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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

U. S. DEPARTMENT OF TRANSPORTATION

and

U. S. NUCLEAR REGULATORY COMMISSION

sponsored

SPENT NUCLEAR FUEL TRANSPORTATION SEMINAR

Friday, 2 August 1985

Americana Congress Hotel,

Chicago, Illinois

The seminar was reconvened at 9:00 a.m., pursuant
to notice, *G. Wayne Kerr*,
~~Heyard G. Shealy~~, presiding.

WRBagb

P R O C E E D I N G S

MR. KERR: I'm glad to see everybody survived, including those on the unfortunate bus. There was a little delay, we're sorry about that.

Our ^{rapporteurs} ~~reporters~~ this morning I think will not have extremely lengthy reports and I expect then we will have a fair amount of time for some discussion of these items. So we will move promptly into their reports.

The first will be by Nancy Kirner, who is with the Washington Department of Social Health Services, selecting and designating alternate highway routes.

Nancy.

MS. KIRNER: The discussion group began with a review of the major concepts of the alternate route designation guidelines and then it went on to -- I don't think it even got through those guidelines before it turned into heated discussions on route selection, risk minimization, minimization of accident consequences and the coordination among the states. I think there is one thing that we can firmly conclude and that is that there were no firm conclusions.

There was no time to reach consensus; consensus is a large involved -- everybody feels good about a statement. And we did not have the time to achieve consensus on many of these issues.

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1 But several strong feelings came out of the
2 meeting and that's what I will report to you.

3 First of all, the routing guidelines provide a
4 good starting place if the state wants to designate
5 alternate routes but they shouldn't be used in a vacuum or
6 in a strictly cookbook manner. If states wish to designate
7 alternate routes, they should begin with a technical
8 analysis of alternate route selection.

9 But that technical analysis also needs to be
10 modified and include legitimate intangible
11 statutorily-constituted values such as Indian sacred lands,
12 national parks, historical properties, environmental
13 sensitive areas and the like. And that was a very difficult
14 concept to come up with, that there are some values that are
15 hard to put a dollar sign on, hard to play the what-if games
16 with extremely low probability accidents.

17 Another clear thing that came out was that DOT
18 does not see itself and it has probably not been given the
19 Federal statutory responsibility to play a Federal overseer
20 role in assuring that the states have designated alternate
21 routes in a reasonable same method and that they do meet
22 lowest risks.

23 So there was some clear sentiment I thought that
24 there should be an overall determination of the safest route
25 or confirmation from a Federal authority in some way that

WRBagh 1 the safest route has been chosen. But even more so, there
2 should be a compilation, once those alternate routes are
3 chosen, some Federal compilation of what they are. Nobody
4 knows what they are.

5 There should be a Federal coordination of sharing
6 information, that the Department of Transportation has
7 computerized records of all the shipments that have been
8 used and the routing that has been used for hazardous
9 shipments.

10 Shippers also have a large data base of what are
11 good routes and these are tried-and-true routes, less
12 problem area routes. And that information that the shippers
13 have should be made available to the states and Federal
14 agencies.

15 So there is a great clamor for we need to talk
16 together, we need to possibly have more meetings, sharing
17 information, publishing the information we have on routing.

18 And there was one other.... I think that's the
19 summary.

20 In summary, we decided -- and this was fairly
21 easy to decide -- that the stuff has to be transported
22 through some place and the routes chosen should be the
23 safest one, and that was about the easiest thing that we
24 decided.

25 Thank you for your time.

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(Applause.)

MR. KERR: You can always count on Nancy to be concise and to the point.

Thank you.

Our next ^{rapporteur,} ~~reporter,~~ ^{Bruchmann,} George ~~Robinson,~~ Michigan Division of Radiological Health, and he reports on the session on effective inspections.

^{BRUCHMANN:}
MR. ROBINSON: Thank you, Wayne.

In distinct contrast to Nancy's presentation, I am going to be lengthy and diverse and as confusing as I possibly can.

(Laughter.)

First I wanted to recognize that no charge was given to any of the subgroups and we were left with a responsibility which took an inordinate amount of time trying to figure out what we wanted to talk about. In this regard, Chairman Terry Lash at yesterday's session -- Terry had to leave, incidentally -- decided the best way to hone in on the issues that we wanted to discuss was to have each individual in the audience, in the subgroup, to identify their concern.

Now to give you an idea about subgroup makeup, it consisted of 49 individuals, 16 represented state radiation control programs, 15 state emergency services or transportation services program, 8 represented Federal

WRRagh 1 agencies, 8 industry representatives, one from an Indian
2 tribe and one from a state policy council.

3 I am going to quickly run through the remaining
4 issues on two different standpoints. The first is I would
5 like to decide the concerns that were expressed by the
6 various people and I will try to be as concise as I can
7 about those concerns and then, number two, the
8 recommendations that ensue from the expression of concerns.

9 The first concern is the relative hazard of spent
10 nuclear fuel shipments compared to the health risks from,
11 number one, other hazardous material shipments and, number
12 two, unnecessary radiation from medical diagnosis and
13 therapy must be recognized and reconciled.

14 Concern number two: funding must be provided for
15 state, local or Indian tribe inspection of spent nuclear
16 fuel shipments.

17 Number three: uniform inspection procedures must
18 be development and the associated need for uniform training
19 of state, local or Indian tribe inspectors and uniform
20 instrumentation must be provided.

21 Concern number four: some states felt that the
22 point of origin and destination inspections should suffice
23 for the purpose of satisfying residents of the so-called
24 corridor states. Others felt the political pressures
25 associated with being a corridor state mandate the need for

WRB:agb 1 intermediate inspections by those states. In any case,
2 uniform inspections are needed.

3 Concern number five: although the complexion of
4 the national picture concerning commodity flow, including
5 spent nuclear fuel currently and, after 1988, when DOE takes
6 title to the spent fuel in the country, the complexion of
7 that picture is unclear. Bands of high accident rates have
8 emerged already and they involve states which may want to
9 increase inspection activities for that very reason; that
10 the particular state may fall within the band that has
11 emerged concerning high accident rates across the country.

12 Concern number six: coordination may be
13 difficult because of the plethora of Federal and state
14 agencies and the associated jurisdictions; for example, no
15 less than four Federal agencies, including NRC, DOT, DOE and
16 FEMA, and at least two or three state and local agencies and
17 Indian tribes could potentially be involved in the
18 coordination effort. The sheer number of agencies and
19 jurisdictions is a great concern that was brought up during
20 our subgroup.

21 Now a lot of discussion ensued, some of it quite
22 heated, and the recommendations that the subgroup came up
23 with -- which were reiterated this morning -- include the
24 following:

25 Number one: each state and Indian tribe should

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1 at least begin the process of assessing the need to develop
2 a physically visible, politically responsive and technically
3 defensible role in assuring the safe passage of spent
4 nuclear fuel through the state or Indian reservation. In
5 other words, it wasn't mutually agreed that every state
6 should have a role, but the recommendation here is that each
7 state and Indian tribe should go back and assess the need
8 for their prioritizing that as a need in that particular
9 jurisdiction.

10 Number two: in an effort to optimize shipment
11 efficiency and safety a nationwide cooperative inspection
12 system should be developed, including the development of
13 uniform inspection procedures for all modes of transport and
14 the provision of uniform inspection equipment and training.

15 With regard to training, it is recommended that
16 the U.S. DOT Transportation Safety Institute provide the
17 focal point for such training.

18 Number three: efforts of the U.S. Department of
19 Energy to address the institutional aspects of spent nuclear
20 fuel transportation in the upcoming 1985, fall 1985
21 Institutional Report on Transportation to Congress and the
22 associated seminar to be developed by the State of Illinois
23 pursuant to a DOE grant should be used as a springboard for
24 developing the recommended uniform inspection system.

25 Recommendation Number Four: with regard to

WRBagb 1 funding for all activities associated with this effort,
2 including monitoring, the auditing of transporters, the
3 inspection and subsequent enforcement, states and Indian
4 tribes should encourage DOE to utilize the nuclear waste
5 fund, which was created pursuant to the Nuclear Waste Policy
6 Act of 1982 for the safe and effective management of the
7 nation's high level radioactive waste. Spent nuclear fuel
8 transportation is clearly an integral part of safe and
9 effective management and therefore should be covered under
10 the auspices of the nuclear waste fund.

11 Recommendation number five: information sharing
12 between the cognizant Federal agencies -- among those four
13 that I mentioned -- state and local agencies and Indian
14 tribes must be developed. This particular mechanism of how
15 we should share information is something that we felt could
16 probably better be addressed during the subsequent seminar
17 which I mentioned earlier. I have just heard rumors about
18 it being held in the fall and that's the type of thing that
19 we could take up at that point.

20 That's all I have.

21 (Applause.)

22 MR. KERR: Thank you very much.

23 Our final ^{rappor teur} ~~reporter~~ is Bill Dixon, from the Oregon
24 Department of Energy and his report is on the emergency
25 preparedness and response subject.

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1 MR. DIXON: I am going to report on the major
2 issues that we discussed. We did reach no consensus on any
3 of the issues; however, I think the items that I will report
4 on reflect most of the opinions that were expressed. And we
5 focused on three particular areas: that is plans and
6 procedures, training and equipment.

7 The need for effective plans and procedures.
8 There was discussion that plans and procedures should be
9 developed not just for the transportation of spent nuclear
10 fuel but for all radioactive material and such plans and
11 procedures should be integral to those for other hazardous
12 materials.

13 The discussions indicated that there is a wide
14 variation in the extent and composition of plans and
15 procedures today at the state and local level and that there
16 may be a need for more protective generic guidance on how to
17 develop an effective program.

18 As a minimum, the discussions were that plans and
19 procedures should clearly have definition of state and local
20 roles, involve industry, should be based on a cooperative
21 and coordinated response, should include a simple and common
22 notification procedure and process.

23 It was also discussed that we should consider the
24 use of regional assistance or regional hazardous response
25 teams. Those folks who, with additional training and

WRB:agb 1 equipment, could be responding to the scene and assisting
2 first responders before the state technical teams may
3 arrive.

4 We talked about procedures and the discussions
5 focused on specific procedures for first responders,
6 emergency medical technicians, hospitals and state
7 responders.

8 For first responders, the discussions indicated
9 that the procedures should be limited, that they should
10 focus on the initial actions that the first responders need
11 to take to perform life-saving and fire fighting activities,
12 to secure the area and to protect themselves from radiation
13 or contamination. And, following those initial actions,
14 that they should request technical assistance.

15 The second major area is the need for effective
16 training. The discussion focused on training for first
17 responders, emergency medical technicians, hospitals and the
18 regional assistance or hazardous material response teams.

