction. We heard that comment raised  
20 yesterday, and what DOE views with respect to testing to  
21 destruction, and then some give and take a little bit for a  
22 brief time, because there's other things I'm sure we need to  
23 get to.

24       MR. KOUTS: First of all, I think analytically you can  
25 project what forces would be needed to make a cask fail.

1 Given the conservative nature of the designs, trying to  
2 construct a test that would allow you to achieve those forces  
3 is something that we haven't really looked into, and it would  
4 --some questions, I think, need to be asked as to what  
5 information are you trying to gather. Is it trying to  
6 translate the forces into a viable accident that might happen,  
7 or is it analytical--or is it a test to determine whether or  
8 not your analytical methods are reasonable to project the  
9 forces that would cause total failure of the cask.

10           This is not an issue that we've delved into at great  
11 depth. It's one that our perspective of is that trying to  
12 deal with those scenarios creates a great deal of problems and  
13 a great deal--and it raises many questions, and the value of  
14 it, in the long run, is somewhat questionable.

15           I remember Mr. Robison's comment yesterday in  
16 relation to, it would be helpful to a first responder to know  
17 the forces that are necessary for total failure of the cask in  
18 his understanding of how to deal with an accident. The  
19 historical perspective of NRC in the development of the  
20 regulations is that, based on what they know of transportation  
21 accidents in this country, there hasn't been one that would  
22 breach the casks that they are presently certifying, so trying  
23 to construct an accident that would make those forces occur is  
24 one that gets into somewhat of a Fantasyland area. Whether or  
25 not that's appropriate, I don't know, and that's something

1 that I need to hear more about.

2           Certainly, an engineer can look at our designs and  
3 make judgments as to what the stresses would be needed and the  
4 forces would be needed for total failure of it. That's  
5 certainly something that can be done. Is that information  
6 useful? Mr. Robison thinks it is. I'd like to hear other  
7 comments as to--from the people here as to whether it is.

8           MR. WENTZ: I'd just like to say that I think it would be  
9 useful, but I tend to agree somewhat with Chris, that in  
10 looking at the draft supplement EIS for WIPP, the State of New  
11 Mexico criticized pretty severely the DOE's worst case  
12 accident scenario that they had in there, saying that it  
13 wasn't really a worst case abounding accident, but at the same  
14 time, we also noted the inherent difficulties in trying to  
15 structure what's a credible worst case accident scenario.

16           We had many of the environmental groups down here in  
17 New Mexico after Trupact had gone through this extensive  
18 testing--largely at the urging of the EEG. They called for us  
19 to take a full-scale model and just roll it off the hill up at  
20 Los Alamos, and the inherent problems with instrumenting a  
21 test like that and whether it had, in fact, represented what  
22 would be a worst case scenario hitting, you know, a sharp  
23 rock, or didn't it hit a sharp rock, and the velocity and all  
24 that, while I think this type of thing could be very useful,  
25 we certainly recognize the difficulties in trying to structure

1 something that would be satisfactory to all parties. I just  
2 personally don't think it can be done.

3 MR. HALSTEAD: Well, as Chris knows, we're in the  
4 somewhat complicated position of having endorsed destructive  
5 testing without, at the current time, having the kind of  
6 documentation that we'd like to have to go behind it to tell  
7 you exactly what it is we want and how it would be used.

8 We're working in two different ways to try and  
9 address this, and they're really very similar to the  
10 approaches Chris is using. One is to think in terms of a  
11 particular cask design made of specific materials, and use  
12 either analysis or testing to determine what the failure  
13 thresholds in that particular cask design are, or conversely,  
14 can you study some real world accidents or what seem to be  
15 credible real world accidents?

16 For example, assume that the San Bernardino hundred  
17 mile an hour rail derailment and the subsequent fire occurred  
18 simultaneously instead of two weeks apart, and to us, that's a  
19 pretty extreme situation, but it's one in which there is at  
20 least some real world basis for, or do we look at the crush  
21 forces of a freeway deck in the Bay area falling on a trucked  
22 cask during an earthquake, or do we look at a plunge from the  
23 top of the highest bridge on a designated highway shipping  
24 route either into a dry river bed or rocks. I mean, these are  
25 some of the things that we're trying to look at, because they,

1 as extreme as they may seem, they're at least scenarios that  
2 have some basis in real world accident histories, or in  
3 infrastructure conditions.

4           I don't know how we approach the analytical side of  
5 this, because, as I said before, the people that we have the  
6 most confidence in doing that kind of an exercise--which would  
7 be Larry Fisher and C.K. Chu at Livermore--have told us that  
8 they can't do the kind of work we would like them to do  
9 because of the commitment they have with the NRC, and perhaps  
10 that's something that we can find a way to approach.

11           On the other hand, we are going to try to commission  
12 a contractor report, again, with those limited resources,  
13 where we will look precisely at those three issues that I've  
14 mentioned; a high speed rail derailment followed by a  
15 prolonged fire, in this case, as a result of the train falling  
16 on top of a pipeline; the earthquake bridge deck scenario; and  
17 a plunge from a high bridge.

18           Hopefully, from that analysis, we'll be able to, you  
19 know, to get some G forces and other indicators that might  
20 allow us to suggest some bounding for accident scenarios that,  
21 say, could be tested analytically. I'm certainly--I certainly  
22 don't want to waffle on the issue of the desirability of  
23 destructive testing, because in terms both of public  
24 credibility and I think, frankly, in terms of advancing the  
25 state of the art and/or science of cask design, that there's

1 some real value there, but I'm also going to be honest and say  
2 I don't feel that it's a good thing to go any further than  
3 we're going until we've got more to show on our side of  
4 exactly how we think it should be proceeded with, and that's  
5 hopefully something we'll be in a better position to talk to  
6 you about in twelve months.

7       MR. KOUTS: Okay. One thing we haven't publicized is  
8 that we have had our cost contractors look at recent  
9 transportation potential related accidents, the freeway  
10 collapse in the Oakland area. We had GA look at that in  
11 relation to their designs. We also had B&W look at the  
12 explosion in the Soviet Union with the two trains passing next  
13 to each other, the large natural gas explosion that occurred  
14 there, and we had them do an analysis based on what we could  
15 gather of what occurred, and in the contractors' evaluation,  
16 they felt that the casks would have survived very well, and  
17 that the stresses and the other forces in those accidents were  
18 not up to the level of the regulatory tests that we were  
19 designing to.

20               So that's something we were prepared to talk to at  
21 the TCG that we held in February of last year in Lexington,  
22 had the question been asked. We were prepared to indicate  
23 that we had looked at those scenarios and we had addressed  
24 them. So we do, on a regular basis, when we become aware of  
25 transportation accidents, have our contractors gather

1 information that we can about those accidents and try to apply  
2 them to our designs so we have some insight. So we're not--we  
3 don't have our eyes closed and we're marching forward. We're  
4 trying to, again, look at things that are occurring in the  
5 world and trying to relate them to our cask designs.

6 DR. PRICE: Is there a reason why you didn't just simply  
7 offer this, rather than wait to be asked?

8 MR. KOUTS: Well, the--that forum was set up to allow  
9 people to ask us questions about the cask designs, and  
10 we're--

11 DR. PRICE: But regardless of that forum?

12 MR. KOUTS: I understand. It's interesting, Dr. Price,  
13 when you sit on this side of the table, when you're--when you  
14 begin to offer up information like that, it's almost as if,  
15 well, DOE offered up that information because they knew the  
16 answer, and that's the only reason why they said it. And so,  
17 sometimes it's better for us to do our analysis, assure  
18 ourselves, and not appear as if we're out trying to promote  
19 ourselves and promote how wonderful we are or how good a job  
20 we're doing, and in some cases, react to questions that are  
21 asked and be prepared to answer those.

22 In that case, we chose, in that specific instance,  
23 that if either of the cask designers were asked those  
24 questions, to respond based on the analysis and the  
25 assumptions they made for the accidents, but it is something

1 that we've done. It is something that we will continue to do,  
2 and I offer it here--you may wonder what my rationale was  
3 here, but since Bob talked about basically the freeway  
4 collapse, I felt it was appropriate for us to indicate that we  
5 had looked at that, and we also looked at the Russian  
6 disaster, so...

7 MR. HALSTEAD: I would hope in the future we could talk a  
8 little more directly, and that you would feel comfortable  
9 telling us what you're doing, and--because those are two of  
10 the issues, and the reason we didn't get into it in February,  
11 Chris, is because we were busy arguing about the process and  
12 the decision of how the contracts had been handled and we  
13 hadn't received it in, so it ended up being a different  
14 meeting than most of us had intended.

15 MR. MILNER: Your point's well taken. I think we will do  
16 that in the future.

17 MR. HALSTEAD: But I will say this in front of the Review  
18 Board, that yeah, I think there's an area where we would both  
19 benefit if we had more direct and early discussion of these  
20 things, and I say this from the state's standpoint. It might  
21 keep us from spending our resources on things that we don't  
22 need to spend them on; and on the other hand, we might be able  
23 to offer some advice critiquing your assumptions, making sure  
24 that they're really as severe as you think they are.

