

Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Town Hall Meeting on Proposed Rulemaking
Packing and Transportation of Radioactive
Materials - Afternoon Session

Docket Number: (not applicable)

Location: Chicago, Illinois

Date: Tuesday, June 4, 2002

Work Order No.: NRC-409

Pages 1-135

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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SESSION 1: TOWN HALL MEETING ON PROPOSED RULEMAKING,
PACKING AND TRANSPORTATION OF RADIOACTIVE MATERIALS

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TUESDAY

JUNE 4, 2002

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CHICAGO, ILLINOIS

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The Town Hall Meeting on Proposed Rulemaking,
Packaging and Transportation of Radioactive Materials
Session met at The Hyatt Regency Hotel, Regency
Ballroom B, 151 E. Wacker Drive, at 1:00 p.m., PETER
BONNER as facilitator.

PRESENT:

PETER BONNER, Facilitator, ICF

FRED FERATE, Health Physicist, Dept. of

Transportation

DAVID PSTRAK, Transp. Specialist, NRC Spent Fuel

Office

PATRICIA HOLAHAN, Chief, NRC Rulemaking &

Guidance Branch

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CHARLES MILLER, Director, NRC Spent Fuel Project
Office
NANCY OSGOOD, Senior Project Manager, NAIEM
TANIOUS, Project Manager for Rulemaking, NRC
JAN STRASMA
STUART TREBY

MEMBERS OF THE PUBLIC PRESENT:

DIANE D'ARRIGO
DAVID KRAFT
MARK DORUFF
SIDNEY BAIMAN
JOY REESE
MARGARET NAGEL
MANNY TUAZON
DEBBIE MUSIKER
PAUL GAYNOR

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

(1:00 P.M.)

1
2
3 MR. BONNER: Good afternoon, everybody.
4 My name is Peter Bonner. I'm from ICF Consulting, and
5 we're a contractor to the Nuclear Regulatory
6 Commission. And I'm going to be handling the
7 facilitation and moderator responsibilities for the
8 meeting this afternoon and this evening. The purpose
9 of today's meeting is to hear your ideas, opinions,
10 comments, observations regarding the proposed rule on
11 transportation of radioactive materials.

12 First of all, let me do some introductions
13 here. Charlie Miller is, let me get this right, the
14 Deputy Director for Special Projects of the Spent
15 Fuels Project Office, and he's responsible for spent
16 fuel storage and all issues related to transportation.
17 Okay. Trish Holahan is the Chief of Rulemaking and
18 Guidance Branch and is really responsible for writing
19 the rule. Fred Ferate is from the Department of
20 Transportation and is an expert on transportation
21 issues. Stuart Treby is the Assistant General Counsel
22 and responsible for the legal issues in the proposed
23 rule.

24 Up front here we have Nancy Osgood, and
25 Nancy is the Senior Project Manager for the Spent

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1 Fuel's Office and an expert in packaging. Dave Pstrak
2 is a Transportation Specialist, also for the Spent
3 Fuel's Office of NRC. And Naiem Tanious is the
4 Project Manager for Rulemaking and Project Manager for
5 this rule. Okay, have I left anybody out? Oh, Jan
6 Strasma who is the Senior Public Affairs Officer from
7 Region 3.

8 Those are the representatives we have from
9 the Nuclear Regulatory Commission and from DOT today.
10 And they'll be going through some brief presentations
11 on the process of making the rule and proposing the
12 rule, and also handling some of the issues that have
13 been raised.

14 The first thing to do is, does everybody
15 have a packet from outside? You have that? Let's
16 briefly review what's in there. On the left side of
17 your packet is the federal register notice of the
18 proposed rule. Also on the left side are a couple of
19 index cards. What we're going to do is have you use
20 the microphones to make your comments and
21 observations. If you choose not to want to get up in
22 public and make your statement, you can write it down
23 on the index card and I can read it for you. Okay?
24 That's what the index cards are for.

25 On the left side of your packet, we've got

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1 the agendas. Right after the agenda is a summary of
2 the NRC Part 71 proposed rule with the description of
3 issue by issue. And that basically summarizes each
4 issue raised in the rule. And they're structured by
5 the IAEA compatibility changes and the NRC initiated
6 changes.

7 After that, we've got the PowerPoint
8 slides providing an overview of the proposed rule and
9 the public meetings and the process for providing
10 comment, contact information from NRC and DOT, another
11 form for you to make comments on. If there is
12 something that you want to further elaborate on for
13 the group or again that you're not willing to make in
14 public, that's an opportunity on that form to make
15 your comments. The feedback form on the process of
16 this meeting and the federal register notice for the
17 Department of Transportation proposed rule.

18 Okay? Everybody understand what's in the
19 packets? Okay, great. Let's take a look at the
20 agenda in your packet for just a second. We're going
21 to start out with an overview of the rulemaking
22 process and then move in to the two issues of
23 international harmonization and agreement state
24 compatibility. We're then going to, we've taken the
25 liberty of identifying a couple of issues up front

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1 that the NRC saw as substantial.

2 First, radionuclide exemption values and
3 grandfathering previously approved packages in the
4 IAEA related issues. And then, on the NRC initiated
5 issues, special packaging authorizations, change
6 authority and double containment of plutonium. We're
7 not restricted, and I want to encourage you not to be
8 restricted to comments on those issues alone. We just
9 saw this as an opportunity to tee those up because we
10 saw those as the most substantial ones. But that
11 other page you have in your packets that lists all the
12 issues, they're open for comment and we are prepared
13 to talk about those here at this meeting.

14 Make sense? And then, we'll adjourn by
15 4:00 o'clock. Everybody understand what we're going
16 to do? Okay.

17 The last piece is, I've got a couple of
18 discussion guidelines, discussion ground rules. One,
19 I'd like us to speak one at a time. We're a small
20 enough group, so I think that will be fairly easy.
21 Use the microphones to make your comment. This
22 meeting is a public meeting. We will be providing a
23 transcript of this meeting and it's going to be part
24 of the record of response, the record of public
25 comment for this rule.

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1 If you could state your name and
2 affiliation; if you don't have an organizational
3 affiliation, where you're from. If you could stay on
4 topic, we've organized this topic by topic. As we
5 say, we can range from that, but if we could stay
6 issue by issue, that would be great. Focus on ideas,
7 not personalities. If we could refrain from side
8 conversations; I think the acoustics in here are
9 pretty good, if you engage in side conversations,
10 everybody is going to hear you. Keep comments concise
11 and use the comment forms to expand on your ideas or
12 expand on your observations.

13 Any questions about the process for today
14 and how we're going to do it? Okay. Let me turn it
15 over to Charlie and Trish and Fred who are going to
16 start the first agenda item on the process of
17 rulemaking, harmonization, et cetera.

18 MS. HOLAHAN: All right. My name is Trish
19 Holahan. I'm responsible for the NRC rules and the
20 nuclear material and waste events, I mean, areas. I
21 would like to welcome you to this public meeting to
22 discuss this proposed Part 71 to make it compatible
23 with the IAEA safety standards as well as to make
24 other changes. The Department of Transportation also
25 published its proposed rule on the same date to make

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1 its regulations compatible with the same IAEA
2 standards.

3 We look forward to your participation and
4 hearing your views on the NRC and DOT proposed rules.
5 We have an open rulemaking process. We make all our
6 comments available to the public on the NRC website,
7 by regular mail and in the PDR. During the public
8 comment period, we hold public meetings such as this
9 one to seek face-to-face public participation, to
10 obtain public comment, and answer any questions on the
11 NRC proposed rule. Following the meeting, we'll
12 provide a transcript of the meeting on our website.