19 Again for first responders, people felt that the
20 training should include just basic information on radiation
21 and the first response activities and that such training
22 should be coordinated into a more comprehensive training
23 program on hazardous materials. Initial training is not
24 enough, there needs to be periodic retraining.

25 The discussions indicated that there apparently

1 WRBagb 1 is no standardized training program being used by the state
2 and local agencies, that several folks have gone off and
3 developed their own specialized programs.

4 The third area focused on the need for equipment
5 for first responders. Some folks believed that the old
6 Civil Defense equipment should be distributed and used by
7 first responders. Other folks had concerns about the
8 usefulness of the information that would be obtained with
9 such instrumentation. Apparently there is no standard
10 program for distributing this equipment to first responders
11 and, for those folks who do distribute it, there is no
12 standard program to make sure that the information that will
13 be obtained will in fact be useful.

14 We discussed the needs for other specialized
15 equipment for first responders and it appeared that the
16 majority of the people felt there were no needs for
17 additional specialized equipment. For example, we talked
18 about anti-contamination clothing and respiratory protection
19 and people stated that it was their opinion that first
20 responders should use what they have readily available:
21 firefighting turnout gear, gloves and self-contained
22 breathing apparatus if it exists; but that first responders
23 should avoid radioactive contamination, to not engage in
24 activities where they will get externally contaminated and
25 that they ought to use their common sense that they use in

WRBagb 1 any activity and stay upwind.

2 Some of our members stated that they believe that
3 there should be a policy that lifesaving activities should
4 have a higher priority than long delays which could incur
5 because first responders are concerned about radioactive
6 contamination.

7 However, even then first responders must always
8 be aware that there could be other things at the scene of
9 the accident, smoke or hazardous material, which could
10 require them to take actions so that their life is not in
11 jeopardy when they perform a lifesaving activity.

12 I had a difficult time reaching any conclusions
13 from our discussion, one of the things^e that we found
14 interesting was that there was very little discussion of the
15 Federal role in emergency preparedness and response. I
16 think that means one of two things: either we all
17 completely understand and are comfortable with the Federal
18 response or that very few of us understand what the Federal
19 agencies plan to do and how that is going to be useful. I
20 tend to think it is probably the latter.

21 The second conclusion could be that there is
22 little consistency among the emergency preparedness
23 programs, that many of us are out re-inventing the wheel and
24 some of the wheels are coming out different sizes and not
25 all of them are round.

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1 Some state and local agencies have developed an
2 effective program for coordinating their response activities
3 but that most folks lack the glue that's necessary to hold
4 together all of the organizations that would be involved in
5 emergency response and that is not just the states and the
6 locals but the Indian tribes, Federal agencies and the
7 affected industry.

8 I think the fourth conclusion that could be drawn
9 is that spent fuel -- emergency preparedness for spent fuel
10 should not be a separate program, that it should be part of
11 a broader program dealing with all radioactive material and
12 that to be effective it should be integrated into those for
13 other hazardous materials. There were questions raised
14 about why it is being tied into programs for nuclear attack,
15 since the only similarity is that it involved radioactive
16 material.

17 Our group developed no formal recommendations, so
18 let me serve one up and see if I get thrown off the stand
19 here: because of the conclusions that we reached that
20 appear to say that there is no coordinated and cooperative
21 approach, I would recommend that we develop some sort of
22 national steering committee on emergency preparedness and
23 response dealing with all hazardous material and that
24 representatives from local agencies, states, Indian tribes,
25 Federal agencies and industry participate in such a national

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1 steering committee, that the role would be to foster the
2 cooperation and coordination that we need for effective
3 emergency preparedness and response. In the area of plans
4 and procedures this group could develop models for all of
5 the groups. The plans would provide the common glue to make
6 sure that they are all consistent and the procedures would
7 say how we are going to implement each actions to help each
8 other as opposed to being at odds with each other.

9 In the area of training, this committee could
10 help develop and distribute a coordinated and model training
11 program for all levels of emergency responders, and those
12 programs should be tailored to meet the needs and the
13 desires of those folks who are receiving the training.

14 For equipment that we should have a consistent
15 national program for the distribution and use of equipment
16 for first responders, regional technical assistance for
17 hazardous material response teams, for the state response
18 teams and others.

19 Now this idea is not completely new, the United
20 States Department of Transportation has recently begun a
21 Hazardous Material Advisory Committee. At this point my
22 understanding is that they are concentrating on the funding
23 aspects for emergency preparedness and response.

24 My recommendation would be to use that group and
25 expand it and strengthen it to deal with all aspects of

WRBagb 1 emergency preparedness and response for all hazardous
2 materials.

3 Thank you.

4 (Applause.)

5 MR. KERR: Thank you, Bill.

6 Now we have a pretty good amount of time here for
7 discussion of this and possibly some other matters. But
8 first let's see if there is any discussion, any questions
9 addressed to these three individuals if you want elaboration
10 or to make comment. And first I would like to recognize
11 those in the front section there, the designated invitees.
12 Is there anybody who would like to ask a question or raise a
13 concern with any of these individuals?

14 MR. WOODBURY: David Woodbury from Wisconsin.

15 Being a bureaucrat I love committees. FEMA and
16 DOT have sponsored a national workshop in April dealing with
17 hazardous materials issues in which there was discussion
18 about radioactive materials issues. Instead of creating a
19 new committee, I thought that we should be cognizant of the
20 fact that this does exist and that there should be talk with
21 the DOT and FEMA and see how they could integrate some of
22 their ideas with that group instead of creating something
23 new. I don't know how many people are aware of it. But
24 being a bureaucrat, we always create committees and I don't
25 think there's any sense in creating a new one.

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MR. KERR: Thank you, David.

I think there was a question back here.

MR. LONGWELL: I'm Gil Longwell of the National Association of Towns and Townships. Most of Mr. Dixon's comments, while I can't disagree with the goals that he is suggesting or the recommendations, I think it is essential that the record show that they are his recommendations and not those reached by the particular subgroup.

MR. KERR: Thank you.

Other comments or questions?

Bob Underwood?

MR. UNDERWOOD: Was there any discussion of the efficacy of the escorts for the states on the fuel rod shipments?

MR. KERR: Are you addressing that to a certain individual?

George?

MR. UNDERWOOD: On inspections.

MR. KERR: George was on inspections.

Go ahead.

MR. BRUCHMANN: With regard to inspections, the answer is not to my knowledge. I appeal to any members of the subgroup to identify whether or not they recorded any discussion in that regard. I did not.

MR. UNDERWOOD: I just might add a comment that

WRBagb 1 this puts a lot of political pressure. When one governor in
2 one state fears that another governor in another state has
3 the answers, he has to answer to his voters. When he says
4 well the State of Wyoming is providing this work then the
5 State of Idaho should provide this work. I think there
6 should be some evaluation of whether that is really needed.

7 MR. KERR: Other comments?

8 MR. FREDERICK: Bill Frederick of Northern States
9 Power Company. I have a question for George Bruchmann
10 concerning your reference to bands of high accident rates.
11 Could you clarify what you meant by that?

12 MR. BRUCHMANN: That particular description was
13 provided by a representative from the Office of Technology
14 Assessment. It was new to me but apparently there is a
15 report being generated which describes bands across the
16 country originating in New Jersey and across the Appalachian
17 states through the Mississippi Valley up into beloved and
18 still sovereign Michigan --

19 (Laughter.)

20 -- the point being that the statistics which
21 exist today indicate that most states in those bands have
22 apparently higher than national average accident rates and
23 that most states effectively within those bands may want to
24 consider increased inspection activities.

25 MR. KERR: Is the lady from the Office of

WRBagb 1 Technology Assessment here and would she like to speak to
2 that?

3 MS. PAGE: Our report is still in the process of
4 being prepared. The data that I referred to yesterday is on
5 accidents and incidents involving all types of hazardous
6 materials, not only radioactive materials.

7 I think that the gentleman interpreted the point
8 I was making accurately, that is, the states that do have
9 the higher rates of accidents might well concentrate their
10 energies on, particularly motor carrier safety efforts, it
11 is these that are involved in most of the accidents and I
12 think the efforts might range from increasing inspection and
13 enforcement activities to perhaps some examination of the
14 infrastructure.

15 For example, I don't know, this is mere
16 speculation but it may be that the roads in Pennsylvania --
17 which does not have a good accident record at all -- are old
18 -- the Pennsylvania Turnpike is certainly old -- and that
19 this may be a contributing factor to the accidents.

20 I would also like to comment that the
21 recommendations or the summary of the -- some of the
22 discussion from the emergency response group does parallel a
23 number of the findings that our report will show.

24 MR. KERR: Thank you very much.

25 Mr. Tedford?

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MR. TEDFORD: My question is to Bill Dixon.

Bill, what I understood you to say was that we could consider calling regional teams in to respond prior to states responding to an accident of spent fuel. Would you expand on that? Is it a DOT team or how do you envision that?

MR. DIXON: What I was referring to was some of the discussion we had about when I say regional teams, teams maybe within a county or a particular area of the state who could respond and assist first responders before the state came on.

MR. TEDFORD: I would like to expand that concept a little bit if I could as well. You may rest assured in Arizona if we have a spent fuel type accident that we will desire, request and highly look forward to participation of NRC or DOE in this particular incident because for the record this material is Federally licensed, coming from a reactor, it's on the state highways and going to some sort of a repository that is usually the Federal Government. We have no problem with a response to it but I think there are also some things that are required there by a Federal entity.

MR. KERR: Other comments?

Larry McDonald?

MR. MC DONALD: I'm Larry McDonald of Wisconsin

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1 Radiological Health. I would like to point out in our
2 subcommittee meeting, our workshop meeting and before
3 we hear calls for more stringent committees and that kind of
4 thing that right in this corridor there has been developed
5 inspection routines and emergency response procedures that
6 are already acceptable at least to I know Illinois and I
7 know it is true for Wisconsin that involve quite a bit of
8 shipping both from Northern States Power Monticello Plant
9 and the Morris ^{to} ~~at~~ Point Beach and West Valley ^{to} ~~in~~ Point
10 Beach. These inspection routines are available here. I
11 think Illinois has written up theirs and distributed it;
12 very similar to what was done in Wisconsin. And I would
13 hope that these -- in fact I'm quite sure the NRC has
14 approved of these procedures because they were anxious to
15 stop doing 100 percent inspections. And we are quite
16 satisfied with Illinois and Wisconsin taking up the slack
17 and at least providing an amount of inspection.

18 And I would just hate to see people running off
19 and forming steering committees without first looking at
20 what is already being done. I think you might also find
21 available emergency plans that were written along this
22 corridor that are available; and one in particular for
23 hospital resource people, emergency people.