25 DR. PRICE: I believe there are two people who want to

1 talk on the issue here of testing to destruction; Mr. Neill  
2 and then Mr. Robison.

3 MR. NEILL: No matter what test you come up with, there's  
4 always someone in good faith who can raise the ante. You  
5 know, you can say, well, we're going to have a twenty-minute  
6 burn at 1800°. Marvin Resnikov, for example, can come up with  
7 an example where a truck did burn for thirty minutes and the  
8 temperature was 2100°; therefore, those tests aren't adequate  
9 and they should be stiffened up.

10 And I think the issue we're really talking about  
11 here is what's the acceptable risk that society is willing to  
12 accept, and radiological risks, which are in a class by  
13 themselves. NRC has recently run into a buzz saw in trying to  
14 establish some threshold of a low regulatory concern. If  
15 you're less than one to ten millirem you're home free and  
16 don't worry about it, and that has precipitated, I think, as  
17 we all know, enormous reactions to that.

18 The acceptability varies. For example, to DOE, the  
19 Type A carbon steel drum has to be designed to withstand a 30-  
20 inch drop test, and when you take these drums out of the  
21 Trupact, you've got to jack them up 15-12 feet in the air.  
22 That's an acceptable risk to DOE, who is self-regulating on  
23 it. And I don't mean this to be so insensitive, but the--and  
24 the issues tend to be non-technical as to what is a reasonable  
25 test, and the example I would even use today, if you don't

1 believe me and we want to debate on where to put an MRS, if  
2 you were to park these wastes, for example, at Germantown at  
3 the DOE headquarters, for those of you that live in  
4 Germantown, try to convince your friends and neighbors that,  
5 you know, this is a very short trip from the interstate. It's  
6 only a hundred yards. We can build a very short highway. We  
7 won't have troubles on this. It's a very vexing problem, and  
8 many of the concerns and fears are really not technical in  
9 nature, and if you try to convince your neighbors that this is  
10 really the best place to locate it, you may find that there's  
11 an extreme amount of difficulty in convincing them of that.

12       MR. ROBISON: My comments having to do with talking about  
13 how the cask might fail, or the Trupact, or the high-level  
14 waste cask are really aimed at the audience of the emergency  
15 first responders. In small towns in Oregon, what we're going  
16 to find, I believe, is that the elected officials and  
17 community leaders are going to look to the fire chief and say,  
18 "Well, what do you think? Is this stuff safe enough?"

19             I think the fire chiefs are going to be able to  
20 answer that question better if they've heard a serious  
21 discussion of the kinds of things that might happen, credible  
22 or incredible, that might result in a release. I'm not sure,  
23 personally, that I think testing the cask to the point of  
24 destruction necessarily gets you to that point. I think a  
25 discussion in the training programs about--that would help the

1 emergency response community understand when they roll up to  
2 the scene of an accident, if they see the following kinds of  
3 things may have taken place, you might be extra careful,  
4 Chief.

5           The kind of analysis you described, looking at real  
6 world, very serious accidents not resulting in a release would  
7 be very helpful to those first responders. It would begin to  
8 give them the sense of the tremendous forces that would be  
9 required to breach that cask. These people are pretty  
10 intuitive. They understand. They've been to a lot of wrecks  
11 out on the highway. Some of them have been to some train  
12 wrecks. They've seen a lot of buildings burn, and they've had  
13 to make some decisions about going into burning buildings.  
14 They understand at a real serious gut level what risk is, and  
15 quite frankly, in a lot of ways, I think they're better at it  
16 than the general population.

17           If they had some sense of the forces that would be  
18 required in a real world sense, of what would be required, you  
19 know, what would be required to breach that cask, it would be  
20 helpful to them. And then, following that, once they've got  
21 that understanding, now that you know what might break this  
22 thing some way, here's where you want to look for your  
23 problems. Here's where the seal is. Here's how you might go  
24 about looking through your binoculars to see if anything's  
25 happened to that seal. Here's where some of the vent valves

1 are. Now, that's the kind of information that I think--going  
2 beyond just saying, "We've met the regulatory requirements.  
3 We've dropped it 30 feet and it didn't fail, so please leave  
4 us alone now." Going the next step and saying, "Yeah, and if  
5 we did this other stuff, or if these other things happened,  
6 this is where we might get into trouble."

7           Even if we find a scenario where there is a release,  
8 I think that you would find the emergency response community,  
9 knowing that somewhere along the line we have to set  
10 acceptable levels of risk, and I think you would find them  
11 entering into the dialogue with our elected officials about  
12 that.

13       DR. PRICE: Okay. Chris, you got all this kicked off  
14 with your first response to the first issue, and you said  
15 there were several, so is there something else that went on  
16 yesterday you'd like to discuss?

17       MR. ROSS: I think you said you had twelve, didn't you?

18       MR. KOUTS: I really don't want to monopolize the time  
19 here, and I don't necessarily think it's appropriate. We are  
20 here to listen. I think we're also here to provide  
21 perspective. I've found the last days certainly to be very  
22 informative to me, and I think that the relationship that WIPP  
23 has developed with WGA and the states along the routes are  
24 very productive and have helped their program by their own  
25 statements, and certainly by yours, and I think by bystanders.

1 I'd like to get some perspective from the other  
2 people. Mr. Halstead indicated yesterday that he saw benefit  
3 to us identifying corridor states even without an MRS site,  
4 and for us to use Yucca Mountain as a point of receipt of  
5 waste and, therefore, identify states along those corridors.

6 I'm interested in the perspective of the other  
7 states, and the WGA in terms of whether they think that that's  
8 a feasible thing for us to do at this time. Certainly, there  
9 are a hundred--instead of the ten WIPP sites that have  
10 generators, we have over a hundred in our program. They span  
11 the country. Do you think it's appropriate to identify all of  
12 those states at this time as corridor states, or would it be  
13 more appropriate for us to defer that to a time where we have  
14 an MRS site identified, and work from that point on?

15 MR. ROBISON: Mr. Chairman, I'm going to answer the  
16 question in a little different way.

17 The U.S. Department of Energy ships nuclear waste.  
18 I think it's no secret that the U.S. Department of Energy has  
19 some problems with public credibility right now, based on the  
20 way the--regardless of the transportation record, based on the  
21 way the defense programs--based on the way things are going  
22 right now. We've got some problems at Hanford. It casts a  
23 shadow, if you will, on the Department of Energy.

24 We have been working on safety programs for the WIPP  
25 shipments. We know that in Oregon, by upgrading our

1 capability, we are also upgrading our capability to handle  
2 another DOE shipment. Quite frankly, the public doesn't  
3 really--the public in Oregon doesn't really differentiate a  
4 whole lot between the WIPP shipments, high-level waste  
5 shipments that might come some day in the future, TMI  
6 shipments that come through Oregon, off to Japan for analysis  
7 --I think the ten days are passed. I can discuss that now--  
8 cesium shipments. They understand the difference between a  
9 couple of curies in a TRU shipment and a whole lot of curies  
10 in a cesium shipment.

11           Rather than focus, if you will, on identifying--from  
12 my perspective--identifying the specific routes to a  
13 repository, we know that high-level wastes are going to leave  
14 Hanford and they're going to come through Oregon. What I  
15 think the Department might want to consider is stopping this  
16 compartmentalization of all these programs; that if we can  
17 upgrade the capacity to handle a DOE shipment in Oregon, we're  
18 going to do some good work towards the later need that we see  
19 to move the high-level waste out of Hanford.

20           MR. WENTZ: Yeah. I would totally agree with what Bob  
21 just said as far as the various groups within DOE getting  
22 together on this issue. As you know, under the federal  
23 regulations, highway route controlled quantity shipments,  
24 those regulations apply to any of those shipments. I think  
25 the high-level waste shipments will fall under that. Almost

1 all the WIPP shipments fall under that.

2           As far as the identification of routes, I think the  
3 earliest that OCRWM could do that would be beneficial to the  
4 states, and I'm speaking from New Mexico's perspective of  
5 having gone through this very tedious, painful route  
6 designation process. It is--when we went through it in late  
7 '89 and early 1990, we were only the seventh state to utilize  
8 that authority under the federal regulations, and in fact,  
9 most of the other states that had gone through a route  
10 designation process had only designated between different  
11 interstate routes, so I think ours was one of the most  
12 comprehensive route designation processes, and it took--we  
13 collected something like nine volumes of highway data, and the  
14 effort really spanned over about--well, it's still not done--  
15 over two and a half years.

16           So I think as far as being of benefit to the states,  
17 that the earliest that you could identify those routes, and  
18 then the states could react to that to see if they, in fact,  
19 wanted to use that authority to go through this route  
20 designation process, and it is quite a lengthy process that in  
21 most states, under state law, requires extensive public  
22 hearings. Under the federal regs, it requires extensive  
23 consultations with affected local jurisdictions.

24           The other thing, many of us have been part and  
25 parcel to the WIEB effort on commenting on the 180(c)

1 strategy, and at least from the perspective of New Mexico, we  
2 fully agree with those comments that were submitted, that the  
3 earliest that you could identify those routes as far as the  
4 efficient use of resources and the timing of state programs,  
5 would be of significant benefit to the states.