13 Harmonizing Part 71 with the IAEA
14 regulations will maintain safety, increase NRC
15 regulatory efficiency and effectiveness and reduce
16 unnecessary regulatory burden on licensees by
17 eliminating the need to satisfy two different
18 regulatory requirements, depending on whether the
19 package is shipped domestically or internationally.
20 Furthermore, public confidence will be increased by
21 using the criticality safety index on packages,
22 expansion of QA requirements to certificate holders
23 and using more accurate dose model.

24 I mentioned that because I know that there
25 was significant concern about the use of those models.

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1 I will say a few words about the Part 71 proposed
2 rule. The rule contains 11 IAEA compatibility
3 changes. Of the 11, we are proposing to adopt nine.
4 The two that we are not proposing to adopt is the use
5 of SI units only and the type C package requirements.

6 Adoption of SI units only would be against
7 Commission metrication policy and may also create
8 situations that would compromise safety. As for the
9 type C packages, the IAEA will conduct a further
10 evaluation of the requirements for the type C package.
11 Also, the staff believes that very few shipments will
12 be affected by those requirements.

13 The rule also contains eight NRC initiated
14 changes. These include a proposed petition for
15 rulemaking PRM 71-12 which requested the elimination
16 of the double containment requirements for plutonium
17 shipments; a proposed position on the surface
18 contamination standards as applied to high level waste
19 and spent fuel shipments; and revisions of the fissile
20 material exemptions and general license provisions to
21 address the emergency rule on intended economic
22 impact.

23 We prepared a draft RA and regulatory
24 analysis to support the proposed rule. The draft RA
25 indicates that there will be no significant cost

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1 because of the proposed changes. However, the changes
2 would result in that benefit in NRC regulatory
3 efficiency as licensees and certificate holders will
4 have one set of regulations to comply with.

5 We also prepared a draft environmental
6 assessment to support the proposed rule. The draft EA
7 indicates that there will be no significant
8 environmental impact resulting from the proposed
9 changes. We seek your comments on both of these
10 documents.

11 Finally, I will reiterate our main message
12 to you today which you will hear from various
13 speakers, that the changes in Part 71 to make it
14 compatible with the IAEA will maintain nuclear safety,
15 i.e., it will maintain the level of protection to
16 members of the public and the environment. The NRC
17 initiated changes will also maintain the level of
18 protection.

19 In closing, I would like to leave with
20 this message: yes, the changes will streamline our
21 regulations; it will affect international commerce,
22 but it will not affect safety. Thank you very much.
23 Fred?

24 MR. FERATE: Good afternoon. My name is
25 Fred Ferate. I work in the radioactive materials

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1 branch in the Office of Hazardous Materials Safety in
2 the Research and Special Programs Administration of
3 the Department of Transportation. It's our little
4 group that deals with the regulations for the safe
5 transport of radioactive material in the United
6 States.

7 The Research and Special Programs
8 Administration (RSPA), I guess I'll cheat a little bit
9 by reading my notes here, is responsible among other
10 things for establishing regulations for the safe
11 transport of all hazardous materials, and that of
12 course includes radioactive materials. And that's
13 transport by all modes of transport: air, rail, car,
14 vessel. And they even, in RSPA, consider pipelines to
15 be a mode of transport; it's a mode of transport of
16 petroleum and oil products. RSPA is also responsible
17 for rapid federal response, coordinating rapid federal
18 response to large emergencies and for applying
19 research and technology to transportation needs.

20 One of the things I want to do today is
21 just, I'm kind of interjecting myself right now into
22 the NRC public meeting, but the very first thing is to
23 introduce myself to you and to indicate that after the
24 meeting, you know, in the future weeks, I am
25 available. You can call me, you can send me email

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1 messages as well as, of course, the fact that we have
2 a formal process by which you can submit comments to
3 DOT on the issues in the DOT notice of proposed
4 rulemaking.

5 With respect to that, I would like to
6 point out, I'm not sure that all of you are aware of
7 this, but on the table as you came in, the table
8 outside this room, I left a hard copy of these slides
9 that we're showing now. And I suggest that you try to
10 pick up a copy if you're interested at all in the DOT
11 side, the DOT notice of proposed rulemaking because
12 there, I give my contact information, phone number,
13 email address, and also some information about how you
14 can submit comments to DOT or RSPA on the DOT
15 rulemaking.

16 Another reason why I'm here essentially is
17 to try to indicate to you the relationship, describe
18 a little bit the relationship between the Nuclear
19 Regulatory Commission, the Department of
20 Transportation, and to say a little bit about why we
21 are trying to harmonize our sets of regulations with
22 the international regulations for the safe transport
23 of radioactive material.

24 So, the first thing we should mention is
25 that for many, many years, the DOT and NRC have shared

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1 in a memorandum of understanding (MOU) which was
2 published in the federal registry, I believe, July
3 2nd, 1979. So, it's a long-standing memorandum of
4 understanding and through that memorandum of
5 understanding, the two agencies have agreed to take on
6 different aspects of the regulation of the transport
7 of radioactive materials.

8 Through that MOU, DOT regulates the safe,
9 I guess that's a little bit above and beyond the MOU
10 itself, regulates safe transport of all hazardous
11 materials, but DOT sets communication requirements.
12 It tells you what you're supposed to write on the
13 shipping papers. It tells you what kind of labels and
14 markings you're supposed to put on the packages. It
15 tells you what kind of package you're supposed to use
16 if and when you are required to use them.

17 It sets various other requirements during
18 transport. It sets routing requirements. And DOT
19 regulates both the shipper of radioactive material and
20 the carriers. One thing which I didn't put down on
21 the slide is that DOT also sets the standards for
22 performance requirements.

23 Let's say for packages for transporting
24 smaller quantities of radioactive material, if we go
25 on to the slide for the Nuclear Regulatory Commission,

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1 the NRC essentially has the lead in approving packages
2 for larger quantities of radioactive material. It
3 actually certifies the package designs and you're not
4 allowed to ship radioactive material in those
5 quantities in the United States without having a
6 certificate from the NRC. NRC provides technical
7 support to us, to DOT in some of our duties. They're
8 the ones with the cadre of engineers and people with
9 a lot of technical background, so they help us out in
10 that respect.

11 NRC approves package quality assurance
12 programs for their licensees, but their licensees are
13 a large part of the regulated community. NRC works
14 with DOT to assure consistency and it helps us out by
15 conducting inspections against DOT requirements,
16 inspections of its licensees. In other words, they
17 check to be sure that the licensees are in fact
18 following the DOT regulations for transporting
19 radioactive material.

20 DOT is mandated by law, I give the
21 citation here in the US Code, to help formulate
22 international standards, to ensure that domestic
23 regulations are consistent with international
24 standards to the degree deemed appropriate. And I
25 mention here that the law allows DOT flexibility to

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1 accept or reject certain of the international
2 standards.

3 Why do we need harmonization with the
4 international standards? The two driving forces, the
5 two principal driving forces, I believe, are that if
6 we didn't have harmonized standards, it would be very
7 hard to conduct business. So, for greater
8 facilitation of commerce, it's kind of advisable that
9 we have harmonious regulations, and I have down here,
10 to improve safety.