24 So there again I think much of this uniform
25 inspection work has been done and there are many, many plans

WRBage: 1 written for emergency response that are available and I
2 would hope that these would be distributed first.

3 Thank you.

4 MR. KERR: Thank you, Larry.

5 Are there other comments? Is there anybody back
6 in the back who hasn't had a chance to comment on this?

7 (No response.)

8 MR. KERR: If there are no other questions on
9 this we still have some time and I think we might spend it
10 fruitfully, a few minutes anyway -- one of the problems with
11 any session, the Chairman has a timetable and yesterday when
12 Heyward Shealy's session was going on there were some people
13 who had additional questions and I would like to take this
14 opportunity -- I do not know whether people who can properly
15 respond to them are still here but anybody who had questions
16 yesterday, I think it might be appropriate to try and
17 address them at this time since we do have some flexibility
18 here.

19 I know Al Tapert was one and I know there was
20 another one or two, so why don't we see what you have and
21 see if there is somebody that can respond.

22 MR. TAPERT: Al Tapert, Delaware.

23 My question yesterday was what is the population
24 radiation dose measured from these monitoring several
25 hundred shipments in the last few years in terms of, say,

WRBagb 1 you know, millirem per person per hundred feet of shipment
2 moved or something like that.

3 MR. KERR: I guess I can ask, one, is there
4 somebody from NRC who can speak to that? And I would ask Al
5 Grella.

6 Jim Shuler from DOT might be appropriate also.

7 MR. GRELLA: Al Grella, NRC.

8 I believe that the question is as to whether any
9 estimates have been made of population doses from the recent
10 shipping campaigns, is that correct?

11 MR. TAPERT: Measured values.

12 MR. GRELLA: I am not aware of any specific
13 estimates of medial population doses from specific
14 campaigns. These issues and questions have been evaluated
15 in a number of different reports. The base document is
16 NUREG-0170 from several years back. There are other formal
17 reports that go into this aspect -- somebody else can
18 correct me or add to this.

19 MR. O'BRIEN: Ken O'Brien, State of Wisconsin.

20 I wanted to add if I could along with the
21 population estimates, Wisconsin, as Larry said earlier, we
22 have done a number of inspections of spent fuel shipments
23 along the State of Illinois and the State of Minnesota and
24 for the Point Beach shipping campaign the inspectors had
25 approximately 100 millirem exposure for their inspection

WRBagb 1 activities relative to those state inspections that I have
2 been talking about.

3 MR. KERR: For the whole campaign?

4 MR. O'BRIEN: For the whole campaign.

5 MR. KERR: Thank you.

6 Would anybody from DOT like to speak to any
7 results on radiation measurements they might have in
8 response to that question?

9 Mr. Shuler?

10 MR. SHULER: We have no such data available.

11 MR. MC DONALD: McDonald, NRC.

12 I might give you a summary of the exposure
13 results in NUREG-0170. This was an Environmental Impact
14 Statement that was conducted by the NRC in 1975, it was
15 completed -- started in 1975, it was completed in 1977. In
16 that particular study it was based on a survey of all
17 radioactive materials shipments at that time. The packages
18 were in the neighborhood of 2.2 million packages shipped.
19 Included in that were about 250 spent fuel shipments. The
20 estimates of the population total exposure was somewhere in
21 the neighborhood of 10,000 person-rem. If you will take
22 that 10,000 -- and that 10,000 person-rem was equally
23 distributed between the occupational workers and the general
24 public at large.

25 If you make a few basic assumptions, such as the

WRBagb 1 transport routes in the corridor along the population
2 centers and the basic assumption that there are some 200
3 million or more people in the United States and say that
4 10 percent also of those would be involved, the average
5 comes out to be one-half millirem per person.

6 MR. KERR: Thank you.

7 The next question.

8 MR. POE: Kevin Poe, Indiana State Police.

9 My question I wanted to ask yesterday dealt with
10 Mr. Cooper or Mr. Gregory. I got it answered after the
11 session in the hall. It dealt with the percentage of out of
12 service violations found on nuclear fuel shipments. I was
13 interested in how many there were. And also we talked about
14 responding with improper equipment. There was concern about
15 the type of equipment that should be utilized in response to
16 a spent fuel inspection or incident.

17 I also want to thank everybody who came up to me
18 after the conference yesterday and expressed a concern about
19 getting up here for 20 minutes and not being recognized. I
20 want to thank you for allowing me to ask the question.

21 MR. KERR: Is either Mr. Cooper or Mr. Gregory
22 here today to respond to that for the benefit of the entire
23 audience?

24 (No response.)

25 Would you care to try and paraphrase what they

WRBagb 1 told you?

2 MR. POE: Clark Mortensen from the Illinois State
3 Police is here and he conducts these inspections and I think
4 he is more qualified to answer the question.

5 MR. MORTENSEN: Clark Mortensen.

6 Basically you are asking how ^{MANY} of our shipments
7 were placed out of service for motor bureau safety
8 violations. And we have approximately no more than 10 to 15
9 out of 280-some shipments.

10 MR. KERR: Thank you.

11 Are there other questions that somebody would
12 like to raise at this time.

13 MR. MILLAR: Fred Millar from the Environmental
14 Policy Institute in Washington.

15 One of the things that I thought of in our
16 meeting, our subgroup meeting which I didn't get any
17 clarification on, is that there seems to be several states
18 that have gotten letters from the NRC recently asking them
19 to designate some non-interstate routes as preferred routes
20 for radioactive material shipments. These letters went out
21 from NRC and apparently several states responded rather
22 quickly with letters saying we hereby designate these routes
23 as preferred routes. And I don't think that actually meets
24 the requirements of HM-164 in terms of going through a
25 process of analyzing alternatives and certainly doesn't seem

WRBagb 1 to meet the requirements of the jurisdictions involved.

2 It may be just a very minor matter but I think it
3 may also be an important precedent in terms of how states go
4 about designating routes and I would just like some
5 clarification from the NRC and/or from the DOT about whether
6 in fact they think states can simply designate routes by a
7 letter from the State Highway Patrol to NRC.

8 MR. KERR: Mr. Nulsen^e, would you like to speak to
9 that for the NRC?

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1 MR. NULSEN: It is true that NRC has received
2 letters from about seven or eight states indicating that
3 they had designated certain alternate routes,
4 state-preferred routes. In our attempt to get these
5 designated routes, we have indicated to the states that they
6 should use the guidelines of the DOT routing book.

7 We accepted the response of the states and I
8 would also like to make it clear right now that the
9 state-designated routes are handled in the same manner as
10 the interstates in that we do a complete route survey in our
11 vehicles for state-designated routes.

12 The state-designated route has to fulfill
13 safeguards requirements. Now we don't go back to the state
14 and police the DOT routing. We don't say that-- We don't
15 inspect the method that they've used, but we do run the
16 route as we do with the interstates.

17 MR. KERR: Thank you.

18 Would somebody from DOT like to respond?

19 Mr. Chu.

20 MR. CHU: Sherwood Chu, from DOT.

21 In answer to the question as to whether any
22 state can go ahead and designate preferred routes, there are
23 certain qualifications that a designator on behalf of the
24 state must satisfy. I don't have all the specifics, but
25 basically I know of one certainly, and that is safety

WRBeb 1 analysis as exemplified by the guidelines that we've been
2 talking about, and overall safety enhancement criteria.

3 But in addition to that, the designating agency
4 is appointed by the Governor or one of his designees, and
5 that agency must have the power to enforce whatever is
6 selected and decided upon over the state.

7 Thirdly, we do have a provision in there that the
8 state should consult with all of the local jurisdictions
9 that would be affected by such a decision.

10 MR. KERR: Thank you very much.

11 Yes, Ma'am?

12 MS. ZALMAN: I am Rachelle Zalman, of the
13 Illinois Safe Energy Alliance and the Radioactive Waste
14 Transportation Coalition.

15 I wanted to ask about the status of the Wisconsin
16 petition for rulemaking that was brought before the NRC in
17 December, to make changes in the rulemaking regarding public
18 participation in route selection, shipments, and a number of
19 other issues that were raised in the petition.

20 I don't know what the status of it is and I would
21 like to ask.

22 MR. KERR: I'm not quite sure who to call on, but
23 somebody from NRC ought to be able to speak to that.

24 MR. ROUSE: I am Lee Rouse from the NRC. Maybe I
25 should pass to Chuck because I personally am not familiar

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1 with the details of the petition.

2 I am aware that the petition for rulemaking filed
3 by the State of Wisconsin was noticed in the Federal
4 Register for comments, and it is under review now by the NRC
5 Office of Research. In other words, it is under review but
6 nothing has been -- no decision has been made on it at this
7 time.

8 MR. KERR: Let me say to the young lady that we
9 do not have anybody here from our Office of Research on
10 this, and I guess the best we can say is that at least it is
11 under review, and public comments are being considered. I
12 don't think anybody here knows what the timetable is.

13 Other questions?

14 (No response.)

15 I guess we've exhausted this. We are ahead of
16 schedule, and I think maybe if we-- Oh, one question in the
17 back.

18 Will you come to the front microphone, please?

19 MR. SMITH: My name is *Van* Smith. I'm from the
20 State of Texas, the Governor's office.

21 There are three points that I would like to make
22 if I may, and I would like to direct them to the people who
23 basically planned and organized the conference we have had
24 here today and the past two days.

25 First of all, I want to thank you for putting it

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1 on. It is always difficult to conduct a meeting like this,
2 and I think you've done a good job on it. The coordination
3 has been very good.

4 There are two points, however, that I would like
5 to offer in a constructive manner, and I hope they are taken
6 that way, too.

7 The first point is that I think there has been a
8 clear attempt to limit the discussion, the scope of the
9 discussion that has occurred here, and I believe that the
10 caliber of the people that we have here making presentations
11 and participating in the audience justifies a more
12 comprehensive treatment of the transportation issues than
13 was allowed.

14 And I hope that in the future if meetings similar
15 to this are held that there won't be this -- what appeared
16 to me to be an attempt to avoid controversial issues and
17 avoid addressing the transportation issues that do in fact
18 have impact.

19 That's the key point that I want to make.

20 The other one is a less important one but one
21 again that I think needs to be addressed, and that is if you
22 are going to make a distinction between designated state
23 attendees and non-designated attendees, that that should be
24 made clear when the invitations are sent out rather than at
25 the meeting finally saying that there are a second class of

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1 attendees and a first class, and as in the case of one of
2 the previous questioners, not offering him the same
3 opportunity to ask questions as was offered to the
4 officially designated attendees.

5 (Applause.)