6 DR. CARTER: Chris, I wonder if I can ask you a question  
7 that's--that might have to do with the down side of that, but  
8 how long have some of the anti-WIPP transportation route signs  
9 been up in public in Santa Fe and other places? I know  
10 they've been there for years, and I presume there's still some  
11 of them there. And they're a constant reminder, I'm sure, to  
12 at least some elements of the public that, you know, there's  
13 some sort of problem.

14 Most states make you take campaign off the posts  
15 within a short period of time, but apparently the WIPP signs  
16 have been up for years and years. But what is the age of  
17 those things?

18 MR. WENTZ: They've been up for three or four years.  
19 Most of the groups--this group up in Santa Fe, Concerned  
20 Citizens for Nuclear Safety, really got active about two, two  
21 and a half years ago. I think some of their folks are largely  
22 responsible for those signs, but as Bob Robison indicated,  
23 they're extremely well-informed. They're very vocal. They  
24 know the issues well, and they've been very effective.

25 MR. NEILL: In fact, the anti-nuclear groups in Santa Fe

1 who have been pressing for a by-pass around the city for the  
2 shipments of waste from Los Alamos are supported 100 per cent  
3 by the pro-nuclear groups in Los Alamos who have been wanting  
4 a by-pass to get down for shopping, and both of these have  
5 advocated this in a very strong, firm way.

6 DR. CARTER: Multi-use highway.

7 MR. NIELL: And the estimated costs is about \$150 million  
8 for roughly one shipment a week.

9 MR. HALSTEAD: I'd like to just make a comment about what  
10 I think would be the benefit to the DOE program of earlier  
11 involvement of the states on a more individual basis than  
12 currently occurs under the regional--the contracts that you  
13 have with the regional organizations.

14 First, let me honestly say that one of the lessons  
15 learned from WIPP is that if you get the transportation  
16 corridor states involved early on in planning this, you are a  
17 lot more likely to have the political clout to effect  
18 decisions that are necessary to get a safer transportation  
19 system. I honestly, with all respect to the political savvy  
20 of the State of New Mexico, I think New Mexico has benefited  
21 greatly by the fact that the corridor states are organized,  
22 and I frankly admit that that's part of our motivation in  
23 Nevada. We feel that people are going to be concerned in the  
24 corridor states about transportation sooner or later, and the  
25 earlier it is the more likely it is to help us shape a system

1 that we can all live with.

2           That aside, I think there are some important  
3 benefits to the Department, as well as the states that are  
4 involved, by--and I think the mechanism is early  
5 implementation of Section 180(c), although, again, I realize  
6 it's difficult to deal with the equity issue of deciding who  
7 should be involved early on, when you don't know if you're  
8 going to have an MRS or where it's going to be. That's the  
9 down side. But consider the positive side of this.

10           You have states like Illinois, which will surely be  
11 a corridor state to any MRS or repository because of the  
12 concentration of reactors and the location of the Morris  
13 facility. No state has as much experience with the inspection  
14 issue as the State of Illinois does, and frankly, I would  
15 offer that no state has as much experience with nuclear power  
16 regulation, period. Somebody may come forward to volunteer,  
17 but they have a pretty outstanding record.

18           From the standpoint of the State of Nevada, we would  
19 certainly benefit if there were fuller involvement by the  
20 State of Illinois, and I think the DOE program would. Maybe  
21 there are ways to selectively increase state involvement  
22 without designating all the corridor states, but I, you know,  
23 I think there are both pluses and minuses to that.

24           You have a state like Wisconsin, which is probably  
25 not going to be a major through-corridor state, but will be a

1 major originating corridor state, again, because of the  
2 location of reactors, and during the ten years or so that I  
3 was there, we had almost 500 truck and rail shipments, which  
4 is about half of all the shipments that occurred in the  
5 country during that period of time. So there's an enormous  
6 experience with route evaluation and emergency response  
7 planning.

8           I think you could pull some other examples out, like  
9 the State of New York, which would almost certainly be a  
10 transportation corridor state for highway shipments to Yucca  
11 Mountain; could conceivably, in addition to its own reactors,  
12 be affected by transportation from other states to an MRS.  
13 That's a state, because of the West Valley shipments, that has  
14 enormous experience, again, with routing and with emergency  
15 response planning. Notice I'm saying emergency response  
16 planning as opposed to training, because I think the training  
17 can wait until much later in the process.

18           But the down side of not involving these states  
19 right now, it seems to me, is twofold. One, they will  
20 inevitably be concerned, and you'll hear their concerns about  
21 cask design five years after the casks have been certified, at  
22 the rate that we're going, which will not be constructive.  
23 And secondly, we don't have the benefit of their early  
24 involvement, and particularly, the involvement of states that  
25 actually have experience with either lots of small-scale

1 shipping campaigns, or a few very large shipping campaigns,  
2 and having gone through both, I'm not sure which is the  
3 easiest or the hardest to deal with, you know. Sometimes  
4 eight shipments from a reactor are harder to deal with than  
5 150 going out and 150 coming back.

6           But I do think that's an additional reason that I  
7 don't think we've thrown at you, Chris and Ron and Jim, in the  
8 past, for really re-thinking your position in the timing of  
9 Section 180(c) implementation, and I really do think, to get  
10 back to the WIPP experience, you see--you know, not everybody  
11 is happy about having these WIPP shipments, and frankly,  
12 there's very often a political price to be paid for the people  
13 in the WIPP corridor states who are involved so  
14 "cooperatively" with DOE, and I think that'll be a factor for  
15 those states involved with the civilian program. It won't be  
16 totally an easy thing for them if there's a strong anti-  
17 nuclear movement in those states, but I think there are some  
18 real benefits to getting them in early.

19           MR. MILNER: Well, Bob, as I mentioned earlier, I fully  
20 agree with the need and the appropriateness for early  
21 involvement, and I would agree that you could certainly pick  
22 out a number of states throughout the country that would be  
23 quite likely to be corridor states, and certainly, you can get  
24 the benefit of their concerns early on. However, there are  
25 going to be a number of states that you're going to miss

1 because you don't know more specific information, and I'm not  
2 so sure that you've gained a lot by bypassing, in essence,  
3 their concerns.

4       MR. HALSTEAD: Let me say, lesson learned from WIPP. We  
5 started off with the seven states on the Hanford to WIPP  
6 route, knowing full well that there would probably be others  
7 who had to be added, and as time has gone on, we've added  
8 those; in the west, California, Arizona, and Nevada. I don't  
9 know the whole range of how you're going to deal with the  
10 southern states, but as it was appropriate to bring additional  
11 states in, they were brought in. I think it's worth  
12 considering a phased approach.

13       MR. MILNER: I think it's important, too, to recognize  
14 that assuming there's an MRS in the system, that you have a  
15 relatively finite period of time from that that site is  
16 identified until the waste is actually shipped, and that  
17 period happens to be something on the order of six or seven  
18 years. I think we should involve those parties at the very  
19 earliest opportunity, and I think that opportunity is at the  
20 point in time when an MRS site is identified.

21       MR. WARD: Chris, if I may, there is another reason to  
22 get the states involved early. I don't think anyone here is  
23 aware of it, but when we had our trailer made, we had the  
24 option of having one that was eight foot wide or eight and a  
25 half foot wide, and eight and a half foot wide, 102 inches,

1 was chosen because it was supposedly more stable.

2           You do an analysis of the existing DOT regulations,  
3 and everyone should be aware that there is two definitions of  
4 designated routes; one, like the State of New Mexico, for  
5 radioactive or high level controlled shipments in 177825. The  
6 other definition is within a state--and it's published in the  
7 CFR--for 102-inch wide or wider vehicles.

8           What we found when we did our analysis is within the  
9 State of South Carolina, basically we couldn't get an empty  
10 Trupact to Savannah River. We could get within two miles of  
11 the east gate, and then we were over-width. Each state has a  
12 different definition of reasonable access. What happened, and  
13 it took close to a year, was South Carolina legislature  
14 redesignated the routes on the northern side of the  
15 installation from I-20, and while I was there, I submit that,  
16 in all honesty, that South Carolina was not very forceful in  
17 enforcing their width requirements, because I can't believe  
18 that for forty-some odd years there's never been a 102-inch  
19 truck went to Savannah River.

20           However, six years down, you don't want some brand-  
21 new inspector to say, "Uh-uh," and you're stopped. So if you  
22 have a hundred sites, I suspect there's some you can't get to.

23       MR. KOUTS: I'd like to get back to the point that Ron  
24 made about lead time.

25           We've taken the position and we've said that we'd

1 identify a series of potential routes three to five years  
2 before we ship, and we've said that, and that position was  
3 endorsed by the Western Interstate Energy Board. I'm sure  
4 you're aware of that, Bob, and that fit into the planning base  
5 of the states that contribute to the WIEB, so we felt very  
6 comfortable with that.

7 MR. HALSTEAD: Let me just say, Chris, that was  
8 specifically, though, on emergency response planning and  
9 training, and WIEB also has a statement calling for the  
10 earliest possible designation of routes and the earliest  
11 possible involvement of states for exactly the reasons I've  
12 stated. But again, you have to--we've all--were all convinced  
13 by your arguments on training, that it's not a good idea to  
14 get involved in training people ten-fifteen years before  
15 shipments start.