11 Essentially, what I mean by that is if we
12 have different regulations from another country that
13 we're shipping radioactive material to or receiving
14 radioactive material from, then chances are that the
15 people who are sending it or receiving it are familiar
16 with different sets of requirements and could more
17 easily misinterpret or make some mistake. So,
18 harmonization of our standards with international
19 standards with respect to international commerce is
20 very important in order to reduce the chances for
21 error and to, in that way, improve safety.

22 The international regulations essentially
23 are the responsibility of the International Atomic
24 Energy Agency (IAEA) which is a United Nations agency
25 given that task specifically. Of course, it's given

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1 other tasks, too, and I mention some of them here.
2 The IAEA promotes scientific and technical cooperation
3 in nuclear matters. The IAEA is the international
4 inspector for nuclear safeguards and verification of
5 civilian nuclear programs. But most important for us,
6 it establishes the international standards for the
7 safe transport of radioactive material.

8 And the Department of Transportation is
9 the official US representative before the IAEA. The
10 term we use is that DOT and specifically the Office of
11 Hazardous Material Safety within RSPA, within the
12 Research and Special Programs Administration, is the
13 US competent authority for the safe transport of
14 radioactive material internationally, I guess I'll
15 say.

16 These IAEA regulations, what we will most
17 often probably be calling the international
18 regulations for the safety transport of radioactive
19 material had been issued several times in the past,
20 starting in 1961, '64, I believe 1967, I believe but
21 I am not certain. 1967 is the first year that they
22 were actually called Safety Series Number 6. And
23 then, again in 1973 and 1985, they were issued as
24 Safety Series Number 6.

25 Each time the international regulations

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1 were published, then the US domestic regulations for
2 transporting radioactive material were harmonized with
3 those international regulations, usually several years
4 later, although I mention here that in the future, the
5 IAEA has recently formally changed its revision
6 process so that they're trying to do a review of the
7 international regulations every two years now. So, we
8 expect that our domestic attempt to keep pace with
9 them will probably occur a little bit more often than
10 it has in the past.

11 And the other point to make is that as we
12 adopt the international regulations into our domestic
13 regulations, there usually are a few points, there
14 have always been a few points for, there is still some
15 inconsistency because we decided that there are
16 certain areas where we can do things a little bit
17 differently without reducing safety and essentially
18 functioning more efficiently.

19 I mentioned that 1985 was the last time
20 that Safety Series 6 was issued, but there is a newer
21 version of the international regulations, and that is
22 what was first called ST-1 and now is called TS-R-1 in
23 1996. And the changes that were introduced in the TS-
24 R-1 are the changes that both the NRC and DOT are
25 proposing, some of those changes, most of those

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1 changes are the changes that NRC and DOT are proposing
2 to incorporate in our respective regulations in the
3 United States.

4 Presently, today, you realize we're here
5 to receive your comments on the NRC notice of proposed
6 rulemaking. Now, what that means is that the present
7 NRC regulations as well as the present DOT regulations
8 are still based on the 1985 international regulations.
9 Both of our regulations, if we're going to change
10 them, it's advisable that we try to change them in a
11 coordinated manner.

12 The regulations which are under discussion
13 are essentially Part 71 of Title 10 of the Code of
14 Federal Regulations, that's the NRC radioactive
15 material packaging and transport regulations. And on
16 the DOT side, Parts 171 through 180 of Title 49. And
17 as you all know by now, the notices of proposed
18 rulemaking were published simultaneously on April 30th
19 of this year. You have the NRC proposal on the left
20 side of your blue packet and the DOT proposal on the
21 right-hand side.

22 A couple of comments with respect to the
23 DOT rulemaking here, both NRC and DOT comment periods
24 end the 29th of July. But with respect to the DOT
25 rulemaking, all information in the DOT docket is

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1 available at the website that's on this slide. And
2 it's also on those handouts on the table in case you
3 didn't get one before, you might try to pick one up
4 after the meeting is over.

5 But I would like to particularly call
6 attention to the fact that in this public meeting to
7 give your comments to NRC on the NRC proposal, if any
8 of those comments on the TS-R-1 related items are
9 pertinent to items in the DOT rulemaking, we also will
10 have a copy of the written transcript afterwards and
11 we will comb that transcript carefully to take into
12 account any comments you make here on the NRC
13 rulemaking that are also pertinent to the DOT
14 rulemaking.

15 However, in addition, I do call your
16 attention on the last transparency there to a couple
17 of ways that you can send us directly written
18 comments, either by mail or over the internet, there's
19 a way to do that. And those indications are listed
20 there on the last slide. Again, if you are interested
21 in doing so, I advise you to try to get a copy of the
22 handout. And at any rate, you know, take down my
23 phone number, my email address. Also, I do have cards
24 here, if you want to come up and get a card from me
25 later on, you're welcome to do so.

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1 One final thing I'd like to say is on that
2 table is also a separate single sheet on which I put
3 down a few internet addresses. The first two probably
4 are not all that useful to you because they're for
5 locating on the internet the DOT notice and the NRC
6 notice, and you already have hard copies of those in
7 your folder. The other two addresses, one is a
8 general address for the government printing office
9 where you can find any part of any title of the Code
10 of Federal Regulations or any, of course, it only goes
11 back like ten years or something like that, but I
12 think that's enough for the Code of Federal
13 Regulations.

14 The harder part is you also have access
15 there to Federal Register Notices, and I believe those
16 probably only go back about six or seven years. But
17 even that is sometimes pretty helpful. The final
18 citation is to the website of the IAEA, and if you
19 would like to see what TS-R-1 actually says, you can
20 get to it on this website and you can print out as
21 many pages of that as you want. So, that's the end of
22 what I have to say right now.

23 I deem my role here as being kind of
24 introducing myself, introducing a little bit the
25 relationship between NRC-DOT and the international

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1 regulations, and finally, indicating that I can be a
2 channel, if you would like, to receive comments or to
3 give you additional information about how to contact
4 DOT if you have comments for the DOT notice. I would,
5 again, like to call your attention to the fact,
6 however, that the purpose of this meeting is for you
7 to submit comments to the NRC on the NRC rulemaking.
8 Thank you.

9 MR. BONNER: Thanks, Fred.

10 MS. D'ARRIGO: Excuse me. Could I ask a
11 question?

12 MR. FERATE: Absolutely.

13 MS. D'ARRIGO: I didn't see the last page
14 that had the IAEA address on it. It doesn't appear to
15 be on the, I didn't see it on the screen or on here.

16 MR. FERATE: It's a separate sheet. It
17 wasn't in the slides. It's a separate sheet that's on
18 the table outside the room.

19 MS. D'ARRIGO: Oh, okay. Thanks. Thank
20 you.

21 MR. MILLER: What I'd like to do briefly
22 is to discuss the compatibility of the proposed
23 regulation with the agreement state on policy that's
24 been published by the NRC in the agreement state
25 process. And for those of you that aren't familiar

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1 with the agreement state process that the NRC has, it
2 provides an opportunity for the NRC to delegate
3 authority to states that are interested in taking that
4 authority. And these states are delegated authority
5 for the regulation in certain areas that the NRC
6 normally regulates, if they choose to become an
7 agreement state. They have to go through a formal
8 process to apply and become an agreement state with
9 the NRC.

10 The policy statement with regard to
11 adequacy and compatibility of agreement state programs
12 was published in 1997. And under that policy, NRC
13 program elements are placed under four compatibility
14 categories. Also, the NRC program elements are
15 identified as having particular health and safety
16 significance or as remaining solely under NRC
17 jurisdiction. As a roadmap for you, the
18 categorization of the proposed Part 71 revisions is
19 listed on the tables in the Federal Registry Notice
20 with the rulemaking that you got in your packets today
21 starting on page 21435. And I'd just like to briefly
22 run through each of the categories that are
23 established for the compatibility.