6 MR. KERR: Thank you.

7 I will respond to that briefly.

8 Let me just say that the invitation that went out
9 from the NRC at least to certain state officials said "We
10 invite you to send somebody who can speak on behalf of the
11 state on transportation issues." And if that meant
12 representing a diversity of views within the state, we would
13 expect that that individual would check out all of the
14 appropriate agencies.

15 It was certainly not meant to imply that any of
16 you are second-class citizens and so forth, but we felt, in
17 view of the nature of that invitation, we should give some
18 deference to those who presumably were designated by their
19 states.

20 The second one, limiting the scope of the
21 discussion, that is always a problem in developing any
22 agenda. And we had to fashion it in some way that we felt
23 appropriate to cover what we thought we could in the time
24 period allowed.

25 Now I am sure there could be improvements and we

WRBeb 1 will seek to make those in any future one. I guess I didn't
2 really think we were trying to avoid any controversial
3 questions but, rather, to have it somewhat structured.

4 Mr. Chu, would you like to speak on this issue
5 first before we hear from Mr. Aaroe?

6 MR. CHU: I just want to add with respect to the
7 first question raised as far as an attempt to limit
8 discussion, that certainly is not the case. And indeed, I
9 was going to make this part of my closing remarks because I,
10 too, sensed in the past two and a half days that what a full
11 two and a half days it has been, and that many people here,
12 because of the diversity and because of the size, have not
13 had an opportunity to carry on as much discussion as people
14 would like to have had.

15 Now with respect to the motivation on the part of
16 the people proposing the seminar, both our agencies had been
17 approached by individual states and by individual agencies
18 within the states to come to their states and explain to
19 them that federal regulatory scheme, the rationale, and the
20 implications of the implementation of the program.

21 We have responded to these requests as best we
22 could, but in the past year or so it was becoming a rather
23 large burden for us with respect to our resources, and I am
24 now speaking primarily of manpower resources.

25 And so we felt that we should convene a

WRBeb 1 conference and invite all of the people who have operational
2 responsibilities in this whole subject area of spent fuel
3 transportation, and get them together. We recognize that
4 the people who come here all have a diversity of background,
5 a diversity of responsibility, and to go with that, a
6 diversity of the knowledge, if you will, to carry it out.

7 Nevertheless we thought it would be important to
8 get rid of -- get some of the background out of the way.
9 And the unfortunate outcome, of necessity, of all of this is
10 that the lecture part, and I do recognize that it is a
11 lecture to many of you and that's unfortunate, therefore
12 limits the discussion.

13 Now it is our hope that at subsequent meetings
14 that all of this be out of the way and that we can come in
15 here and get down to work in earnest.

16 MR. KERR: Thank you. Very well put.

17 Mr. Aaroe.

18 MR. AAROE: Bill Aaroe, from West Virginia.

19 I don't have any question, but I have a request.
20 I would like to have the proceedings of this session
21 compiled and mailed out as soon as possible.

22 MR. KERR: Let me tell you we do not plan to
23 publish the proceedings of the total meeting. AS we
24 indicated, you know, it would be a rather lengthy
25 transcript. And it will be available in the public document

1 WRBeb 1 room.

2 I have given some thought, however, and
3 consideration to providing the summaries that these three
4 people provided this morning in as suitable a fashion as we
5 can manage and send to the attendees. And I think we can
6 handle that.

7 Now I don't have anything on the other discussion
8 taking place here, but I think I can address the one from
9 these three people.

10 Any other comment or question?

11 (No response.)

12 I will just add one comment:

13 We have we hope a fairly full list of attendees
14 that has been prepared, and it will be available at the
15 break on the back tables in the anteroom. So if you would
16 like that, you are welcome to have one.

17 The other is that we are a few minutes ahead of
18 time so I suggest that we try to get you ahead of schedule
19 at the end, and maybe we'll reconvene at 10:20. That will
20 give you about 17 or 18 minutes.

21 Thank you.

22 (Recess.)

23 MR. KERR: I have a report from one of my
24 volunteer marshalls that most of the people are now back in
25 this room, so I think we will begin the next session. This

WRBeb 1 is the last session.

2 There are a number of important considerations
3 and issues which are relevant to the transportation of spent
4 nuclear fuel but which did not fit neatly into the headings
5 of packaging regulations, carrier regulations, inspection
6 and enforcement or emergency response, but they are,
7 nonetheless, very important. And that is what this session
8 is devoted to.

9 Our first speaker this morning is Mr. Leland
10 Rouse, who is the Chief, Spent Fuel Licensing Branch of the
11 Nuclear Regulatory Commission. He will speak on why must
12 spent fuel be moved now.

13 Mr. Rouse.

14 MR. ROUSE: Thank you.

15 You know in his opening remarks, John Davis noted
16 that the topic of this seminar is a controversial subject.
17 Now I appear near the end of the seminar with what I think
18 is one of the more provocative titles. For that I think I
19 owe my thanks to a couple of my NRC cohorts who helped
20 arrange the session. Thank you, John Cook and Bill
21 Thompson.

22 Actually the primary focus of my remarks is aimed
23 at providing you with a general overview of the spent fuel
24 storage status at light water power reactors, and the
25 actions being taken or considered by utilities to provide

WRBeb 1 for additional storage needs. This information may provide
2 you with a perspective of possible future transport of LWR
3 fuel prior to the availability of a repository or perhaps
4 monitored retrievable storage by DOE.

5 After a number of years of relatively few
6 shipments of LWR spent fuel, a number of people have noted
7 that several shipment campaigns were initiated over the past
8 few years involving a significant quantity of LWR spent
9 fuel. These campaigns were described basically by Al Grella
10 yesterday, and briefly, the reason for the shipments are as
11 follows:

12 The spent fuel at West Valley was originally sent
13 there for reprocessing. The fuel, after being held in
14 storage for the past ten or more years, is being removed by
15 the owners in connection with the DOE high-level waste
16 solidification project at the facility which is to lead to
17 the final decommissioning of the only commercial
18 reprocessing plant ^{that} ^{ed} ~~operating~~ in the United States.

19 The return of the fuel from Morris to the Point
20 Beach reactor up in Wisconsin was a business decision by the
21 utility based strictly on storage costs.

22 The transfers of spent fuel from the Cooper
23 reactor in Nebraska and the Monticello reactor in Minnesota
24 to the GE Morris storage facility involve the settlement
25 between General Electric and the utilities of old fuel

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1 service contracts made when reprocessing of spent fuel was
2 projected.

3 There is one other shipping campaign that has
4 recently been initiated that perhaps Al didn't mention
5 yesterday. This is one by DOE, moving spent fuel from
6 Virginia Power's Surry nuclear site out to Idaho under a
7 cooperative agreement between the utility and DOE executed
8 under provisions of the ^{Nuclear} Waste Policy Act.

9 The fuel will be used in the development and the
10 demonstration of dry storage of spent fuel in metallic
11 casks. This campaign may involve up to about 130 fuel
12 assemblies and some 40 shipments over the next one to two
13 years.

14 There have been questions regarding the need for
15 at least some of these shipments. For example, in
16 connection with the plans of transfers of spent fuel
17 assemblies from the Monticello reactor to Morris,
18 Governor Earl of Wisconsin requested the NRC to conduct a
19 formal inquiry into the need for the shipments.

20 In his reply to Governor Earl, Chairman Palladino
21 of the Commission pointed out that NRC's regulatory
22 responsibility regarding the transportation of nuclear
23 retrievables does not include the authority to determine the
24 need for the shipment under these circumstances.

25 In this case as in other campaigns, no NRC

WRBeb 1 licensing actions were required by the involved parties to
2 conduct the shipments. The shipments are made under
3 authority of existing licenses, with the exception of the
4 shipments being made to Idaho from the Virginia Power Surry
5 site which, as I noted, is being conducted under DOE
6 authority.

7 A little earlier there was a question on the
8 status of the petition that was subsequently filed by the
9 State of Wisconsin. As I indicated, this petition requested
10 the NRC to change its rules to allow state governments and
11 other interested parties a greater opportunity to comment on
12 the need for nuclear waste shipments, and the safety and
13 environmental consequences associated with such shipments.

14 As I indicated, the Commission has it under
15 review but no decision has been made on the rulemaking
16 petition.

17 Now most of the shipments I've referenced have
18 involved a responsibility for storage of fuel. What is the
19 storage situation at reactors?

20 At the end of 1985, nuclear power reactors will
21 have generated about 13,000 metric tons of spent fuel.
22 Essentially all of this fuel is stored in the reactor
23 basins.

24 In response to a question from the floor
25 yesterday, I indicated there is only one type of GE Morris

WRBeb 1 storage facility. The fuel from West Valley is being moved
2 out, as we said, so that takes care of that one.

3 DOE has a few assemblies in Nevada at a site that
4 has been there for demonstration again of dry storage
5 technology, and they will end up with perhaps as much as a
6 hundred tons of fuel at Idaho for these coming
7 demonstrations of dry storage technology.

8 Other than that, all of the fuel is at the
9 reactors. By 1998, there will be about 40,000 tons of spent
10 fuel.

11 The Nuclear Waste Policy Act of 1982 clearly
12 established that the nuclear utilities have the primary
13 responsibility for interim storage of the spent fuel
14 pending acceptance by DOE at a repository or perhaps at a
15 monitored retrievable storage facility, MRS. The Act did
16 provide authority for DOE to accept up to 1900 tons of spent
17 fuel for interim storage as a last resort to maintain
18 orderly reactor operations.

19 To obtain such federal storage, the NRC must make
20 a determination that the utility has diligently pursued the
21 licensing of storage alternatives, including reracking of
22 existing pools, rod consolidation, addition of new capacity
23 such as pools or dry storage modules, and transshipment
24 within the utility system.

25 Under these limitations, DOE and NRC anticipate

WRBeb 1 little, if any, use of this federal storage provision.

2 Now to provide the necessary interim storage, the
3 utilities to date have relied on reracking of existing
4 storage basins to more effectively use available space. The
5 NRC has approved over 110 applications for reracking since
6 the mid-1970s. Obviously, a number of reactors have been
7 reracked two or more times. Through reracking, most
8 reactors have storage capacity into the 1990s.

9 There are a few reactors that will require the
10 use of other methods to meet storage needs yet in the 1980s.
11 Rod consolidation in existing pools is being considered by
12 some reactors, although standard use of this technology in a
13 reactor pool has not yet been licensed by the NRC.

14 For some of you, let me explain rod
15 consolidation as envisioned for the reactor pool.

16 Rod consolidation is an operation where the
17 non-fuel bearing hardware is removed from the bundle and the
18 loose rods that result are placed in a cannister. It turns
19 out that you can get all of the rods from two assemblies
20 into one cannister that neatly fits in the same storage slot
21 in the reactor racks. Theoretically therefore, you can get
22 a two-for-one increase in your storage capability.