16 MR. KOUTS: Okay. I just wanted to reiterate that the  
17 process for the identification of the series of potential  
18 routes and the time frame was something that we listened very  
19 hard to from the institutional input that we got, so I felt we  
20 were consistent with that, and if something's changed, we'd  
21 like to know.

22 MR. ROSS: I think one thing, too, that you have to  
23 consider, the sooner you can do it the better, because a lot  
24 of these routes are going to need upgrading. New Mexico is  
25 finding that is an issue, and of course, that's always been

1 one with the Land Withdrawal Bill, and it takes five years--  
2 having worked for a highway commission for a number of years  
3 in my life span--to move that into the five-year plans, and  
4 because DOE is saying, "Well, that's really a Department of  
5 Transportation cost," that kind of thing.

6           Now, I understand you're looking at rail, but, you  
7 know, rail companies are the same way. They have five-year  
8 capital improvement programs and that kind of thing.

9           One other thing, though, I might suggest--and I  
10 think you're doing it now at least in the west, is you're  
11 involving WIEB, which kind of represents a whole panorama of  
12 states, knowing that all of them are going to converge, at  
13 least in the west, on a very few corridors. Interstates tend  
14 to follow the rail system here, et cetera, and there are few  
15 of those that really lead to Yucca Mountain if, in fact,  
16 that's the site that ends up being, you know, chosen, and I  
17 have to take that position, as you all understand.

18           But there are a very few sites if you really look at  
19 it, you know. You've got the corridors coming out of  
20 California, and you've got the corridors coming out of  
21 Arizona, Colorado, and Utah, and that's principally what you  
22 have. So it's not that difficult to kind of pen in some  
23 things and start discussing some of the things that really  
24 lead into that.

25           WIEB makes a good representation for emergency

1 response, for the energy people, for the clean-up, that kind  
2 of thing, but you also need to bring in those people who are  
3 the transportation planners, and that's where, you know, you  
4 bring in the Wash-DOE people and start thinking in terms of,  
5 all right, what are the lead times we need? What are some of  
6 the things we need to consider? And they handle rail as well  
7 as the highways, so I just throw those things out for  
8 additional consideration as you go through some of this, and  
9 as this becomes more open, you'll find more groups that you  
10 need to involve simply because of their strategicness (sic) in  
11 the decision-making process.

12 MR. NEILL: One of the broader issues that includes this  
13 question of timing--and it's not directed just to OCRWM, but  
14 to everyone, all of us--is the importance of trying to get  
15 confidence and credibility by the various public sectors by  
16 not being inconsistent and constantly changing our minds, and  
17 for example, on WIPP, the original plans were 50-50 rail and  
18 we put in a rail spur and committed public funds for it. I  
19 can show you reports of 50-50, 90-10, 10-90, and today we're  
20 talking about 100 per cent by truck.

21 The high level--it's hard to explain to the public  
22 why, from the standpoint of safety, it makes good sense to  
23 ship 100 per cent by truck for TRU and 100 per cent by rail  
24 from an MRS, but even the question of whether to have an MRS  
25 is up in doubt, and while no one has mentioned it--I'm

1 speaking of high level now--DOE is still considering, and it  
2 will be producing some RFP's in the next two months, for an  
3 MRS for WIPP, because of the potential delays that I discussed  
4 yesterday. That RFP is delayed by a year, but there are at  
5 least some contracts put out to look at the question of  
6 perhaps even using a federal facility, a military base, or a  
7 private sector for an MRS.

8           Some other examples in the transportation area, Mel  
9 mentioned yesterday, it's true that at one point first  
10 responders were provided with instrumentation and today  
11 they're not. In fact, one of the policeman in New Mexico said  
12 they don't want anything more complicated than a flashlight in  
13 the trunk of the police van, because these things tend to  
14 break and there is a point on it. But we do change our views  
15 and concerns.

16           For example, even the calculations, if we based it  
17 on radiation doses, in our report that we published using  
18 RADTRAN and we talked about it yesterday, one could avoid a  
19 105-person rem by taking some rural routes on these shipments  
20 coming down to WIPP through New Mexico, but there are other  
21 factors in addition to radiation dust. These would be trying  
22 to go around to avoid any kind of a populated centers.

23           And another problem, when you speak of the  
24 assurances that we can get a response team on the spot in a  
25 matter of a couple of hours, for those of you that may have

1 noted in the paper this morning, New Mexico has the highest  
2 fatality rate in automobile accidents of any state in the  
3 union. Amongst the three reasons cited was, one, that when an  
4 accident occurs, people can't get medical attention in a  
5 timely manner in these very remote, rural areas. So sometimes  
6 the response times would be very difficult to convince people  
7 who, with these accidents in these rural areas, that they can  
8 respond that quickly.

9           Conversely, it may be just as difficult if you give  
10 a lecture in Denver that we can respond in a matter of a few  
11 hours, there with a whole series of military bases--you're all  
12 familiar with the incident of the Navy torpedoes. There was  
13 an accident on the interstate under a bridge. There was a  
14 fire, and it took, I forget, I think 12 hours before the  
15 competent capability got to the scene.

16           So the point I'm trying to drive at--and, by the  
17 way, this is not confined to DOE, it's to everyone; states and  
18 different groups--is we really need to instill more of a self-  
19 discipline and try to have a greater consistency of what we're  
20 doing and how we're doing it, because when we continue to  
21 change our minds on this, the public really says, "You guys  
22 really know what you're doing and where you're going," and  
23 just as quick in the broader context, the very material we  
24 want to bring to WIPP, prior to 1970, we used to throw on the  
25 surface of the ground in pits and cover with one foot of dirt.

1 The high-level waste, until recently, was in a liquid form  
2 and now we're going to just solidify it, and we had single-  
3 shell tanks and we've changed that to double-shell. We've  
4 changed that, and now we're going to solidify them, and  
5 there's a very fundamental thing here, that even though the  
6 doses are low and the probabilities of catastrophes are also  
7 extremely low, I don't think we do a very good job  
8 collectively in convincing the public that we have a self-  
9 discipline and a commitment to do these things in the proper  
10 way.

11 DR. PRICE: All right. My impression on the issue of  
12 early route designation is that this--and I'm throwing this  
13 out to see if I've got the right impression--is that those  
14 involved with the states' view of things, is that there is  
15 some identification of routes that presently would see is  
16 possible, and that there are some parts of the system that  
17 could be identified at a later date that are probably not  
18 capable of being identified right now. And as I would  
19 understand your position, it's that those which can be  
20 identified now ought to be, and ought to be then involved in  
21 the processes of DOE; is that correct?

22 MR. WENTZ: Doctor, I think it relates to an issue I  
23 talked to yesterday about approaching DOE and the optimization  
24 of shipment schedules, that essentially what we're asking the  
25 Office of Civilian Radioactive Waste Management to do is where

1 they can make a reasonable judgment on what potential routes  
2 are, to go ahead and do that, bite the bullet, approach the  
3 states, and let them know that this is a potential route  
4 within their states, and as more information becomes  
5 available, you know, then make that available or make that  
6 known to them, but to make it known to the states what they  
7 know now, their best guess.

8           We certainly recognize the inherent difficulties in  
9 trying to identify routes for an MRS that's not selected. I'm  
10 sure everybody recognizes that, but again, knowing that Nevada  
11 is targeted as a potential site right now, that there are  
12 routes that can be identified right now, and it's--we also  
13 realize it's not a fun thing to do, to go approach some state  
14 and start identifying potential high-level waste routes. It's  
15 a volatile issue, but it's something that's got to be done,  
16 and I think it will, in the long run, help build DOE's  
17 credibility by doing this, the same way Ron Ross's point on  
18 the presentation of both bad information and good information.  
19 It lends credibility to their whole program by laying it out,  
20 laying it on the line.

21       DR. PRICE: Um-hum. And as I understand DOE's position,  
22 it's that the MRS is not identified and it would be easier to  
23 approach the whole question once the MRS location is  
24 identified, and you have some optimism that that might be in  
25 the near future, perhaps.

1           MR. MILNER: We would certainly hope that would be in the  
2 near future, yes. I think at this point we could not so much  
3 identify potential routes, as potential corridor states, and  
4 whether the route heads north, south, east, or west through  
5 the state, I think, could not even guess that at this point in  
6 time.

7           DR. PRICE: Okay. I would like to throw on the table an  
8 issue that the Board has raised a couple of times, and it  
9 seems we put it on the table and it sort of falls off. And  
10 that's the issue of in the operational aspects of the  
11 transportation program, the data bases which will be used for  
12 insuring ongoing identification of potential hazards. In the  
13 safety business, we talk about hazard action triggers, and you  
14 look for parameters which might be tracked and reach some  
15 warning level, or some threshold level; maybe statistically  
16 determined or otherwise determined that would cause you to  
17 say, "We need to take action in this particular area," and  
18 that these are supported by data bases of various sorts, that  
19 the parameters are built and that the data bases are monitored  
20 continuously.