24 The first category is Category A which
25 contain basic radiation protection standards and

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1 scientific terms and definitions that are necessary to
2 understand radiation protection concepts. Agreement
3 states should adopt Category A items to ensure
4 nationwide uniformity. Category B are those program
5 elements that apply to activities that have direct and
6 significant effects in both NRC and agreement state
7 jurisdictions. The agreement states should adopt
8 Category B program elements also so that they're
9 identical to the NRC requirements.

10 Category C are those program elements that
11 do not meet Category A or B but should be adopted to
12 avoid conflict or duplication of gaps or other
13 conditions that could jeopardize an orderly pattern to
14 a nationwide agreement state program. An agreement
15 state should adopt those also. Category D are those
16 that don't meet A, B or C and don't necessarily need
17 to be adopted by the agreement states for
18 compatibility.

19 In addition, in the table, you will see
20 that there are bracketed categories. And in bracketed
21 categories are sections that had been adopted
22 elsewhere in our regulations and do not need to be
23 adopted herein. The final category are what we call
24 NRC category and those are those program elements that
25 we do not relinquish authority to agreement states for

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1 based on the Atomic Energy Act. And the NRC retains
2 authority over those areas.

3 What we'd like to do now is for those
4 things that we've discussed so far is just pause for
5 a moment and through any questions or comments that
6 you want to make on what you've heard so far this
7 afternoon, feel free to come up and make those
8 comments.

9 MR. BONNER: Especially at this point, if
10 you have questions or comments, or questions about
11 the, clarifying the process by which the NRC came to
12 this proposed rule or clarifying questions on the
13 international harmonization or agreement state issues.
14 Any clarifying questions, first of all? Yes? Please
15 state your name and affiliation.

16 MS. D'ARRIGO: Diane D'Arrigo with Nuclear
17 Information and Resource Service. Charles, did you
18 say what you're proposing that these regs would be?
19 Category A, B, C or D?

20 MR. MILLER: I'm sorry, Diane. Could you
21 repeat that? I didn't catch all --

22 MS. D'ARRIGO: I wanted to know what
23 agreement state category this proposed rule is being
24 proposed to be.

25 MR. MILLER: Okay. If you look on one

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1 page, 21435, in your packet should be a bound version
2 of the proposed rule of Federal Register Notice?

3 MS. D'ARRIGO: Yes.

4 MR. MILLER: If you look on page 21435,
5 you'll see a table, starting on that page, and it
6 shows you for each provision, each subsection of Part
7 71 as proposed in this rule what agreement state
8 category it would fall under.

9 MS. D'ARRIGO: So, which one then is the
10 adoption of, I see A_1 and A_2 are in here as
11 compatibility B but also bracketed. What about the
12 exemption tables where you said exempt quantities and
13 concentrations?

14 MR. MILLER: Okay. We're looking it up
15 for you.

16 MS. D'ARRIGO: I'm looking, too.

17 MR. PSTRAK: (Inaudible.)

18 MS. D'ARRIGO: But it's not A_1 and A_2 that
19 I'm talking about. I'm talking about the exempt
20 quantities and exempt concentrations.

21 MR. PSTRAK: (Inaudible.)

22 MS. D'ARRIGO: So, those are the same as
23 saying determination of A_1 and A_2 is the same?

24 MR. BONNER: Dave, could you come to the
25 microphone so everyone could hear you?

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1 MR. PSTRAK: Since you're in the proposed
2 rule already, we'll just go by page number here for a
3 moment.

4 MS. D'ARRIGO: 21440.

5 MR. PSTRAK: Okay. And again, that's
6 still explanatory information as far as what is being
7 proposed to change, and this portion deals with the
8 compatibility. But to specifically look at what is in
9 Appendix A of the overall rule, if you would turn to
10 page 21459? Appendix A, although it's entitled
11 determination of A_1 and A_2 , there is Table A-1
12 beginning on the next page that is just that, the A_1
13 and the A_2 values. And then, Table A-2 which begins
14 on page 21472, Table A-2 in the lower portion of that
15 page, the exempt material activity concentrations,
16 that's tied to issue number 2, the removal of the 70
17 Becquerel per gram of the proposed adoption of these
18 individual exemption values.

19 MS. D'ARRIGO: Yes, I see the chart. I
20 wanted to see where it says the compatibility, is it
21 B because --

22 MR. PSTRAK: It is B. That's the last
23 item in that original table.

24 MS. D'ARRIGO: So, it's got to be the same
25 as the NRC for the agreement states, they have to

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1 adopt these?

2 MR. MILLER: That's correct.

3 MR. PSTRAK: Correct.

4 MS. D'ARRIGO: And if existing states have
5 regulations that are more protective, they have to
6 give those up to go along with these? They give up
7 the opportunity to do greater regulatory control that
8 they might already have on their books?

9 MR. PSTRAK: I don't know the exact answer
10 to that. My previous background indicate that that
11 would be a, I don't know if there are states that are
12 currently doing that, that have values that are more
13 restrictive than what is the federal value. They can
14 do that for other things but it would seem to preclude
15 any across the board or shipment from North Carolina
16 to South Carolina, let's say, if I categorized
17 something in South Carolina based on the South
18 Carolina regulation but I can't ship it to North
19 Carolina because I exceed the value that North
20 Carolina has in place.

21 MS. D'ARRIGO: Well, I know that there are
22 states that require continued regulatory control over
23 radioactive materials even if they're deregulated.
24 And what I'm asking is whether this is going to
25 supersede that now, that the adoption of this is going

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1 to threaten the state's right to have those rules.
2 And it sounds like the answer is yes because it's
3 compatibility B.

4 MR. PSTRAK: Based on the compatibility
5 category, I would say it probably is a yes.

6 MR. BONNER: Other clarifying questions?
7 Okay. Do you have comments, observations, opinions,
8 ideas regarding what's been shared so far in terms of
9 the process of creating the proposed rule or the
10 international harmonization and agreement state? Name
11 and affiliation please?

12 MR. KRAFT: My name is Dave Kraft with the
13 Nuclear Energy Information Service, Evanston,
14 Illinois. I just got my packet this past week from
15 Chip Cameron, so I haven't read it all. But I do have
16 just a very general question. Getting back to the,
17 not so much the need but an explanation for need, and
18 I won't put you on the spot, Mr. Ferate, because
19 you've explained your situation here, but you pointed
20 out the facilitation of commerce and the improvement
21 safety is the rationale for the process.

22 Does either NRC or DOT or anyone else have
23 any quantifiable data you can show that there has been
24 a disruption in the facilitation of commerce or in
25 safety? Or how many complaints in the international

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1 community have been lodged saying that our standards
2 are causing a disruption, you know, things like that
3 in safety or commerce? In other words, what is the
4 quantifiable data that justifies the need even for the
5 harmonization? If nobody is complaining, if there
6 aren't problems in commerce and safety, we're
7 launching a very long, complex process, is there a
8 need for it, I guess? And where can we find that
9 data, I guess?

10 MR. FERATE: I think you have to keep in
11 mind that this is kind of a dynamic process. Until
12 about a year ago, essentially, the rest of the world,
13 I guess I'm looking primarily at Europe when I say
14 this, but Europe I think is probably the forerunner
15 among countries in the international community, and it
16 was just about a year ago that Europe adopted TS-R-1
17 as the two international modal organization, the
18 International Civil Aviation Organization (ICAO) and
19 the International Maritime Organization (IMO), I
20 guess, for shipments by air and by sea.