23 However, a number of reactors will be limited on
24 this particular technology because of structural
25 considerations.

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1 One or two applications for rod consolidation are
2 expected in the next year.

3 Dry storage modules, particularly metal storage
4 casks, are also of high interest as an alternative storage
5 mode. With respect to dry storage, we have under review a
6 number of Topical Reports and cask designs by potential cask
7 vendors. After NRC approval of the Topical Report, the
8 Report can be referenced by license applicants for use of
9 the casks at specific sites, and the safety features of the
10 casks do not need to be reviewed again.

11 We have recently issued our initial approval of
12 the dry cask storage design, although this particular cask
13 is expected to be used only in the storage demonstration
14 because of its limited capacity.

15 We expect to approve yet this month a Topical
16 Report on a cask design selected by Virginia Power Company
17 for use at its Surry site. This will enable us to complete
18 our review of the Virginia Power license application within
19 the next couple of months, the first filed with the NRC for
20 dry storage of spent LWR fuel.

21 We have under review Topical Reports for four
22 other cask designs, as well as a Topical Report on
23 horizontal concrete modules for dry storage of spent fuel.
24 The concrete module design has been referenced in a license
25 application filed by Carolina Power and Light for its

1 WRBeb 1 Robinson 2 reactor site.

2 It should be noted that most of these storage
3 cask designs are intended for transport as well, although
4 only one vendor to date has initiated any formal action with
5 the NRC to lead to transport certification. These are rail
6 type size casks weighing about 100 tons or more, with spent
7 fuel capacities much higher than the current generation of
8 casks because they are designed for spent fuel that has
9 decayed for at least five years.

10 Transshipment of spent fuel within a utility's
11 system is an option included in the Nuclear Waste Policy Act
12 as a method for utilities to alleviate storage shortfalls.
13 While three utilities have requested authority from the NRC
14 to receive and store at a reactor site fuel generated at
15 other reactor sites within the system, these same utilities
16 are actively pursuing or considering onsite fuel storage
17 alternatives.

18 Transshipment is not expected to be a significant
19 factor in the overall storage situation.

20 In summary, it does not appear that the on-going
21 or recently-completed shipping campaigns with LWR spent fuel
22 are a forecast of shipping needs of the next decade. While
23 we can expect some movement of LWR spent fuel for test,
24 demonstration and evaluation purposes and perhaps some
25 limited transshipment within a utility's system, generally

1 WRBeb 1 spent fuel will be maintained at the generating site until
2 DOE is prepared to transfer it to the respository or MRS.
3 The movement of the large quantities of spent fuel in
4 inventory at the reactors now is not projected to begin
5 until at least 1996.

6 Thank you.

7 (Applause.)

8 MR. CHU: As I said earlier, these topics do not
9 fit neatly into any particular category. I think it would
10 be well to entertain questions now at the end of each
11 speech.

12 Are there any questions?

13 Yes, sir.

14 MR. MOBLEY: Mike Mobley, of Tennessee.

15 I guess to sum it up, do I understand what you
16 are saying is that there is questionable need to be
17 concerned about the spent fuel transportation as an
18 increasing thing, and there is even less need to be
19 concerned about the fact that we are not going to have
20 enough electric power if we just say we are not going to
21 move the spent fuel, we can handle it at the reactors? Is
22 that what you're saying?

23 MR. ROUSE: What I was trying to do is to give
24 you a factual picture of the storage situation at reactors.
25 Congress in the Nuclear Waste Policy Act did provide DOE

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1 with authority to proceed with a repository. We are
2 certainly all aware of the difficulties that are being
3 encountered in the siting and the basic construction and
4 operation of a repository.

5 Congress also provided the option perhaps but has
6 to specifically authorize the MRS.

7 All I am trying to say is that the reactors now
8 are capable of providing for their own needs in this next
9 decade. However, the utilities also feel quite strongly
10 that the federal government has made a commitment to begin
11 to take that fuel off their hands at the end of this next
12 decade.

13 MR. CUNNINGHAM: Clearly when DOE takes title to
14 this fuel, large amounts of it will be shipped. Containers
15 and casks for these shipments have to start to be designed
16 now to be available in 1996. This is a long process through
17 design, testing, and so forth. We all must be aware of and
18 look toward that time when fuel will be shipped in
19 substantial quantities.

20 So what Lee summarized was simply the current
21 situation. There are going to be large shipments in the
22 future, and we have got to prepare for that now.

23 MR. TEDFORD: Tedford, from Arizona.

24 I was under the impression before coming here
25 that the Morris site was sort of a national thing for spent

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1 fuel, but what I heard yesterday was essentially that
2 General Electric is receiving fuel that they have sent out
3 and let people use the energy from it and then took it back.
4 My question is:

5 Is there any PWR spent fuel out there, or just
6 BWR?

7 MR. ROUSE: Let me stop and think.

8 The Point Beach fuel was there. That's a PWR.
9 And it has been moved back to the Point Beach reactor. I am
10 honestly not certain. They have stored PWR fuel, I think.

11 We have an answer I think in the back of the
12 room.

13 MR. STRASMA: Jan Strasma, Region III, NRC.

14 There is spent fuel from San Onofre in
15 California, and spent fuel from Connecticut Yankee in
16 Connecticut that has been stored at Morris.

17 MS. ZALMAN: This is sort of a large question.
18 It isn't only with regard to nuclear transportation per se,
19 but it concerns where nuclear transportation fits into
20 energy choices made over the period while the nuclear waste
21 program is growing.

22 You mentioned the figures of 13,000 metric tons
23 in 1985 to something like 40,000 metric tons by the end of
24 the century. I think of it in terms of people's ages. When
25 my nephew is 17 these shipments will be beginning. We will

WRBeb 1 be into a new era, obviously, with regard to dealing with
2 nuclear waste.

3 But to what extent is the burden of nuclear waste
4 being considered in terms of the front end of the choice on
5 whether or not to produce electricity generated by the
6 nuclear option? In other words, my view is that for the
7 future, this is probably going to be taking a larger toll,
8 both in terms of financial, manpower and just the quality of
9 life in terms of the activity or the frequency of activity
10 of having hazardous material on our roads and on our
11 trains.

12 So to what extent can you comment on the current
13 thinking on choices, about production of electricity and
14 alternative choices being made by utilities across the
15 country in this area?

16 MR. CHU: Does anybody want to respond to that?

17 Let me just say one thing:

18 I can't respond to you, obviously, because my
19 expertise is very, very limited, but let me go off on a
20 limb and make just one observation, and that is that no
21 single energy source is risk-free.

22 We do have just only so many different kinds of
23 possible energy sources. Most widely used is petroleum, and
24 we know what the situation vis-a-vis petroleum is, why
25 experts disagree as to whether we are going to run out of

WRBeb 1 oil.

2 Ten years ago the prediction was that we would
3 run out of oil by 1985. We are now in 1985 and so clearly
4 we haven't run out of oil yet, but the end will be some time
5 in the early part of the next century. We have a price to
6 pay vis-a-vis petroleum in terms of geopolitics, and so on,
7 in the Middle East and everywhere. I won't get into option.
8 I will get back into my bureaucratic mode.

9 Another possible source of energy that is
10 widespread is coal, but that is not risk-free. So that we
11 as a nation, -- and I am now speaking as an individual
12 rather than a DOT employee -- that we do have to strike some
13 kind of balance and that we do recognize the risks that are
14 entailed in the nuclear option.

15 I will stop right here.

16 MS. ZALMAN: Do you view that the utilities still
17 conceive of efficiency in solar and geothermal and the other
18 less risky opportunities are still trivial? Is that your
19 conception?

20 MR. CHU: Well, my conception is that each one of
21 the options has its costs, and right here I'm referring to
22 costs in the most generalized sense of the word, both
23 economics, safety, health and environment. And we are
24 trying to -- "we" collectively are trying to strike some
25 kind of a balance. And by that I mean we are struggling to

WRBeb 1 strike that balance.

2 It is not a very simple thing, certainly not to
3 me at all. Okay? And some of the things that look
4 potentially very attractive, that do seem to entail with it
5 low cost as far as safety and health and environment, solar
6 and geothermal, we are at a point where the economics are
7 not very attractive.

8 And in the end when society does make a choice,
9 we are talking about making a choice along economic lines.
10 That's not something we can do terribly much about.

11 It is not a very specific answer but--

12 MS. ZALMAN: That's all right. Thank you.

13 MR. BOYLL: Jamie Boyll from Mississippi Policy
14 Council.

15 You stated that the dry storage is of great
16 interest. I would just like to know how close you are to
17 possible licensing of that type of system.

18 MR. ROUSE: Right now I have two applications for
19 dry storage, one from Virginia Power, one from Carolina
20 Power and Light.

21 At Virginia Power it is dry storage in metal
22 casks. Yet this month I expect to approve the Topical
23 Report of the Castor 5 cask that Virginia Power selected.
24 In the next couple of months I expect to complete our review
25 of Virginia Power and go to the Commission with a

1 WRBeb 1 recommendation.

2 So over this next year I expect to have completed
3 a number of the Topical Report reviews and probably get out
4 the first two licenses.

5 MR. BOYLL: Thank you.

6 I understand there is still some research being
7 done while fuel assemblies are being moved to Idaho. Is
8 that for research or actual storage?

9 MR. ROUSE: That is development of DOE's doing
10 under the ^{Nuclear} Waste Policy Act. It is developing the
11 technology. What they are doing is pushing the temperatures
12 a little bit to really try different storage mediums.

13 For example, we presently require that the dry
14 storage be in an inert atmosphere, and they are also going
15 to plan to do some storage of consolidated fuels. They are
16 trying to advance the technology.

17 MR. CHU: Are there any other questions on this
18 particular topic?

19 Yes, sir.

20 VOICE: (Designation ~~inaudible~~) -- from the State
21 of Utah. I am not a designated official.

22 I have a question about rod consolidation as a
23 method for possible transportation, limiting transportation
24 activities.

25 I am wondering what the status of rod

WRBeb 1 consolidation in transportation activities is.

2 MR. ROUSE: I'll try that.

3 As I indicated, there are a number of reactors
4 that are looking at rod consolidation principally as a means
5 of increasing their storage capacity. Right now I do not
6 expect a lot of reactors will go to rod consolidation.
7 There are some problems, some structural reasons that they
8 may not.

9 However, DOE itself now as part of this is
10 looking at system improvements and is looking at a concept
11 of consolidation of the rods for transport. It is a thing
12 they are looking at but there are no decisions.