21                   When we have brought up the issue of data bases, I  
22 don't know that this has really either found any traction, or  
23 is something we're on a common ground of understanding about,  
24 and we mentioned that, also, with WIPP, and I got the feeling  
25 that those kinds of data bases are not also being incorporated

1 into the WIPP program, so I wanted to throw that on the table  
2 before both of you, and see what kind of response there is  
3 there.

4           Is this perception that I have about the operational  
5 data bases correct? Because there may be a fairly large  
6 number of--now, WIPP did indicate that there was an  
7 occurrences data base that went beyond transportation, and  
8 just throw this on the table and see what we have.

9           MR. HALSTEAD: I could address this from the standpoint  
10 of routing. I realize there are many different aspects of the  
11 system that you may have in mind, but as you know, over the  
12 last three years, we've supported the development of a  
13 transportation research center at the University of Nevada,  
14 Las Vegas, and it's our intent to rely on them for most of our  
15 routing analysis, probably all of our routing analysis.

16           One of the approaches--while we're certainly  
17 involved with probabilistic risk assessment and its  
18 application to routing, and the development of data bases for  
19 that effort, we've also been trying--using a geographic  
20 information system--to develop the data, the route-specific  
21 data in a way that allows us to do a high degree of locational  
22 analysis for safety planning.

23           So, for example--and we will have a report that I  
24 hope will be out of the printer and you'll see it in about  
25 eight weeks. I know I've made these promises before. I think

1 I'm going to have it out in four, so I'll say eight to ten to  
2 be safe.

3           In that effort, we are not only trying to show the  
4 extent to which data bases are available or can be readily  
5 developed for the larger route-specific risk analysis effort,  
6 but also, for example, using accident histories to identify  
7 specific segments of routes that have unusually high accident  
8 histories, areas, for example, that if they were going to be  
9 used for shipping, we would ask to be included both in driver  
10 training, and perhaps in our emergency response planning, that  
11 we would develop our response plans for the most difficult  
12 locations that we could identify on our routes.

13           Similarly, we're looking at highly-populated areas  
14 where evacuation plans might need special development. We're  
15 looking at the specific subset of difficult to evacuate  
16 locations, like prisons, schools, hospitals. We're also  
17 looking at plotting geographically the location of emergency  
18 response facilities--fire stations, et cetera--to help us  
19 estimate the response time zones.

20           And finally, we're also looking at unusually  
21 ecologically sensitive areas where, in the event of an  
22 accident and, you know, an accident involving a release is  
23 obviously a very small probability, but we think it's much  
24 more likely that you could have an accident in an  
25 environmentally sensitive area where there might not

1 necessarily be a release, but you would have to pay special  
2 attention because of environmental factors, say, to the use of  
3 heavy equipment. So that's one area that we're trying to do  
4 this on routing.

5           Part of our concern with getting shipment-specific  
6 data on the history of civilian spent fuel transportation, and  
7 our interest in developing similar data on, say, Naval and  
8 research reactor shipments is partly to get a baseline and  
9 partly because we think that the simple effort of maintaining  
10 that type of data during the course of shipping campaigns  
11 increases the level of awareness to safety on the part of the  
12 people involved.

13           We've not had much in the way of discussions with  
14 Chris and the people at headquarters on shaping the operations  
15 data base, but we have had a fairly good degree of interaction  
16 with the people in Katie Grassmeier's shop on the development  
17 of the routing assumptions that we should use in our route--in  
18 the building of our route-specific data bases.

19           MR. KOUTS: If my management will allow me to respond,  
20 first of all, as you heard yesterday, was certainly the--  
21 following what happens in the WIPP process--and there was some  
22 discussion yesterday by Gerald Boyd as to the DOE occurrence  
23 reporting system.

24           Basically, through the recommendation of the Board  
25 last year that we develop a transportation system safety

1 engineering program, we indicated to you that we were in the  
2 process of hiring a consultant to help us develop a plan for  
3 such a program, and we have hired that consultant. Mr. Ludwig  
4 Benner, who was mentioned a few days ago, is our consultant,  
5 and this is an issue that we would like him to address in our  
6 overall transportation system safety plan, and we'll look to  
7 his insight as to how we might best bring those data bases and  
8 the development of those data bases into the transportation  
9 program.

10 DR. PRICE: I see.

11 MR. HALSTEAD: Nice choice.

12 To relate this back to the WIPP lessons learned,  
13 what I should have said in prefacing this is that the route-  
14 specific data that we're collecting relative to Yucca Mountain  
15 is, of course, geared to the routing assumptions that I talked  
16 about yesterday; our assumption that a precedent will be  
17 established in the action that the Nevada Department of  
18 Transportation takes in designating a route for exit shipments  
19 from Mercury, but we have also extended that to include the I-  
20 15, U.S. 95 route segments that DOE has discussed using.

21 So I'd say in that case, the fact that we have to  
22 prepare for WIPP has certainly helped us in the standpoint  
23 that it's forced the state process to think in terms of what  
24 alternative routes to going through downtown Las Vegas would  
25 be used for WIPP shipments, and so it's made our job easier to

1 limit the number of--although there aren't that many. It's a  
2 matter of, you know, basically looking at four as opposed to  
3 eight, and also, the list of issues that I included in my  
4 statement yesterday, that we would recommend for data  
5 collection during the WIPP operations reflects the thinking  
6 that we've done to date on the information we'd like to have  
7 in hand as we start developing the OCRWM system.

8 MS. GRASSMEIER: I would like to comment on what Bob just  
9 said relative to the Nevada Department of Transportation work  
10 to identify alternative routes.

11 The State of Nevada knew in 1987 that this kind of  
12 action was going to be necessary, and designated that internal  
13 department to look at alternative route designation, and they  
14 have worked through the University of Nevada at Reno to come  
15 up with these routes.

16 We have worked closely with UNR and have commented  
17 on their report and their activities. We've attended their  
18 update meetings, the public meetings. We have learned a lot  
19 from attending their public update meetings that we have  
20 included in our last internal public update meeting with  
21 anybody in the State of Nevada who cares to attend. So  
22 Nevada, I think, has had heads up on this alternative route  
23 issue.

24 DR. PRICE: Katie, I'd like to ask you what specific  
25 comments you'd like to make, having listened to the WIPP and

1 New Mexico comments of yesterday, and things that may be  
2 lessons learned for Nevada/DOE.

3 MS. GRASSMEIER: I really appreciate being here and  
4 getting this overall viewpoint of WIPP, because I have not  
5 been able to personally attend meetings within about the last  
6 six months, so it was very beneficial to me in general.

7 We, in Nevada, look at the Yucca Mountain as a  
8 potential site for a repository, and I think that I owe it to  
9 my boss and our position, and DOE to make a point of saying  
10 that Yucca Mountain is not the site for the repository. Yucca  
11 Mountain is the site the Congress has designated to study, and  
12 that is our primary goal right now in the State of Nevada.

13 From the standpoint of transportation, I don't have  
14 twelve items to comment on, I only have five comments, or five  
15 areas to comment on.

16 I think that we have an active public outreach  
17 program in the State of Nevada in the Yucca Mountain Project  
18 Office. I think that's because Carl Gertz, the project  
19 manager, knows that interactions with people within the state  
20 are absolutely essential to the success of any project  
21 relative to DOE, for many of the same comments that everybody  
22 has brought to the table today and yesterday.

23 We hold public update meetings in various parts of  
24 the state. We invite the state to attend, and participate in  
25 these meetings, also. We find that there's an avid interest

1 in transportation. We do provide transportation answers;  
2 however, many of our answers are not what the people  
3 particularly care to hear. But at this point in time, we feel  
4 that answering is the most important part of our project right  
5 now.

6           We take advantage of the fact that the Nevada test  
7 site and those facilities are presently in Nevada, and close,  
8 relatively close to Las Vegas. We have tours. We have  
9 visitor centers. We are active in the community with various  
10 programs through the University system in the State of Nevada,  
11 and also, the public education system within the State of  
12 Nevada.

13           I mentioned routes briefly, and our support of the  
14 highway routes. That started by the state in 1987. In 1989,  
15 the Yucca Mountain Project Office published the routes as  
16 identified by the Department of Transportation that will be  
17 used within the State of Nevada. We didn't have any  
18 repercussions to speak of, having announced those routes. It  
19 was public knowledge before we put them into a relatively  
20 small report, and combining that information into one useable  
21 tool had no major impacts.

22           We are doing some rail work. The statement was made  
23 yesterday that this state didn't feel that we would be able to  
24 do a rail route to Yucca Mountain. Presently, we have not, to  
25 date, found any show stoppers in the work that we've found.

1 Nevada does have some physical barriers to a straight shot-  
2 type rail line, but we have to live with that and work within  
3 those parameters, which we're doing.

4           We have a current public dialogue with citizens of  
5 Nevada, as well as elected government bodies within the State  
6 of Nevada. We realize that EIS and the MRS situations, plus  
7 carriers and relationships with carriers will impact our  
8 studies, and we have already made allowance for that kind of  
9 input to our situation. We feel that if we all pull together,  
10 we can make this a successful, useable product, or by-product  
11 for the state, as well as the Department.