21 At the time that, or from the time that
22 those had been adopted for the two international modes
23 and by the countries in Europe, essentially then, any
24 international movement of radioactive material between
25 the United States and those countries, or

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1 international shipments by sea, or even domestic
2 shipments by air essentially must satisfy the
3 requirements of TS-R-1.

4 However, through the issuance of the two-
5 part plan and rule for Docket HM 215-D, the Department
6 of Transportation has said that essentially it's kind
7 of an authorization saying, yes, you can go ahead and
8 use the ICAO technical instructions so the
9 International Maritime Dangerous Goods Code both of
10 which rely now on TS-R-1 to ship so long as also you
11 abide by the present DOT definition of radioactive
12 material which is material that has a concentration
13 greater than 70 Bequerels per gram and that you abide
14 by the DOT A_1 and A_2 values.

15 And you may ask, well, how can you abide
16 by both of them? And our answer has been to people
17 who ask us this, realizing that it's kind of a,
18 obviously there are some inconsistencies there, our
19 answer is to take the most conservative course for the
20 time being. But to get back to your question,
21 essentially, those who are doing international
22 shipments are following the international regulations
23 and that is essentially, I think, even though, you
24 know, I can't give you numerical values for how much
25 money would have been lost if they had not, I think in

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1 a qualitative sense, it's pretty obvious that if our
2 shippers, our receivers of packages of radioactive
3 material had continued to insist on using only the
4 Title 49 regulations, then some of those materials
5 would not have been shippable in either one direction
6 or the other.

7 So, I don't have numbers but it certainly
8 would have been a big monkey wrench if DOT had not,
9 for example, authorized use of those two codes and had
10 not also, well, obviously, if we had not put any
11 conditions, then there wouldn't have been any monkey
12 wrench. But we put the conditions there to assure
13 that for the time being until we resolve the question
14 of are our proposals going to be finalized or not,
15 that they must follow the more conservative of the two
16 sets of regulations.

17 MR. KRAFT: Again, not to put you on the
18 spot, and I didn't expect you to necessarily have the
19 calculations, but is there any systematic process by
20 which that cost benefit analysis either has been done
21 or will be done? And the reason I ask that is the
22 flip side of what could happen is that a lot of these
23 changes may have grave implications for the shipment
24 of our high-level radioactive waste. When the Yucca
25 Mountain facility opens, that will also have financial

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1 considerations and values which I don't know have been
2 calculated.

3 If harmonization creates a problem
4 domestically for us in the future when that happens,
5 then the financial justification of using these kinds
6 of shipments which are qualitatively different to put
7 in place the harmonization needs to be weighed against
8 what are the effects in the future for a vastly
9 different category of waste in transport.

10 So, I don't know that, what I'm asking for
11 is where in all of this model is this cost benefit
12 analysis required or asked of somebody so that we can
13 do a comparison?

14 MR. BONNER: Name and affiliation.

15 MR. DORUFF: My name is Mark Doruff. I'm
16 here on behalf of the Council on Radionuclides and
17 Radio-pharmaceuticals. I don't know that I can answer
18 Mr. Kraft's question directly but I can provide a
19 perspective from a shipper of radioactive materials
20 used for diagnostic and therapeutic medical
21 applications. Back about, as Mr. Ferate said, about
22 a year or so ago, we were confronted with a situation
23 where we wanted to ship domestically or
24 internationally by air. As of July 1st, 2001, we
25 would have had two different rulemaking frameworks

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1 with which to be compliant.

2 Our materials that we manufacture and
3 distribute are primarily short-lived radioactive
4 products used in diagnosis of disease or in the
5 treatment of various different diseases, many of which
6 have half-lives on the order of, between let's say six
7 hours and maybe 72 hours, which means in order for our
8 products to be delivered effectively to patients, we
9 have to ship these by air. And in some cases, you may
10 manufacture something at 6:00 o'clock in the morning
11 and it's out the door by noon and in the patient by
12 very early the next morning.

13 We are very heavily dependent upon
14 overnight air transport for the delivery of these
15 medicines. And had the DOT not provided a proposed
16 rule HM 250-D in, I believe it was May or June of
17 2001, effective on July 1st, if you wanted to ship by
18 air in the US by air carriers who are abiding by ICAO
19 IATA, we would have not had the ability to do so in
20 compliance with both sets of the regulations. So, we,
21 therefore, would have been prohibited from shipping
22 legally radio pharmaceuticals by air.

23 Being able to ship by air accounts for a
24 better part, I would say, not to be quoted on this,
25 I'd say it would be on the order of about 80 percent

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1 of the materials we ship. So, that's just to give you
2 an idea of what the impact would be on the
3 pharmaceutical industry.

4 MR. BONNER: Any comment back?

5 MS. D'ARRIGO: Diane D'Arrigo. I just
6 want to follow up on what Mark, I believe, just said.
7 Did it requiring adopting the whole rule in order for
8 you to be able to do what you needed to do? I mean,
9 specifically, I mean, it's my understanding from
10 previous conversation with Fred Ferate that actually
11 the exempt quantities and concentrations tables are
12 not currently adopted for international. They're
13 waiting on the decision on this domestic rule before
14 finalizing that. So, it wasn't necessary to adopt the
15 entire rule in order for your needs to be met.

16 MR. DORUFF: That's correct. We had to
17 adopt essentially the most conservative of the
18 conditions that apply to either TS-R-1 or to Title 49
19 CFR. But there are other aspects of compliance that
20 had less to do with quantities and limits and had more
21 to do with communication aspect such as proper
22 shipping names. We had to use the ones that were
23 recognized by both sets of regulations.

24 MS. D'ARRIGO: So, I think what I'd like
25 to make clear, our organization and people that we are

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1 affiliated with and general public, opposition to
2 portions of this rule have been expressed. And on one
3 hand, DOT denies that there is a reduction in
4 protection of public health and safety for some of the
5 things that we're challenging including the exemption
6 quantities and concentrations. But on the other hand,
7 we're continuing to push to say don't adopt those
8 exemptions because they're not necessary or at least
9 the ones that weaken or increase the allowable
10 concentrations and quantities and those that weaken
11 existing cask conditions.

12 I mean, we can debate over whether or not
13 the immersion test or the crush or the other changes
14 that are proposed here are weakening or strengthening.
15 But what we're pushing for is something that is
16 keeping it at least as protective as it currently is.
17 And if we're going to bother to make changes, we
18 should be dramatically increasing the amount of
19 protection, at least for the irradiated fuel, if we're
20 talking about moving tens of thousands of shipments in
21 the next several years.

22 And I also want to know what countries
23 have adopted this.

24 MR. BONNER: Response?

25 MR. FERATE: I don't know what countries

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1 have adopted TS-R-1, but essentially, whoever the 15
2 countries are that make up the European Union are part
3 of that group. I'd also like, pardon?

4 MS. D'ARRIGO: The European Union has
5 adopted it?

6 MR. BONNER: The question is has the EU
7 adopted it?

8 MR. FERATE: I believe that it has through
9 its model organizations, yes.

10 MS. D'ARRIGO: But you don't know for --

11 MR. FERATE: Highway and rail.

12 MS. D'ARRIGO: (Inaudible.)

13 MR. FERATE: Well, airplanes fly in
14 Europe, too, and those air companies are also members
15 of IATA and the IATA regulations are a rewriting of
16 the ICAO technical instructions. So, essentially,
17 anybody that ships radioactive material by air is
18 following TS-R-1. It possibly is also following some
19 greater restrictions such as the restrictions that DOT
20 has placed on domestic air shipments.