13 VOICE: So there have been no tests conducted
14 with rod consolidation?

15 MR. ROUSE: No, there have been none to date.

16 VOICE: Thank you.

17 MR. CHU: Our next talk will be devoted to the
18 question of modal choice. It will be given by Mr. Phil
19 Daling of Battelle Pacific Northwest Laboratories. The
20 title of the speech is "Modal Choices and Considerations."

21 Mr. Daling.

22 (Slide.)

23 MR. DALING: Thank you, Mr. Chairman.

24 Good morning. Before I get started, I didn't
25 print my paper but I did bring a bunch of copies with me

WRBeb 1 and they are available outside on the display table, until
2 they run out. If they do run out and someone wants one,
3 give me your card or your name and address and I will see
4 that you get one.

5 As Woody indicated, I will be talking today about
6 modal choice and considerations in the selection of
7 transport modes for spent fuel shipments.

8 (Slide.)

9 What I would like to do today is basically start
10 with some basic information about the three different
11 transport modes that are available for spent fuel shipments:
12 highway, rail and water. And then I will go on to describe
13 some factors that may affect the selection of one or more of
14 these modes for spent fuel shipment.

15 (Slide.)

16 As we've seen over the last couple of days, spent
17 fuel is transported in what is called a Type-B package, a
18 package designed to withstand severe accident conditions.
19 It consists basically of an internal stainless steel
20 pressure vessel. At least the existing shipping casks are
21 constructed with an internal stainless steel pressure vessel
22 surrounded by layers of shielding material for gamma rays
23 and for neutrons.

24 The lids on these shipping casks are bolted and
25 gasketed in place to maintain the containment of the

1 WRBeb 1 radioactive material.

2 The cask is designed with impact-limiting devices
3 to absorb some of the energy of the impact of some kind of
4 vehicular accident.

5 (Slide.)

6 This slide is kind of busy. I am not going to go
7 into too much detail, but it contains the basic information
8 about the existing current generation of spent fuel shipping
9 casks.

10 As you can see, there are two types of truck
11 casks. There is a legal-weight truck cask and an overweight
12 truck. The overweight is not to indicate that it is not
13 legal, it is just heavier than some state restrictions
14 allow. It requires special permits.

15 The legal-weight truck casks weigh about 26 tons
16 or 22,000 kilograms; in that vicinity. The overweight truck
17 casks weigh about 50 percent more than that.

18 There are also two types of rail casks. There is
19 a light rail and a heavy rail. The light rail is the type
20 we saw yesterday. It weight^s on the order of 60,000
21 kilograms. It's a large cask, but the NLI-10.24 is an even
22 larger, and a higher capacity. It weighs approximately
23 83,000.

24 (Slide.)

25 I hope you can see this. It is not a very good

1 WRBeb 1 picture of the NLI-1/2, but it is shown in the shipment
2 configuration.

3 Let's go through these pictures quickly.

4 (Slide.)

5 This is the NLI-1/2 in the frame. You can see
6 that it is a fairly large system even though it is just a
7 legal-weight truck cask. There is an operator standing down
8 there, and he is taking a radiation measurement, but he is
9 dwarfed by the cask.

10 (Slide.)

11 This is the overweight truck cask, TN-8 and
12 TN-9. They are about 50 percent larger than the
13 legal-weight truck cask.

14 (Slide.)

15 Here is the TN-9 in the cask-handling frame.

16 (Slide.)

17 This is the rail cask that we saw yesterday, the
18 light rail cask. This is shown on its rail car with its
19 personnel barrier surrounding the cask.

20 (Slide.)

21 This is hanging from its frame. We saw this at
22 the Morris facility yesterday.

23 (Slide.)

24 This is the picture of the NLI-1024, what I
25 called the heavy rail cask. Its capacities are 50 percent

WRBeb 1 larger than the light. It's a very, very large cask.

2 (Slide.)

3 Another of what Lee has been talking about this
4 morning, or one of the things he touched on was the fact
5 that some utilities or some casks may be certified to be
6 both storage and transportation. And DOE is currently
7 involved in a demonstration with Nuclear Fuel Services which
8 will load fuel into storage casks at West Valley, transport
9 them by rail to Idaho, and at Idaho they will be in storage
10 for a number of years.

11 (Slide.)

12 This is the Castor 1-C cask which is a fairly
13 large cask also. It is a new generation cask. Basically it
14 consists only of a single solid material, one large casting
15 with approximately nine-inch-thick walls of cast iron.

16 (Slide.)

17 And this is an even larger Castor V. This cask
18 weighs approximately 100 tons. It is very large, and it is
19 also cast iron.

20 (Slide.)

21 Water transport is something that has not been
22 practiced in the U. S. yet. Basically a water shipment
23 would consist of one or more large rail casks on a barge or
24 a ship. As I said, it hasn't been used in the United States
25 but it is used extensively in Japan and in Europe.

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1 The ships are generally small and not like a
2 supertanker. They weight approximately two to three
3 thousand dead weight tons compared to a supertanker which is
4 maybe fifty or sixty thousand dead weight tons. And the
5 ships are about the length of a football field, and maybe 12
6 to 18 meters wide.

7 There are numerous ships that are available,
8 either in Europe or Japan. And you can get 24 rail casks on
9 those ships.

10

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(Slide.)

1
2 This shows a schematic of one of the ships that's
3 available. I think this is-- The British use this ship.
4 It's a Pacific Nuclear Transport, Limited, ship. And I just
5 wanted to show that it looks like any other ship that you'd
6 see. It has a large engine, it has underdeck cargo holds
7 where the spent fuel casks are. So they're basically away
8 from the people who are operating the ship.

9 They do have special provisions for shielding,
10 including both water for neutron shielding, and it has some
11 structural material for gamma rays.

(Slide.)

12
13 Another type of shipment is referred to as an
14 intermodal shipment, and this type of shipment uses more
15 than one transport mode; for example, it would use
16 truck-rail or -- actually any kind of a barge shipment would
17 probably involve an intermodal movement of some kind to get
18 the rail casks from the reactor to the barge, to the water
19 port.

20 The two most likely configurations are a
21 heavy-haul truck/rail configuration which a reactor that may
22 not have rail service would use. This heavy-haul/rail
23 combination uses a large special heavy-haul truck shipment
24 with special permits and escorts, et cetera, to move a large
25 rail cask by truck to and from a reactor. And then once at

2 WRBeb

1 a rail siding or the nearest rail location, the cask is
2 removed from the heavy-haul truck and onto the rail car.

3 (Slide.)

4 This slide just shows a schematic of the
5 heavy-haul truck configuration. The IF-300 we saw yesterday
6 is specifically designed as a heavy-haul truck, potentially
7 it could be used as a heavy-haul truck.

8 The skid that the cask rests on can be picked up
9 by special hydraulic equipment and moved between the
10 heavy-haul truck and the rail car.

11 (Slide.)

12 Now I'll discuss some of the factors that affect
13 the selection of transport modes, and these factors include
14 economics of risk and safety, routing considerations,
15 cask-handling capabilities and limitations at reactors, and
16 also the availability of current generation shipping casks.

17 (Slide.)

18 Under economics: Transportation costs are not a
19 simple cut-and-dried type of thing, they are affected by a
20 number of different parameters, including specific origins
21 and destinations of shipments; the frequency of shipments;
22 the length of the contract; the weight of the shipment, and
23 any existing competition between rail carriers and truck
24 carriers and cask manufacturers.

25 The transportation industry is also deregulated,

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1 which means that all of these costs are subject to
2 negotiation between the shippers, the carriers and the cask
3 manufacturers.

4 Basically, transportation costs consist of
5 freight charges which are assessed by the carrier company,
6 and would also include things such as special equipment
7 costs for the vehicles.

8 The carrier companies typically also charge the
9 next category of costs, which are security. Security costs
10 are basically the things that are mandated by 10 CFR 73, the
11 safeguards regulations: escort vehicles in densely populated
12 areas, armed guards, and that kind of thing.

13 The third category of costs are cask lease
14 charges which are charged by the cask vendors for the use of
15 their equipment, and also any special handling costs that
16 may be incurred, such as the heavy-haul truck configuration
17 which may need a special crane and other equipment.

18 (Slide.)

19 This slide shows some representative
20 transportation costs that include all the factors that I
21 discussed on the last slide. I don't think I'll go into the
22 numbers here, except to point out that from our calculations
23 we can see that the legal weight truck configuration is
24 probably the least expensive option for a utility to use up
25 to, maybe, a thousand miles, somewhere in that neighborhood.

2 WRBeb 1 Beyond a thousand miles it looks like the rail cask -- the
2 use of rail casks becomes less expensive. And both
3 intermodal configurations shown on the slide are the most
4 expensive of all.

5 (Slide.)

6 The second factor to consider are the risk and
7 safety considerations. We have heard several presentations
8 on the severe accident conditions that casks are designed to
9 withstand. Historically, there has not been a release from
10 Type B packages yet.

11 Analytically you can evaluate risk by considering
12 that there are four different aspects of transportation
13 risk, and they're shown-- I'll just go through them.

14 Radiological risks from an accident, and that
15 would be the risk from a release that occurred during that
16 transportation accident.

17 There's also incident-free exposures that are
18 received by truck drivers, by the rail people and by the
19 persons along the route, to very low levels of radiation
20 that are emitted from the cask.

21 There are also non-radiological accidents and
22 incident-free risks. Both of these risks are from things
23 other than the radiological characteristics of the cargo.
24 For example, the accident risks are from vehicular accidents
25 and injuries and fatalities that may occur during an

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1 accident.

2 The incident-free risks are from pollutants and
3 particulates that are emitted from the diesel combustion or
4 from gasoline combustion.

5 (Slide.)

6 One approach that is fairly simple to use to
7 estimate risk is through the use of unit risk factors.
8 These risk factors have been developed over the last couple
9 of years by Sandia National Laboratories, and there are a
10 number of reports out that indicate the magnitude of these
11 numbers.

12 The units basically are consequences, or risks
13 per unit distance traveled, such as radiation dose, or
14 person-rem per kilometer, or fatalities per kilometer in the
15 case of a vehicular accident.

16 To calculate risk, to get a fairly close
17 estimate, you multiply the risk factor times the distance
18 traveled. And the distance traveled is simply calculated by
19 multiplying the number of shipments by the round-trip
20 distance.

21 Risk factors are currently available for truck
22 and rail shipments, and the barge transport risks I
23 understand are being worked on right now at Sandia and
24 should be available this summer.

25 (Slide.)

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1 This slide shows some of the unit risk factors
2 that have been calculated. I'm not going to go through the
3 numbers here: they're in my paper if you want to take a
4 closer look at them.