12           Emergency response, we are tracking the  
13 headquarter's efforts and what they're doing relative to  
14 180(c). We have extensively used a grant process to get  
15 objective people to look at some of our activities; i.e.,  
16 UNLV, UNR, and we feel that the grant avenue would be a good  
17 way to get an inventory and then evaluation of what is  
18 available, an estimate of what might be needed in addition to.

19           I think that we have an integrated program. We have  
20 a strong technical program which you, Dr. Price, and the Board  
21 have come and heard our technical side of the studies of Yucca  
22 Mountain. We do have, also, a public involvement program,  
23 public outreach. I think that as we come closer to decisions  
24 on the MRS, EIS work, et cetera, that we'll be able to put to  
25 even more advantage than what we've already done some of the

1 lessons learned from WIPP.

2 DR. PRICE: Okay.

3 MS. GRASSMEIER: Thank you.

4 DR. PRICE: Okay. We are approaching within about a half  
5 hour of the scheduled closing time for this round table, and I  
6 know some have departure plans based upon that, so we're going  
7 to try to adhere to that time. So we would like to be fairly  
8 good stewards of the last half-hour that we've got on the  
9 round table, and I'm aware that some at the table have not  
10 made any particular comments, so I want to, first of all, give  
11 the opportunity for anyone who has not made a comment to do  
12 so, and we'll just stop and wait and allow you to if you'd  
13 like to, because I can always go back to Chris.

14 MR. BOYD: I might just, in order to keep your  
15 operational data base thing from falling off the table again,  
16 pursue that just a little bit.

17 We feel like that for transportation purposes across  
18 the Department, that this new data base that we're putting in  
19 place--that the Department's putting in place--of occurrences  
20 is going to go a long way toward giving us a lot of  
21 information about transportation incidences and occurrences.  
22 That is a rather comprehensive reporting system.

23 Now, it does not cover all of the operational kinds  
24 of things that I'm sure that you're interested in as you talk  
25 about that, and I don't know that we have all of the answers

1 on that as far as a WIPP shipment goes at this point. In  
2 fact, I might ask either Bob Spooner or Tom Ward, one, if they  
3 could address anything that we currently have planned in that  
4 arena of keeping track of operational data over at least the  
5 test phase, what our plan is there, because I'm not familiar  
6 with that.

7           However, we do feel that for significant problems  
8 that this operation--I mean, this occurrence reporting system  
9 that we're establishing a data base for will pick that up, and  
10 dig into those occurrences rather significantly and will, at  
11 the end of the test phase, say, give us a pretty good handle  
12 on what actually happened and why, what was done to correct  
13 it, and those kinds of things, but that's not quite as  
14 complete as I think you might have been asking.

15           So, Tom, Bob, one of you guys?

16       MR. WARD: I just have two things, I think. Everybody  
17 should realize that for every shipment we make, it is tracked  
18 by TRANSCOM. At the end of the shipment, that file is  
19 archived. You can, a year later, go back and review all the  
20 messages that were sent back and forth between the driver and  
21 the central monitoring room. You also have access to the log  
22 the central monitoring room keeps, and on your question, Dr.  
23 Price, about, I guess, high incident areas of accidents, and  
24 so forth, the Western Governors' Association has developed a  
25 weather protocol to notify us of adverse conditions we may not

1 be aware of, and I believe one of the tables in there is watch  
2 out for the eastward side of whatever mountain, what have you.

3           And as I recall--I think it's dropped by the  
4 wayside--I think the states were also going to give us the  
5 locations of high accident rates along the routes, and I  
6 haven't seen that or heard it discussed for a long time now,  
7 but the intent was to make the drivers aware of this, where  
8 the high-risk areas were, both for accidents as well as  
9 weather considerations, but--so we have the vehicle inspection  
10 reports we can duplicate, we can replay the trip, show what it  
11 contained, and we have the CMR logs to record the messages  
12 that were sent back and forth. I think that's pretty  
13 comprehensive, really.

14       DR. PRICE: Is there anything in this system which would  
15 pick up occurrences such as finding a tie-down loose, and if  
16 then this occurrence happens with a certain frequency, you  
17 would have a flag on it on the data base to pop it up in front  
18 of you, and that this tie-down loose is occurring, and then  
19 you could investigate to see whether or not action is  
20 necessary?

21       MR. WARD: We would find that out in our vehicle  
22 inspection reports. As I mentioned yesterday, the drivers do  
23 a pre-trip, a post-trip, en route, and I mentioned that the en  
24 routes, since they're so frequent, it's an entry in the log  
25 book unless they find something wrong.

1 DR. PRICE: Okay, but what I'm addressing here is not  
2 depending entirely upon a person's ability to discover what's  
3 going on in the logs, but actually a tracking system which  
4 will pop these things up for you so that you become aware of  
5 them, and not depend upon the insight of someone looking at  
6 logs.

7 MR. BOYD: The Occurrence Reporting System is designed to  
8 do that. Now, what--we're just now building this thing and  
9 trying to define the threshold criteria for transportation  
10 incidents is a bit difficult because, traditionally, the  
11 Department has dealt mostly with site problems from that  
12 perspective. But transportation is part of this new system.  
13 There are some general threshold guidelines right now, and  
14 criteria as to what would be categorized as an off-normal  
15 occurrence, an unusual occurrence, or something of that  
16 nature.

17 Just how minor of an event will get into that  
18 system, I'm not exactly sure of yet. Things that are of a  
19 safety concern are required to go into the system. That's  
20 part of its purpose, so it's not just an emergency tracking  
21 system, but is also a system that tracks safety issues. Tie-  
22 down problems certainly are safety issues. I don't think that  
23 we have played this out far enough yet, and that's something  
24 that we have to work on on the WIPP shipments. Once we get  
25 this data base fully established--which is supposed to happen

1 around the first of April--to determine exactly what kinds of  
2 things are going to get picked up and put into that system--  
3 now, whatever gets picked up and put into that system, though  
4 --and it will be all sorts of safety concerns--then there is  
5 a mechanism to very quickly and easily sort and summarize and  
6 do causal analyses and determine trends and--as to what's  
7 going on.

8           So if we're able to work out the kinds of criteria  
9 and thresholds that we want to see to go in there, we think  
10 that data base will be very helpful.

11       DR. PRICE: This comment that came from the floor this  
12 morning about debriefing drivers might be a rich source for  
13 maintaining that kind of data base information.

14       MR. CARLSON: Dennis, I, you know, I don't bring Chris  
15 along to do my talking for me, plus I didn't bring my view  
16 graphs, so I haven't said much yet, but you certainly picked  
17 up one point.

18           I think that comment from the floor was a very good  
19 one and offered an opportunity for your, what you call  
20 protective action triggers to actually get road condition  
21 information that may be very up-to-date, not significant  
22 enough to go into an occurrence reporting system for DOE-wide,  
23 but help the drivers and help the planning.

24           I also--I think that the post-trip inspection which  
25 will be recorded, I think, provides a very good vehicle and I

1 would hope that we do have enough sense to put that on a data  
2 base and look at trends and look at recurrences of tie-down  
3 problems and things of that nature, and I'll say if I'm still  
4 involved at that time, I'll see that it happens. I mean, it's  
5 pretty easy to--I mean, it's an opportunity to gather that  
6 information.

7           I'll also give a little of my perspective on the  
8 meeting. I think, you know, all of us here are very  
9 interested in safe and efficient transport of nuclear waste,  
10 and it's the sort of question about how to best achieve this.  
11 What I saw here, more so than I've seen in other meetings--  
12 and I think probably you would appreciate it--is there's a  
13 great deal of emphasis on accident prevention rather than  
14 strictly counting on the cask to provide safety, since it's  
15 designed to withstand any accidents.

16           And I know in your early meetings with the  
17 Department, I think you had a lot of concerns in this area  
18 from the tone of your questions and things, and I'm pleased to  
19 see it, also, and I think the OCRWM program will take  
20 advantage, to the extent we can, on what's going on in WIPP  
21 and the driver qualifications, and all these areas that do  
22 provide additional confidence that not only you'll survive  
23 accidents, but you'll do what you can to preclude them  
24 occurring, and I think that's an important lesson for us to  
25 appreciate.

1           I think the states are very interested and that's, I  
2 think, a large area where they have input. I think the  
3 weather alerts, the areas of designating safe store areas if  
4 there are problems, or if there's a reason to lay over. I  
5 think it's a legitimate role that the people who know the  
6 areas, you know, the federal government can come in and make  
7 some real serious mistakes thinking something's going to be  
8 this way ten years in the future, and I also agree, as early  
9 as feasible, on participation.

10           I mean, the insights and the actual conditions  
11 belong to the people of the states. We have--I threw safe,  
12 efficient in, because we keep running into constraints. We  
13 have the ratepayers' oversight bodies. Everyone is watching  
14 to say, you know, don't spend any unnecessary money, and  
15 participation costs money. So we try to figure out how best  
16 to use our resources. We've found the regional groups up  
17 front, and then we hope to get to more state-specific.  
18 Whether we should be doing more earlier is a, you know, a  
19 question of debate, and we've heard a lot of that here, but I  
20 will say I appreciate the forum and the insights. I think  
21 they've been very valuable, and I'm sorry I didn't have view  
22 graphs.