21 I'd also like to point out, to change the
22 subject a little bit, that the discussions about
23 increase or decrease of safety related to the use of
24 new exemption values has just about nothing to do with
25 high level radioactive waste shipments because we're

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1 talking about where do you start to regulate, at what
2 activities do you start to regulate, do we try to go
3 all the way down to zero and regulate everything in
4 this room or do we try to select some numerical values
5 so that we concentrate our resources on those things
6 that seem to pose more dangers to human health.

7 Radioactive waste, spent nuclear fuel has
8 activities that is many, many orders of magnitude
9 above the exemption values and the A_1 and A_2 values.
10 And so, changes in these are not going to affect in
11 any way the increase or decrease in the safety of
12 shipping of high activity shipments.

13 MS. D'ARRIGO: I was just mentioning two
14 separate things that we have concerns about that
15 probably have nothing to do with what the radio-
16 pharmaceutical people cared about and needed. And
17 when Mr. Kraft was asking about the overall need to
18 adopt this change for harmonization, what's the
19 economic value or less or whatever of that, I was
20 listening to separate areas, the exemption levels that
21 would allow radioactive materials to be moving
22 unlabeled and unregulated as if not radioactive, and
23 also referring to other changes that will affect the
24 type B containers that hold the irradiated fuel.

25 So, it's two separate parts, or possibly

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1 more parts of the rule that I was referring to. I
2 wasn't trying to say that they were the same. But I
3 was trying to say that because they're distinct and
4 different, we don't need to adopt all that in order to
5 make radio-pharmaceutical people happy.

6 MR. KRAFT: And actually, this dialogue is
7 clarifying somewhat where my question was heading. We
8 had a situation here in Illinois where years ago the
9 Low Level Radioactive Waste Compact Law was urging
10 states to form compacts which as it turns out was
11 largely an issue for the nuclear power industry. Yet
12 it was the medical and the smaller producers of low-
13 level rad waste that were really driving the process
14 because of their unique needs.

15 You had a very small tail ragging the
16 large dog in this case and in the industry that really
17 needed to be addressed most urgently was not. It was
18 coming from other uses as you just pointed out a
19 moment ago. I wanted to make sure that this process
20 wasn't falling in the same trap where the economic
21 value was skewed because we are talking about one
22 particular segment or part of the industry, yet the
23 real hazard lays somewhere else. That's what I was
24 getting at.

25 So, that's why we need some kind of

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1 mechanism to do those analyses of cost and benefit.
2 So, I'll stop there.

3 MR. BONNER: Let me invite others to make
4 comment at this point on international harmonization
5 or agreement state issues. Others? Please, name and
6 affiliation, if you will?

7 MS. BAIMAN: Sidney Baiman with Nuclear
8 Energy Information Service. What bothers me is it's
9 a known fact that the Department of Energy and some
10 commercial nuclear facilities are notoriously
11 negligent in keeping radiation exposure and radiation
12 release records. I mean, how do you know what's going
13 on half the time? Who is keeping the records? How do
14 you know when the casks are leaking?

15 We have so many examples like Paducah,
16 Kentucky, the workers were there working there for 25
17 years and didn't even know they were working with
18 plutonium. I mean, and plutonium is all through the
19 soil and all through the whole place. And even
20 congressmen don't even know what plutonium is. So, I
21 was just wondering, how are you going to keep record
22 of all this stuff?

23 MR. MILLER: For those licensees that are
24 regulated by the Nuclear Regulatory Commission, the
25 Nuclear Regulatory Commission requires them to keep

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1 records. We the NRC can't speak for those that are
2 not regulated either by us or the agreement states
3 with regard to record requirements. But to reiterate,
4 for our licensees, we do require records to be kept so
5 they know what's there for the full term of the
6 license and for the full disposition of any
7 radioactive materials at the time that they want to
8 terminate their license.

9 MS. BAIMAN: There was a plant called Ship
10 --shipping port where they had zero release of records
11 because they didn't measure the right stack, okay. The
12 records were coming out another pipe. The radiation
13 was coming out another pipe. This is all verified by
14 Dr. Sternglass because the cancers and leukemia
15 increased around this plant and these people who were
16 keeping records said there was zero release of
17 radiation. So, I mean, I don't know who you're
18 supposed to trust around here.

19 MR. BONNER: Okay. Yes?

20 MS. REESE: I'd like to know how the needs
21 of commerce are balanced against the public health and
22 safety. And another question is has your planning
23 included the potentials of terrorists' use of your
24 shipments and will the public be notified when
25 accidents occur? And they will because the nature of

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1 -- is the unexpected happens with all your planning.
2 And also, will workers be protected and notified what
3 they're handling and protected from as it says in
4 Number C in the type C packages and other containment
5 of plutonium that there will be increased hazards?

6 MR. BONNER: Let me get all your
7 questions. One was regarding the cost benefit
8 analysis in health and safety.

9 MS. REESE: Yes.

10 MR. BONNER: Second was the issue around
11 terrorism?

12 MS. REESE: Right.

13 MR. BONNER: And then, the third, fourth
14 was worker safety but what was the third?

15 MS. REESE: Right, and public, will the
16 public be informed when there's leaks and will be
17 protected and warned? And is there enough money to
18 pay for all the lawsuits that are going to occur when
19 there's a massive accident?

20 MR. BONNER: Okay.

21 MS. REESE: That's the fifth.

22 MR. BONNER: The first is cost benefit,
23 health and safety and commerce.

24 MS. HOLAHAN: Okay. Well, in terms of the
25 cost benefit as I think that's one of the reasons that

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1 we're here looking for your input is in terms of what
2 is the effect of the regulation versus the cost
3 benefit, and so that is one of the reasons that we're
4 here. But I would say that, do you want to follow up
5 on the security?

6 MR. MILLER: Could you reiterate your
7 security concern again so maybe I can --

8 MS. REESE: About terrorism, you mean?

9 MR. MILLER: Yes, please.

10 MS. REESE: Well, you know, you were
11 talking about very unregulated possible situation
12 where people would be loading and unloading, there
13 might be terrorists doing that. And all you need is
14 one person who, you know, there's possibilities, many
15 possibilities of that.

16 MR. MILLER: Right.

17 MS. REESE: And of course, in terms of
18 your transporting across to Nevada, there's tremendous
19 possibilities.

20 MR. MILLER: Okay. Are you talking about
21 -- radioactive material or spent fuel?

22 MS. REESE: I'm talking about possible
23 workers, people who are employed in any of these
24 transportation industries.

25 MR. MILLER: Okay. There's various

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1 categories of radioactive material that are
2 transported all the way from spent fuel down to very
3 low levels of radioactive materials that are used for
4 a variety of industrial uses. With regard to spent
5 fuel shipments, spent fuel shipments in the United
6 States are all safeguarded, every shipment. Okay.
7 There are security provisions that are put on every
8 safeguards or has safeguards provisions. And these
9 include such things as constant communication
10 mechanisms that includes the use of armed personnel
11 that accompany the shipments.

12 It includes not advertising when exactly
13 shipments will be made. It includes the use of very
14 robust shipping casks to ship them in. And lots of
15 the specific details of that, I can't go into in this
16 forum because it is safeguarded information for public
17 health and safety to protect the terrorists from
18 getting to that. The NRC is also undergoing a
19 complete evaluation of all our security requirements
20 as a result of the September 11th activities. And
21 those areas where we conclude that we would need to
22 enhance our regulations to further safeguard
23 shipments, we will do so.