5 I would like to point out from the slide, though,
6 that it looks like the numbers for truck unit risk factors
7 are smaller than the ones for rail, but that's not the case;
8 the magnitude of the numbers is, but when you multiply by
9 the distance traveled you have to consider the capacity of
10 the cask, and you have a seven- to ten-fold increase in
11 capacity for rail casks, which would reflect maybe a factor
12 of 7 or 10 less shipments. So the risk does come out fairly
13 equivalently between truck and rail.

14 (Slide.)

15 Another factor that may affect the selection of
16 transport modes are routing considerations. As we've heard
17 the last couple of days, routing regulations do exist for
18 truck -- for highway shipments; they're embodied in HM-164.
19 But they have not been developed for rail or for barge.

20 Some factors that may need to be considered when
21 selecting a particular transport mode would be some of the
22 factors that we've discussed: the quality of track, highway
23 and water route; hazardous materials traffic volume, we want
24 to minimize exposure of a shipment to other hazardous
25 materials traffic; accident rates: we're prefer to avoid

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1 high accident rate areas; and you also may want to look at
2 the total population affected: for example, a truck shipment
3 would have to go through an urban, highly densely populated
4 area versus a rail shipment that would go around that area.

5 We also wanted to look at locations of special
6 facilities along the route. Special facilities are things
7 such as hospitals, factories that may employ 50 percent of
8 the population of a certain town; you may want to look at
9 shopping centers or anywhere a large group of people would
10 be collected.

11 (Slide.)

12 Another factor to consider are the cask handling
13 capabilities and limitations at reactors. We recently
14 completed a study looking at cask handling capabilities, and
15 we found that some reactors are limited to using the highway
16 transport mode at this time. Some of the reasons for this
17 are lack of rail access to the site; they may have
18 inadequate lifting capabilities; their cask handling crane
19 doesn't have the full capacity that they would need to use a
20 rail cask, or in some plants their cask loading pool is
21 actually too small and there is not enough clearance to put
22 the cask in the pool.

23 As I discussed previously, the heavy-haul
24 truck/rail intermodal configuration could be used at
25 reactors that are not provided with rail service by using

2 WRBeb 1 the heavy-haul truck configuration to move the large rail
2 cask to and from the plant.

3 (Slide.)

4 This slide summarizes the cask handling
5 capability information results that we obtain in our study.

6 As you can see, all of the plants are currently
7 capable of handling a legal weight truck cask. About 80
8 percent -- a little more than 80 percent of the plants can
9 handle overweight truck casks, and about 60 percent can
10 handle the light rail cask, at least. There is a break
11 between a light and a rail cask: there are some plants that
12 can handle the light cask but not the heavy rail cask.

13 If you consider the NLI-1024 as the next -- you
14 know, about the size of the next generation of shipping
15 casks, only about 60 percent of the plants can handle such a
16 cask.

17 (Slide.)

18 A final factor to consider is the availability of
19 the current generation of shipping casks to perform the
20 shipments.

21 You need to look at the fact that there is a
22 limited number of these shipping casks, and there are also
23 other commitments for their use, and we have talked about
24 some of the future shipments that we know are going to have
25 to occur.

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1 The current cask availability. The numbers are
2 on this slide are for certified casks that could be used
3 right now. In the legal weight truck category there are
4 only five that are currently certified and available for
5 use. Overweight truck casks, there are four, and one of
6 those is owned by a utility company. The light rail cases,
7 four of them are certified, and one of those is also owned
8 by a utility company. And none of the heavy rail casks are
9 available.

10 (Slide.)

11 I'd like to highlight some of the important
12 conclusions that are in the paper.

13 Basically, unit transportation costs are one
14 consideration that you would need to look at. These costs
15 favor truck for the shorter distances and rail for longer
16 distances. And in all cases the intermodal shipments are
17 the most expensive.

18 We find no significant analytical safety benefits
19 for selecting truck over rail or rail over truck, but
20 transport modes can be selected which minimize things such
21 as accident rates, exposure to hazardous materials traffic,
22 exposure of persons, the affected population along the
23 route.

24 Also, the shipper, the utility or what-ever, must
25 consider the cask handling capabilities and limitations at

2 WRBeb

1 the plant as well as the availability of the current
2 generation of shipping casks.

3 That's all I wanted to say today. If anyone has
4 any questions I'll be glad to try to respond.

5 MR. HOLLOWAY: Jim Holloway from Virginia.

6 I think it's unfortunate that you put economic
7 factors first. I hope you didn't mean that. Because as a
8 Virginia has recently done a very large scale
9 study on shipping of spent fuel, and as a result of our
10 study economics were the ^last important to everyone
11 involved.

12 It sort of taints the study somewhat, the fact
13 that you have economic factors first here. I think that's
14 the last thing we should be worried about. We should be
15 worried about the risk.

16 Thank you.

17 MR. DALING: It's unfortunate that I organized
18 the paper as I did. Actually, it turns out that probably
19 the most key limitations are the cask handling
20 capabilities. If a plant can't handle a rail case^k it
21 certainly will have to use the highway mode.

22 Any other questions?

23 (No response.)

24 Thank you.

25 (Applause.)

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1 DR. CHU: The final topic of this morning's
2 session is on insurance considerations. Contrary to what
3 your agenda and program notes indicate, the speaker will be
4 Mr. Wayne Kerr, Director of the Office of State Programs for
5 the NRC. He will speak on insurance for transportation
6 operations.

7 Mr. Kerr.

8 MR. KERR: Thank you.

9 There has obviously been considerable discussion
10 over the past few days on the steps that have been taken to
11 reduce the possibility of transportation accidents that
12 might result in an accident that would lead to injury or
13 damage to property or to the environment.

14 Strict transportation standards, stringent
15 packaging and enforcement policies of DOT and NRC are all
16 directed toward making the risk of public impact of
17 transportation accidents very small. The record of
18 transportation accidents involving hazardous material, as
19 you have heard many times, has been one to which all parties
20 can point with pride. Yet no one can say that an accident
21 affecting the public will never happen.

22 Both as an act of public policy and as a matter
23 of sound business practice, Congress, the Executive agencies
24 and the nuclear insurance industries have fashioned a system
25 of private insurance and governmental indemnity to make sure

2 WRBeb 1 that funds are available to pay losses in the event of a
2 nuclear accident, including one during transportation.

3 Let me give you a bit of background on the
4 Price-Anderson system, which is something -- the
5 Price-Anderson Act, which you've probably heard of, and
6 which provides liability coverage for nuclear accidents,
7 I'll try to explain in layman's terms what is meant by
8 public liability coverage and how Price-Anderson works to
9 provide those funds.

10 I will restrict my comments primarily to present
11 and near-term spent fuel shipments, although I will conclude
12 with some remarks that address legislation which Congress is
13 considering for liability coverage for high-level waste
14 shipments, particularly spent fuel shipments, under the
15 Nuclear Waste Policy Act.

16 First, in terms of liability coverage, we're
17 concerned with whether there will be funds available to
18 parties undertaking nuclear activities that will compensate
19 members of the public who suffer injury or damage caused by
20 an accident involving nuclear material. Usually liability
21 issues are concerned to a great extent with the legal
22 determination of who was at fault. Only the person who is
23 shown to be at fault for the accident, and that person's
24 insurer, have to pay what are called court claims to victims
25 for damages and injuries caused by the accident.

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1 Under the Price-Anderson Act, however, anyone who
2 may be liable is covered, so that whether one party or many
3 parties may be responsible for the accident, the same
4 coverage is available to pay the public liability claims.

5 The Act requires licensees of large commercial
6 power plants to provide proof to the NRC that they have
7 private nuclear liability insurance equal to the maximum
8 amount of insurance available from private sources.

9 Licensees of smaller reactors provide financial protection
10 in lesser amounts. Colleges and universities that operate
11 research reactors, and federal agencies that hold reactor
12 licenses are not required to buy insurance.

13 The Price-Anderson Act that has now evolved
14 entails a two-part insurance system for liability payments:
15 the first is a primary liability insurance scheme whereby
16 utilities operating large power reactors pay a premium each
17 year for a fixed amount of liability coverage. That covered
18 is currently \$160 million for each large power reactor
19 site. This insurance is supplemented by the second part of
20 the system that applies only to the operators of large
21 reactors: in the event of a nuclear accident causing damage
22 exceeding \$160 million, each licensed nuclear power plant --
23 not just the one that was involved in the accident --
24 operator would be assessed a pro rated share of damages in
25 excess of the primary coverage up to \$5 million per reactor

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1 per accident. With 95 commercial reactors currently under
2 the system, the secondary insurance totals \$475 million.

3 Where the Act also requires the government to
4 provide funds for an accident in excess of private
5 insurance, or where no private insurance is required, these
6 government funds would be called government indemnity.

7 The NRC enters into agreements with licensees
8 that specify the amount of financial protection they are
9 required to have, if any, and the obligation of the
10 government with respect to its licensees.

11 In effect, the Act then places a ceiling on the
12 total amount of liability in an accident. This limit is
13 currently tied to the maximum amount of insurance through
14 private sources. For many years the limit was \$560
15 million. In November, 1982, when the primary and secondary
16 layers for large power reactors reached \$560 million, the
17 government's indemnity was essentially eliminated.

18 The present limit of \$635 million will continue
19 to increase in increments of \$5 million for each new reactor
20 licensed to operate.

21 There are two insurance pools that provide the
22 utility industry with the insurance that is envisioned in
23 the Price-Anderson. About half of these pools' total
24 liability capacity comes from foreign sources like Lloyds of
25 London and the Japanese and German insurers. Member

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1 companies comprising a pool decide independently the amount
2 of capacity they wish to commit to nuclear risk.

3 The pools write two forms of nuclear energy
4 liability policies: the facilities form and the suppliers
5 and transporters form.

6 The facilities form is a location oriented policy
7 issued to owners and operators of facilities and, when
8 provided, is financial protection in the formal part of the
9 system.

10 The facilities form, I might add, is also sold to
11 operators of nuclear facilities other than reactors, such as
12 operators of fuel fabrication facilities and nuclear storage
13 facilities; and in those cases the policies are not part of
14 the Price-Anderson system.

15 The suppliers and transporters form is not part
16 of the system, but is purchased by those who may supply
17 goods and services to facilities that have not purchased the
18 facilities form or by those who want additional coverage.

19 These pools also participate in the secondary
20 part of financial protection required by Price-Anderson by
21 issuing policies that set forth the terms, conditions, and
22 obligations of the parties to cover the secondary part of
23 the insurance.

24 Up to this point I have not focussed on coverage
25 for transportation. The Price-Anderson Act itself makes

WRBeb 1 only indirect reference to transportation. Transportation
2 coverage actually comes about through provisions in the
3 facilities form of the insurance policy and in the
4 government indemnity agreements that provide coverage of
5 specifically defined shipments of nuclear materials to or
6 from the defined reactor location.