23           MR. ROBISON: Dr. Price, again, to keep your question of  
24 data bases on the table to the extent possible, the Commercial  
25 Vehicle Safety Alliance, of course, is doing the research

1 that's going to be looking at the frequency of inspection  
2 question, and they are going to collect a good deal of  
3 information about how the vehicle components hold up and  
4 deteriorate over distance, over time, over certain kinds of  
5 terrain.

6           I would encourage you to--I'm sorry the CVSA isn't  
7 here, and you may, at some future point, want to understand  
8 more clearly what is going to be in that data base.

9           The other thing I'd like to comment on is that,  
10 again, our priority, as WGA states, has first been to build  
11 the integrated operational procedures that we believe are  
12 necessary between the states and DOE to assure the safe  
13 transportation of the shipments. Our next priority will be to  
14 start looking and evaluating the effectiveness of those. We  
15 are just now beginning to discuss that. We will be doing more  
16 work on that as the initial test shipments are being made, and  
17 we'll hopefully be in a--we will be in a better position to  
18 evaluate our program on an ongoing basis as the full shipping  
19 campaign begins.

20           That kind of program evaluation, frankly, is going  
21 to be a challenge for us. What I hope to be able to do is  
22 steer our group from getting buried in the minutia of detail  
23 and being overwhelmed by data, but rather, being--having the  
24 wisdom to look at the key indicators that talk about the  
25 success of the safety program. That's going to be a

1 challenge, but that is the challenge we're looking for next.

2           MR. NEILL: You know, the importance of not relying  
3 solely on paperwork is a guarantee that systems work is  
4 terribly important, and I think your suggestion, Mr. Chairman,  
5 of whether it's an inspector general-type or a fine is really  
6 important, is that a non-transportation incident in May, a  
7 120-ton slab fell from the ceiling in Room A-2 at the WIPP  
8 site, and following that, elaborate procedure--and someone had  
9 been in the room just 18 days before, but following that,  
10 elaborate procedures were developed, written--requiring  
11 signatures for access, and red zones and blue zones, and--to  
12 prevent unauthorized access, and just last month I walked up  
13 to the door to the room and jerked on the lock, and it was  
14 open. And so, you know, simply relying on paperwork is not a  
15 total guarantee that things would be done.

16           And one other comment or question I have is that  
17 when we talk about funding for these things, it's sort of an  
18 ugly subject, but I was amazed that Nevada had pledged today  
19 that they would pay for necessary tests that they thought  
20 would be necessary on the casks.

21           The question I have is directed to DOE; namely,  
22 you've received funds through the Nuclear Waste Policy Act  
23 from the ratepayers of the utilities for the commercial waste.  
24 What are you doing about the defense's high level waste  
25 shipments, which must be also--the Department is committed to

1 ship in the NRC-certified casks? Has the Department obtained  
2 funds from Congress? And I guess I'm saying, bluntly, you  
3 know, what are you doing about putting up your fair share on  
4 this? Nevada's pledged some money, so that's a pretty good  
5 sign.

6 MR. MILNER: You're very correct. The Department is  
7 obligated to pay for the cost of disposal of defense waste,  
8 and in fact, this month there was the first payment into the  
9 Nuclear Waste Fund for that disposal. The Department is  
10 currently working internally to establish a full payment  
11 schedule for that waste, but I think we're getting into an  
12 area that's much beyond the topic of discussion here this  
13 morning.

14 MR. ROSS: One other comment I'd like to make on the part  
15 of costs and that, too. I don't know that this public  
16 confidence cost is very high. One of the things that I know  
17 the western states have worked diligently at is keeping that  
18 cost well within reasons, and in fact, probably under cost  
19 some things and paid out of state funds because of the buy-in  
20 issue. I mean, we want to put up our fair share, too. I  
21 mean, a million and a half dollar program over ten states is  
22 not very much when you consider it's buying equipment, as well  
23 as people, as well as plans. So it can be done at a  
24 reasonable cost, so I don't know that the cost factor here  
25 should be one that we could get real exercised over, so--but I

1 think it's well worth the dollars you're investing.

2           I also would say that the earlier you bring the  
3 states in, the lower that cost is ultimately going to be,  
4 because the states are willing to get involved and put up  
5 their fair share, versus when they're hit at the end, there's  
6 no way for them to come up with the resources to do that. I  
7 mean, state legislatures just don't have a lot of monies to  
8 program on an instantaneous basis.

9           DR. PRICE: Anyone else now who has not spoken?

10           (No audible response.)

11           DR. PRICE: All right, I think someone was leaning  
12 forward. Okay, go ahead.

13           MR. SPOONER: Bob Spooner. I just want to express the  
14 gratitude for the WIPP/DOE people and the WIPP/Westinghouse  
15 people for the opportunity to attend this Panel. We thank you  
16 for that opportunity, and we offer our help to you in any way  
17 that we can to assist you in developing your program as you  
18 move down the road.

19           DR. PRICE: We appreciate that very much, and thank you  
20 for being here.

21           MR. WARD: If I can, sir, I'd like to--I was thinking  
22 about your occurrence reporting, and I think we support that;  
23 trying to think about what entries would be there in the last  
24 three hundred and some-odd thousand which we've experienced,  
25 and we have broken one tie-down, and it's been upgraded three

1 times now. It's twice as strong. You saw the crack. That's  
2 been replaced. We haven't had that repeat.

3           In the prototype trailer, we had a fender support  
4 break. That's been redesigned; haven't had a reoccurrence.  
5 We've had two flat tires, one bent air hose in the windshield  
6 wipers, two leaky power steering pumps, and that's it.

7       MR. BOYD: That's the Tom Ward data base that's talking.

8           (Laughter.)

9       DR. CARTER: It's minimization in the extreme.

10       MR. ROSS: That comes into our second part of our  
11 statement; uneventful, and that's what we're really looking  
12 for.

13       DR. PRICE: Yes, and to prevent an occurrence of a higher  
14 order thing when some of these data bases are going along and  
15 nothing--without sufficient frequency, nothing pops up, but if  
16 the data base is complete and there is something in the system  
17 that creates a systematic function, like a failure for  
18 maintenance, or maybe over a long term, the effect of  
19 corrosion or whatever, then things start popping up that have  
20 not popped up in the past over a long term in a campaign, and  
21 then you eventually get the statistics that would present  
22 itself, and the flag would be tripped, and you would say,  
23 "This is something that we should look at."

24           And the monitoring aspect of it is--may be done over  
25 a long term, and doesn't depend upon human insight completely

1 to pick up this, and so low frequency occurrence events  
2 shouldn't pop up, and yet, they should not necessarily be left  
3 off the data base, because there may be a systematic change  
4 somewhere along the line that changes a low occurrence to a  
5 higher frequency.

6 MR. KOUTS: If I could make one comment, and it was--

7 DR. PRICE: I knew we had to come back to Chris here.

8 MR. KOUTS: I really meant to say this at the beginning  
9 of my remarks earlier, but certainly, speaking from an  
10 individual within the Department who deals with transportation  
11 issues, within the Office of Civilian Radioactive Waste  
12 Management, we're very supportive of the WIPP efforts and  
13 their transportation program. They've done many, many things  
14 that are very positive, and I think the best thing that could  
15 happen to our transportation program is to have their  
16 transportation program operational and successful. I think  
17 that'll pave the way, if you will, for our shipments, make our  
18 way a little bit easier, and certainly make the resolution of  
19 issues as we go forward, certainly, I think, go very smoothly,  
20 and in that regard, I want them to know, on the record, that  
21 certainly I'm very supportive--I know my management is, too--  
22 of their efforts, not only within their transportation area,  
23 but also with their overall facility.

24 DR. PRICE: I would like to ask the Board members if they  
25 have any wrap-up comments you'd like to make?

1 DR. VERINK: I have one for Tom, but maybe I should talk  
2 to him later. I think he ought to pay attention to the  
3 cylinders on the air ride. It looks like there's some  
4 external corrosion which may cause perforation on some of  
5 those if you don't watch out.

6 DR. CARTER: I have one comment, Mr. Chairman, and I  
7 think it's been a very good meeting as far as I'm concerned.  
8 I think a number of the things that have been brought up are  
9 of value to the other parts of the program, so I think WIPP,  
10 indeed, has set some examples for others to follow or to  
11 emulate.

12 But I'd like to close it on a light note, and make  
13 sure people also remember one other thing, and that is, how  
14 you break up a Iraqi bingo game. You call out the number, B-  
15 52.

16 (Laughter.)

17 DR. PRICE: I want to express our real appreciation to  
18 all of you who participated, and so willingly. It's been very  
19 pleasing for us to try to put this together in that there was  
20 a great deal of willingness on everyone's part to cooperate on  
21 it, and we do thank you.

22 And I think if there is an overriding theme that  
23 came through this, I believe it was get the states and  
24 localities involved as early as possible in everything that  
25 you possibly can. I think that was kind of a theme that ran

1 through almost everything that was said and responded to, as a  
2 matter of fact, and if there is any last comment from anyone  
3 in the audience, if you've got heartburn, relieve it now.

4 (No audible response.)