24 During this period since September 11th,
25 we have, we the NRC have done a variety of things.

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1 The first step that we took was to issue what we call
2 security advisories to various shipping organizations,
3 people that are doing radioactive shipments. And
4 those security advisories gave them specific things
5 that we would like them to do to safeguard the
6 shipment of those materials.

7 Subsequent to that, we have actually, in
8 the process of, we'd issued some orders or in the
9 process of issuing more orders and we started with
10 areas that we thought were the highest with regard to
11 risk significance like nuclear power plants and
12 radioactive materials. And orders have been issued,
13 security orders have been issued to those facilities
14 and to those shippers with regard to protection of
15 shipments themselves. And we're continuing to go
16 through and issue orders. And as I said, we're doing
17 a complete analysis of all our regulations and all of
18 our security requirements to determine if we need to
19 do even more.

20 So, I guess in summary, what I'm saying is
21 that we do feel that we try to take appropriate action
22 with regard to protecting shipments where we feel it's
23 necessary to do that depending upon the overall hazard
24 that's being shipped for protection of public health
25 and safety. Can I assure you that a terrorist would

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1 never be able to successfully attack any of these?
2 No. Nor could anyone else no matter what safeguards
3 measures we would put on.

4 What we were trying to do is to make a
5 balance between risk, safety and the probability that
6 a terrorist would be able to do such a thing and use
7 other mechanisms independent of what the NRC does,
8 other government mechanisms to try to use intelligence
9 information so that we can stifle any attempts the
10 terrorists might use to try to get in and get at these
11 kinds of shipments.

12 MS. REESE: It just occurred to me there
13 could be a double whammy in terms of if you label the
14 material for protection, people knowing about it. But
15 then, of course, the wrong people might know about it,
16 too.

17 MR. MILLER: Yes, I mean, that's, you
18 know, that's a valid concern in some people's parts.
19 You have to balance, you have to count, what we have
20 to do is balance the need for public health and
21 safety. Terrorism is only one small aspect of public
22 health and safety. I mean, there can be industrial
23 accidents that cause public health and safety concerns
24 that have nothing to do with terrorism. And what we,
25 so the balancing of the placarding versus not

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1 placarding is something that, you know, we tried to
2 look at.

3 And in the balance, part of the reason for
4 placarding is so that God forbid if there ever was an
5 accident of any kind, of not only radioactive material
6 but any kind of hazardous material, that the emergency
7 personnel who are coming on the scene to have to deal
8 with that kind of an accident would know what it is
9 that they're dealing with up front and not be trying
10 to shooting in blind with regard to trying to
11 alleviate the consequences of an accident or to reduce
12 the consequences of an accident.

13 So, we have to strike a balance from a
14 public health and safety perspective of all these
15 kinds of things. And we've determined that at this
16 point in time, we think it's important that they be
17 placarded. And it's also, you know, not to sound
18 philosophical, but it's also somewhat of a,
19 consequences isn't really the right use of the word,
20 but we live in a free and open society in the United
21 States and with that, certain things happen. We're
22 not going to do things in secret. So, we try to make
23 an appropriate health and safety balance and terrorism
24 is only one small piece of that.

25 MS. REESE: I know commerce is so

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1 important in this country and it seems to overshadow
2 the concerns for public health and safety a lot of the
3 time. And I'm hoping it doesn't happen in this
4 particular case in the nuclear, it's unfortunate that
5 you have to transport nuclear anything because there
6 should be a hundred percent guarantee that there's no,
7 there's no room for accidents. It should be zero.

8 MR. MILLER: Well, that's impractical but
9 we're not here to debate --

10 MS. REESE: Maybe if it's impractical,
11 then it shouldn't be done.

12 MR. MILLER: We're not here to debate that
13 issue. What we're to do is if you have a concern and
14 a comment with regard to the rule, in that regard we'd
15 like to receive that so we can evaluate that on its
16 merits.

17 MS. REESE: Well, what about this C thing,
18 that it says that there will be, by changing it, this
19 is on 12, maybe we're not at that point but about the
20 packages, that they're going, it's incident 3 doses
21 are expected to be slightly reduced. That one and
22 then the double containment, it could result in a
23 slight increase in the probability and consequences of
24 accidental releases. So, why do it? That's if it's
25 liquid form.

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1 MR. MILLER: Okay. What you're moving
2 into now is some of the specific issues that we're
3 going to get to next on the agenda.

4 MS. REESE: All right. Right.

5 MR. MILLER: And we'll have an opportunity
6 to discuss those in more detail as we go on. And if
7 your issue isn't addressed by what we talk about, why
8 don't we revisit it at that point in time and we'll
9 try to address it.

10 MS. REESE: Okay. But what about the
11 public being notified if there are accidents which has
12 not happened in the past? And also workers being
13 protected and notified.

14 MR. MILLER: Workers do receive adequate
15 protection. I mean, some of the situations that were
16 cited, over the many years, we've learned a lot of
17 lessons with regard to protection of workers. There
18 aren't workers today that I'm aware of that are
19 working in situations with radioactive material that
20 are not aware of what they're dealing with. I grant
21 you that in the earlier days of some of the things
22 that were cited earlier in this meeting that that was
23 the case.

24 MS. REESE: Okay.

25 MR. BONNER: Could I have your name and

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1 affiliation?

2 MS. REESE: I have no affiliation. My
3 name is Joy Reese.

4 MR. BONNER: Thank you. Okay. Part of my
5 job is to try to keep us on time and I want to get to
6 some of the specific issues. Do you have general
7 comments on the international agreement or agreement
8 state compatibility? Okay, please.

9 MS. NAGEL: First of all, my name is
10 Margaret Nagel and I'm with the a variety of Chicago
11 organizations including Chicago Media Watch and
12 Chicago Peace Response which is a coalition of peace
13 organizations.

14 I'd like to know, is there a specific
15 docket number when we communicate with the government
16 about this issue? Usually, when the public is invited
17 to comment, they have to target a particular docket
18 number.

19 MR. TANIOUS: If I remember correctly, I
20 think we have in the packet, my name is Naiem Tanious.
21 I'm the project manager on this rule. We have on our
22 packet a website address. Inside the FRA, there is a
23 work site address where you can make a comment there.

24 MS. NAGEL: I saw the contact information
25 but I didn't see any specific docket number when we

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1 make our comment.

2 MR. TANIOUS: As soon as you click on that
3 NRC rule llnl.ruleforum website, that connects you to
4 that site.

5 MS. NAGEL: All right.

6 MR. TANIOUS: And there you would see a
7 page where you can make a comment.

8 MS. NAGEL: All right, okay. My second
9 very brief comment is simply that we seem to be
10 discussing facilitating an industry which, with the
11 exception of the medical pharmaceutical sector, should
12 not be facilitated. It shouldn't even be an industry.
13 There should be no traffic in this material. I don't
14 know if you've ever seen pictures of the Iraqi
15 children who are dying of leukemia or who have been
16 born hideously malformed because of the byproduct of
17 this industry depleted uranium that is used.

18 The last thing I will simply say is that
19 you know and we all know that here is an industry that
20 is producing an intractable waste product that nobody
21 really knows what to do with. And there are
22 discussions of, well, letting it seep out into the
23 public sector and the -- zippers, frying pans, because
24 of course, it is safe, or using it in the form of,
25 using depleted uranium in the form of warheads or what

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1 have you.