7 In terms of the insurance policies, insured
8 shipments which are covered to the full extent of the
9 coverage for the reactor site itself applies to shipments of
10 spent fuel to the reactor from any location except from
11 another indemnified nuclear facility, and from the reactor
12 to any other location.

13 Thus, in shipments from one indemnified reactor
14 to another, the shipper's policy rather than the receiving
15 reactor's policy would cover.

16 This arrangement where the shipping reactor's
17 policy covers the transportation is also the one followed
18 for shipments to fuel storage facilities, such as the
19 G.E. facility at Morris, Illinois.

20 On the other hand, shipments of spent fuel from
21 certain reactors that has been stored at spent fuel
22 facilities at Morris and West Valley and are now being
23 returned from those, or have been returned, are covered by
24 the reactor's policy. This is because the spent fuel is an
25 insured shipment to the reactor facility from a location

2 WRBeb 1 that is not an indemnified nuclear facility as defined in
2 the policy.

3 With respect to these shipments, the total
4 insurance coverage of \$635 million would apply. The
5 transportation coverage terminates once the material is
6 removed from the transporting vehicle for any purpose other
7 than the continuation of its transport or when the shipment
8 arrives at another nuclear facility.

9 As I described earlier, the coverage, although
10 written in an insurance policy that describes the utility as
11 the insured by name, does cover anyone who might be liable
12 for the accident, including the storage facility operators,
13 common carriers, the drivers, the spent fuel cask designers
14 and manufacturers; the state, locality and highway authority
15 with jurisdiction over the road, or even the operator of
16 another vehicle who may have caused the accident.

17 It covers sabotage^g in the course of the planned
18 transportation, but not a terrorist activity if the material
19 is successfully removed from the planned transportation and
20 then dispersed or exploded.

21 It also covers the loss of property which has
22 been contaminated or which is in imminent danger of
23 contamination -- that is, business type interruptions.

24 I've been describing the Price-Anderson coverage
25 of presently extant shipments of licensed spent fuel to and

WRBeb

1 from reactors. The Act also extends a parallel system,
2 without nuclear insurance but with government indemnity
3 funds, to companies who carry out activities under contract
4 to the Department of Energy.

5 The Nuclear Waste Policy Act provides that DOE
6 will take title to spent fuel at the reactor site and will
7 take responsibility for shipping the spent fuel from the
8 reactors to the high level waste repositories or the
9 monitored retrievable storage facilities if one were to
10 exist. The Department has stated that its activity in
11 shipping the spent fuel from reactors to repositories or
12 storage facilities would be carried out by contractors of
13 the DOE.

14 So the consequence of the two sources of
15 Price-Anderson protection on both NRC and DOE, there would
16 be potential coverage for such shipments both through the
17 insurance policies held by the utilities as licensees of the
18 NRC and the through the contract with the companies carrying
19 out DOE's function.

20 Those of us who work with Price-Anderson in the
21 two agencies have considered that we could reach an
22 accommodation as to which coverage would prevail well before
23 the shipments started. But it now looks like there is
24 reasonable likelihood that the Congress in its consideration
25 of the modification and extension of the Price-Anderson Act

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1 beyond its present expiration date of August 1st, 1987, that
2 they will address it there.

3 The first bill introduced in the current
4 Price-Anderson congressional consideration which touches on
5 high level waste transportation is H.R.-2524, The Federal
6 Nuclear Waste Disposal Liability Act of 1985, introduced by
7 Representative Morrison and others on May 15, 1985. This
8 bill is intended to ensure that the Department of Energy,
9 through its contractors, would assume responsibility for
10 total indemnification for public liability claims resulting
11 from nuclear waste disposal activities, including storage,
12 disposal, and related transportation of high level waste and
13 spent nuclear fuel.

14 The second bill, S.1225, introduced by Senators
15 McClure and Simpson on May 24th, provides that in the event
16 of a nuclear accident involving the nuclear waste program,
17 the funds that will be immediately available through the DOE
18 for compensating the public will be equivalent to the fund
19 provided in the event of an accident at an NRC licensed
20 reactor, or for any other DOE indemnified activity.

21 Specifically, this includes any activity by DOE
22 directly or pursuant to a contract in connection with the
23 storage or disposal of spent fuel or high level waste,
24 including the transportation of such material to a storage
25 or disposal facility.

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1 In the interests of time I have synthesized the
2 concepts and language of Price-Anderson in order to give you
3 a general idea of how coverage is provided for spent fuel
4 shipments today, and of the congressional ideas for
5 providing coverage in the future for shipments under the
6 Nuclear Waste Policy Act. I have skipped over many
7 important and frequently misunderstood features of
8 Price-Anderson, including a congressional pledge to review
9 the accident if the limitation of liability is reached and
10 the provisions respecting extraordinary nuclear occurrences
11 and waiver of defenses.

12 I recommend that you also look through the blue
13 brochure that was in your handout packet, which is a general
14 description of Price-Anderson written a year or so ago, but
15 it is still generally current.

16 I'll be pleased to take any questions you might
17 have at this time.

18 MS. MCNABB: What about the NRC's position on
19 renewal of Price-Anderson?

20 MR. KERR: In the legislation pending; is that
21 what you mean?

22 Well, the program itself is there, we administer
23 it as it is currently provided under the law, which I've
24 indicated -- you know, the current liability limit of \$635
25 million and it would go up with each new reactor licensed.

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1 And that is currently covered by the law that has been place
2 a number of years, and regulations.

3 In terms of legislation pending, there've been
4 two hearings so far this year, one more at least is
5 planned. The Commissioners -- there are five -- are divided
6 on what recommendations to make to Congress.

7 Let me first say that the staff prepared a
8 comprehensive report on Price-Anderson and possible renewal
9 in 1983 and submitted it to Congress. The staff
10 recommended that we eliminate the absolute limitation on
11 liability, which currently exists as I've described, and
12 substitute with an annual retrospective premium that would
13 continue until all claims had been paid.

14 Now, the current Commission position is that two
15 commissioners still generally favor what the staff proposed,
16 two commissioners generally favor the McClure-Simpson bill
17 with a cap of roughly \$2 billion or somewhere in that range,
18 and one commissioner believes there should be a cap probably
19 more in the range of \$5 billion.

20 So what the Congress will eventually do we do not
21 know. The Act does not expire until 1987, so they still
22 have a couple more years to chew on it.

23 MR. TEDFORD: Wayne, you touched a little bit on
24 the insurance that has come forth from utilities. You said
25 something about \$150 million and a 5-million contribution

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1 from each. Was this the insurance that was envisioned to
2 cover a TMI-type accident that the reactors finally did
3 decide upon?

4 MR. KERR: Yes, I would think so.

5 MR. TEDFORD: Also, I heard you make a statement
6 that was of great interest. Maybe you were just quoting the
7 McClure bill, but I think you stated earlier in the
8 presentation that the Department of Energy has
9 responsibility for transporting, shipping and storage of
10 spent fuel.

11 MR. KERR: They are going to take possession at
12 the reactor licensee, and therefore their Price-Anderson
13 system which is similar but not identical to ours-- They're
14 self-insured basically: the federal government would cover.

15 MR. TEDFORD: I'm not talking about insurance,
16 I'm talking about the responsibility that it has.

17 MR. KERR: They'll intend to take possession, and
18 therefore they and their contractors would be responsible.

19 MR. TEDFORD: Thank you.

20 MR. KERR: Any others?

21 (No response.)

22 MR. KERR: Thank you.

23 (Applause.)

24 DR. CHU: The moment you've been waiting for is
25 arriving, the time for some closing remarks.

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1 I really didn't have too many things that I
2 wanted to say. One was, I wanted to acknowledge and express
3 a sense of regret that we did not have more of an
4 opportunity to have an exchange of ideas. But thanks to the
5 questions by the gentleman from Texas before the break, my
6 short speech has become shorter.

7 However, given the motivations for having this
8 seminar -- and I do use the word "seminar;" in fact the
9 brochure says the word "seminar -- given that the purposes
10 we want to achieve in this seminar, given the audience that
11 we were envisioning, and indeed that did come, and the
12 size, I would take the privilege of this chair and declare
13 the seminar a success.

14 The only other thing I wanted to say was to make
15 some acknowledgements: first, an acknowledgement to you all
16 that, we're now in our third day and there's still a large
17 number of you out there, and so I want to thank you for
18 being here.

19 The other acknowledgement is to the Nuclear
20 Regulatory Commission on behalf of the DOT. They did all
21 the work in terms of making all the logistical arrangements,
22 and I think they did a superb job, and I would like to call
23 for a round of applause for the NRC.

24 (Applause.)

25 Now, I might mention that yesterday the field

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1 trip to Morris, the Department of Transportation arranged
2 for the weather.

3 (Laughter and applause.)

4 Finally, now, I will turn this program over to
5 Dick Cunningham of the NRC for his remarks.

6 Thank you very much.

7 (Applause.)

8 MR. CUNNINGHAM: Thank you, Woodie^y.

9 I think you said just about everything that needs
10 to be said. By now, of course, we're all saturated with the
11 seminar in general and the speakers in particular.

12 As was mentioned at the beginning of the seminar,
13 the participants are drawn from varying backgrounds --
14 radiation protection, emergency response people, highway
15 patrol, transportation, and so forth. And we all have
16 rather broad responsibilities that intersect in the narrow
17 area of transportation. But because our responsibilities
18 are broad compared to this specific subject, we've rarely
19 had a chance to meet together and get to know each other.
20 And I think that is probably the most important outcome of
21 this seminar; it does give us a chance to attach faces to
22 voice, to writing and to telephone calls, and so forth.

23 We have found this particularly important in
24 problem-solving, particularly in times of crisis.

25 I know in my field of radiation protection, I

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1 know many of my colleagues here from the states who are also
2 in radiation protection, and it does help to know each
3 other, I think. Chuck Tedford from Arizona will testify
4 that we've been through one or two crises together, and if
5 we did not know each other we would not be able to work
6 together as well to solve problems.

7 So I think hopefully this will begin that
8 relationship, so that as problems occur in the future we can
9 attach faces to names and know something about the people,
10 and that will help us solve problems in the future.

11 With that, I want to thank the speakers and each
12 and every one of you for attending this meeting and
13 participating.

14 Thank you all very much.

15 The seminar is concluded.

16 (Applause.)

17 (Whereupon, at 11:40 a.m., the seminar was
18 concluded.)

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CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING: SPENT NUCLEAR FUEL TRANSPORTATION SEMINAR

Sponsored by
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were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

(sig) William R. Bloom

(TYPED)

WILLIAM R. BLOOM

Official Reporter

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