5 DR. PRICE: All right. Then--yes?

6 MR. DOUGLAS: I'm Alfred Douglas, the City of Las Vegas.

7 I'd like to voice a support for the Oregon proposal  
8 for tandem trucking. I think if you look at this on a  
9 perspective of redundancy, there are some tremendous  
10 advantages. Although you have two drivers aboard the truck at  
11 any given time, only one of those gentlemen is probably awake.  
12 When you're talking a 30-40 hour trip, somebody's got to get  
13 some sleep sometime.

14 Also, the redundancy of systems, TRANSCOM, although  
15 it's shown a tremendous reliability, may have a failure. Two  
16 trucks in tandem, you've got a backup. The whole system is  
17 redundant, so that's all I have.

18 DR. PRICE: Just to comment maybe to elicit a response  
19 from you if you have one, if they're running in tandem and  
20 they come into an environment that's exceptionally hazardous,  
21 let's say, an icy downhill slope, or extreme fog, or a chain  
22 collision, then both of them are involved, versus one involved  
23 in a tandem setup. Is there any comment on that kind of an  
24 observation?

25 MR. DOUGLAS: Well, I'm sure with the driver training

1 that these gentlemen have, that they will have enough  
2 awareness to properly separate themselves. You know, I think  
3 that, at least from my perspective, there's many, many more  
4 pluses to having them together than running separately. You  
5 know, I think that there--the training program and everything  
6 they've done is exemplary. I think that that's just one more  
7 that we can do, and the high-level program needs to look at  
8 that, also.

9 DR. PRICE: Appreciate your observation very much, and  
10 thank you for it.

11 Well, I wondered if Jerry O'Driscoll could sit  
12 through two days of meeting without a comment.

13 MR. O'DRISCOLL: Speaking as a interested citizen and a  
14 taxpayer, I do want to make a couple of general observations,  
15 and I hope they're understood in the proper perspective.

16 I've been involved in this general area for a number  
17 of years. There have been some very interesting incidents in  
18 the past that I think the younger people need to be fully  
19 aware of, particularly in the routing subject. We got  
20 involved in a very public-debated routing problem years ago in  
21 transporting nerve gases from their storage facilities to the  
22 coast, for dumping in the ocean. It became a political issue.

23 Now, I'm not saying the Santa Fe situation is  
24 political, but keep in mind the decisions were made by  
25 Congress on the routing, contrary to all the best analysis,

1 the best risk study everybody involved could do, and so we  
2 routed around the City of Atlanta. We had to go over and go  
3 through Macon. We found out after the whole transportation  
4 episode was over that our risk analysis showed that by  
5 supposedly avoiding the exposure of the Atlanta population, it  
6 certainly aggravated the exposure for the Macon population  
7 twentyfold, so--and that was due to the alternate route  
8 stability, probability of an incident, probability of a  
9 derailment, probability of an accident, and early in the game  
10 here, somebody was mentioning your road, your highways need  
11 upgrading for certain segments.

12           Be very careful about coming off that interstate on  
13 a political basis and going over secondary routes, because by  
14 that very action, if you haven't done a thorough risk  
15 analysis, you're going to find, after the fact, or when the  
16 first pile-up occurs with the school bus, or the derailment,  
17 or whatever, that the probability of the incident was not  
18 adequately addressed. So that is a critical mistake, and that  
19 also brings to mind balance in our efforts here.

20           I'm very sensitive to all the DOE efforts. I know  
21 what they've gone through in certain different program areas.  
22 I'm certainly appreciative of the state representatives'  
23 concern and of this public reaction and opinion. I know how  
24 thorough they have tried to do their job. If there's ever  
25 been a case of overkill in a situation of transportation, it

1 has been the transportation of radioactive materials and their  
2 wastes.

3           Has the same amount of concern and interest gone  
4 into the transportation of gasoline tank trucks in your towns,  
5 on your highways? Has the same concern gone in for LP gas  
6 shipments in your communities? What is your real probable  
7 loss of life going to be? Where are the people getting  
8 killed? I could tell you right now in every one of your  
9 states--and your governors should be well aware of it--at  
10 railroad grade crossings, where they impact and strike  
11 gasoline tank trucks.

12           Now, another area to look at, in emergency response,  
13 who has the authority, who has the responsibility? The  
14 governor. His primary concern is to protect the public. Do  
15 we have plans that are thorough? Do we have trained response  
16 people who are going to be on the scene directing activities?  
17 Do we have competence out there? Do we have someone that can  
18 really speak for the governor? Do we have the plan and the  
19 effort and the training of a similar amount of emphasis we're  
20 giving to this technological development and testing?

21           Now, as a citizen, I see a tremendous imbalance  
22 here, and the worst part of is, the State of Idaho, or  
23 Washington, or Oregon is being subjected interminably to  
24 exposures to materials that are sitting there for years,  
25 risking the present population. Have your analyses taken that

1 into account?

2           There is where we're going to have it. I found out  
3 some years ago, doing a risk analysis, one of the major  
4 sources of loss of life in transportation in the country is  
5 falling aircraft striking innocent civilians on the ground,  
6 compared even to rail transportation of hazardous material.  
7 They were killing thirty to none over a period of ten years.

8           We need to bring that into balance, and I didn't see  
9 much balance. I saw a bunch of great concern expressed, and  
10 no doubt, with integrity, but I just want to offer the opinion  
11 that the public can be extremely vicious when you're found to  
12 have misdirected their interests or their emotion, or they  
13 don't understand the technical--and God help you, if you don't  
14 make those facts available, you're going to pay the fiddler.  
15 You all see that every day, because you get the phone calls.  
16 But don't ever, I hope, pay all the emphasis over here, and  
17 have no emphasis on your real responsibilities of protecting  
18 your citizens in your community in all aspects of  
19 transportation.

20           Thank you.

21       DR. PRICE: Thank you very much, Jerry; appreciate that.

22           Any other comments?

23       MR. ROBISON: Mr. Chairman, I feel obliged to respond.

24       DR. PRICE: Okay.

25       MR. ROBISON: Mr. Driscoll, northwest Doan and northwest

1 Balboa Streets in northwest Portland are closed for gasoline  
2 trucks across the Union Pacific rail line from the Chevron  
3 plant at this time. That's the result of work, safety work  
4 going on in the City of Portland. We have established routes  
5 for trucks hauling hazardous materials in the City of  
6 Portland. We have established incident command systems  
7 throughout the State of Oregon to handle accidents involving  
8 all hazardous materials. We are upgrading our training  
9 programs for hazardous materials, but we are not focusing  
10 exclusively on radioactive materials.

11 DR. PRICE: You do have a nerve gas transport--

12 MR. ROBISON: Actually, no. We're going to incinerate  
13 the nerve gas in Oregon. We're going to incinerate it within  
14 the State of Oregon.

15 MR. ROSS: Yeah. It's--all nerve gas right now is being  
16 incinerated at the site, except Johnston Island, which we can  
17 get into if you really want to.

18 DR. PRICE: Well, I know Hawaii's concerned about that  
19 and they're 850 miles from Johnston Island, or something like  
20 that.

21 MR. ROSS: You've got it, yes; along with a few other  
22 territories.

23 MR. HALSTEAD: I'd just like to add in response to the  
24 gentleman's comment that the Hazardous Materials  
25 Transportation Uniform Safety Act, for which none of us have

1 come up with an acceptable acronym yet, I think establishes  
2 for the first time a process at the federal level that  
3 recognizes precisely these issues, and that the way that we  
4 deal with hazardous materials is not to be more lenient in the  
5 way that we regulate nuclear materials, but to take those  
6 lessons we've learned, and make damn sure that we apply them  
7 to those much more common; one might say ubiquitous shipments  
8 of highly dangerous materials of all types, and I think this  
9 is another one of those lessons learned situations where, for  
10 example, the experience of routing with HM-164 is going to be  
11 extremely useful in applying those same lessons learned, and  
12 there are a whole bunch of other mandated studies and rule-  
13 makings and safety precautions.

14           It's long overdue that the attention be paid to  
15 those other materials. I'm glad to see that it's finally  
16 happened.

17       DR. PRICE: One more comment, and then we'll adjourn.

18       MR. NEILL: I have just a general comment, Mr. Chairman,  
19 and unrelated to this.

20           I think in our efforts here to evaluate fairly the  
21 risks associated with transportation, we must not lead the  
22 public to believe that the risk is zero, even though these are  
23 very low probabilities. We can all recall reading Wash 1400  
24 in the reactor area, where the probability of a release was  
25  $10^{-12}$ ,  $10^{-14}$ , and then when a release occurred, minor as it may

1 be, there was an enormous precipitation of concern that  
2 resulted from it. And even though many of us making a living  
3 on these low probability, high consequence plus on  
4 distributions and stuff, I'm also reminded--and it's kind of  
5 along the lines of what Jerry was saying--you can't just use  
6 these numbers blindly.

7           If you look at the frequency of airplane crashes  
8 inside the fence at the WIPP site, you'd conclude it was very  
9 low. There was one ten years ago, so the frequency is  $10^{-1}$ .

10       DR. PRICE: If you say so.

11           Okay, B-52, and we'll be dismissed.

12           (Whereupon, the meeting was concluded.)

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