2 So, we shouldn't be easing the traffic in
3 this hideous stuff. We should be putting up more and
4 more barriers. Thank you.

5 MR. BONNER: Can I get a couple of final
6 comments in this section and then let's get to the
7 specific issues? Okay, please. Name and affiliation?

8 MR. TUAZON: Yes. My name is Manny
9 Tuazon. I am the RSO for Consumers Energy, Jackson,
10 Michigan. I took a long ride this morning coming here
11 with two hopes. One, to determine the official
12 proposal of the NRC on the changes in packaging and
13 transporting of radioactive materials that would
14 affect our industrial radiography. And second, if
15 that is known, I hope that I will be able to
16 participate this afternoon in this discussion because
17 tonight I'm really heading back to Michigan.

18 MR. TANIOUS: We have your request. If
19 you look in your package, you will see the FRN that
20 has all the changes we are proposing to make on all
21 the 19 issues. And of course, the DOT has theirs,
22 too. And as far as participating, Peter, I think will
23 get into these specific issues in a moment.

24 MR. BONNER: Okay. Please, name and
25 affiliation?

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1 MS. MUSIKER: Debbie Musiker with the Lake
2 Michigan Federation. I just had a general question
3 for now. And that is, how has the possible approval
4 of the Yucca Mountain repository been factored into
5 your rulemaking?

6 MR. MILLER: The rulemaking that's
7 proposed is not targeted specifically for Yucca
8 Mountain, but it's targeted for the safe shipment of
9 all radioactive materials. And materials that would
10 be shipped to Yucca Mountain would have to meet these
11 standards that are in the rule where they apply to the
12 kinds of shipments that are shipped to Yucca Mountain.

13 MS. MUSIKER: Well, I asked the question
14 because obviously the approval of the Yucca Mountain
15 site will dramatically increase the number of
16 shipments across the United States. So, it seems that
17 it might have an impact on the way you make your
18 decisions on the packaging and transport.

19 MR. MILLER: The decisions that we make
20 are aimed at, from the NRC's perspective, okay, we are
21 primarily concerned with the packaging of the
22 materials that are shipped and the safeguarding of
23 those packages where they need to be safeguarded. And
24 the packaging requirements that we have in our
25 regulations are aimed at assuring that each package is

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1 safe to be shipped, okay, in that package. The number
2 of shipments doesn't change the requirement that each
3 package itself has to meet the regulations and be safe
4 within itself.

5 And the number, you're right, if Yucca
6 Mountain were to be approved by the Congress and were
7 to get a license from the NRC, there would be a large
8 increase over many years of the total number of
9 radioactive shipments of spent fuel to the mountain.
10 But they would have to be, each of those would have to
11 be shipped in an NRC approved container that meets all
12 of our regulations. So, we don't see from a packaging
13 standpoint that the risk is improved.

14 Now, a separate issue with regard to
15 whether or not there's an increase risk because of the
16 number of shipments, is that what the nature of
17 comment was really into?

18 MS. MUSIKER: That's one.

19 MR. MILLER: Okay. The regulation itself
20 is not based on the total number of shipments.

21 MR. TANIOUS: Could I make one comment?

22 MR. MILLER: Sure.

23 MR. TANIOUS: Because we work on these
24 regulations, for someone on the outside, you might
25 think there is some kind of a connection between, say,

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1 the impending discussions on Yucca Mountain and this
2 rule, there is no connection. There is a schedule to
3 proceed with this rule for two, three years now and
4 they just happened to coincide. The other factor is
5 there's many issues here. Yucca Mountain is, if
6 there's any shipments of high level waste or spent
7 fuel would be covered only by maybe one or two issues
8 under this rule, regardless of how many shipments
9 would be shipped. Thank you.

10 MR. BONNER: Quick comment? Please.

11 MR. GAYNOR: Paul Gaynor from the
12 Environmental Law and Policy Center of the Midwest.
13 Did you just say the regulations are not based on the
14 number of shipments?

15 MR. MILLER: The regulations were not
16 promulgated based upon Yucca Mountain or total number
17 of shipments that would go to Yucca Mountain. But in
18 the promulgation of our regulations and what we look
19 at when we do risk analysis and cost benefit analysis,
20 we factor in the history of the transportation to
21 determine what the overall risk of transportation is.
22 That is factored into the thinking of the regulations.

23 MR. GAYNOR: The history and only the
24 history, not the future?

25 MR. MILLER: Well, the history provides us

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1 a good basis for the future. In other words, if the
2 history had shown they do a radical problem with
3 radioactive transportation, then we certainly would
4 have to look at that to see if we need to change the
5 future of the regulations.

6 MR. GAYNOR: Let me ask you this, is it
7 true that if, let's put aside Yucca Mountain. Let's
8 assume that sometime in the future, there is some
9 decision that is made that will increase the amount of
10 shipments. Has that been taken into consideration or
11 has there only been an analysis of past number of
12 shipments to predict the future in making these rules?

13 MR. MILLER: Okay. The regulations
14 themselves are not taking into account that there will
15 be a certain number of shipments in the future. As I
16 said, we use our historical information on the risk of
17 shipments. Over the course of many years, there have
18 been many shipments of radioactive material and spent
19 fuel. And with the exception of a few accidents none
20 of which resulted in the release of any radioactive
21 material, many shipments over the years have been made
22 safely. And based upon that, we feel that the
23 shipment in the future can be made safely if they meet
24 the provisions of our regulations for packaging.

25 MR. GAYNOR: When somebody drives their

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1 car once a week versus ten times a week, is it more
2 likely that they'll get in an accident if they drive
3 their car one day a week or ten times a week?

4 MR. MILLER: Possibly if they drive their
5 car once a week, I could either side, okay, because
6 maybe if they drive their car once a week, they're not
7 adept at driving so they're not as good a driver. And
8 now, the balance of that, if they drive their car
9 multiple times a week, they're on the highways and
10 exposing themselves to the possibility of more
11 accidents. So, you have to balance both situations
12 when you make a risk argument, and I think we're
13 getting off the main subject on what we're trying to
14 accomplish in this meeting.

15 MR. GAYNOR: How about the distance of
16 travel of those car trips? Would that impact risk
17 analysis?

18 MR. BONNER: Rather than pose a
19 hypothetical, I mean, one of the things that I would,
20 in addition to asking questions of the NRC, I would
21 encourage the participants to make statements, too, in
22 terms of agreement, this agreement observation.

23 MR. MILLER: What we're looking for is
24 statements to be made with regard to the rule so we
25 get your views in factoring in those statements into

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1 the, remember this is a draft rule. It's not a final
2 rule, it's a proposed rule. And we're trying to --
3 public concerns and comments before we finalize the
4 rule.

5 MR. GAYNOR: And in order to make our
6 comments, one of the things that we need is to know
7 exactly what considerations went into the rulemaking
8 process.

9 MR. MILLER: Okay.

10 MR. GAYNOR: And it seems to us, or I
11 wouldn't speak, it seems to me that it is significant
12 whether the amount of future shipments was a
13 consideration in the rulemaking, that it just seems
14 inconceivable that that is not something that could be
15 considered in this analysis.

16 MS. OSGOOD: I think you have a very good
17 point. And although there is --

18 MR. BONNER: Name?

19 MS. OSGOOD: Oh, sorry. Nancy Osgood and
20 I work for the Spent Fuel Project Office. And I think
21 you have an excellent point and we think of it kind of
22 in a little of the reverse. In other words, we have
23 performance standards for transportation packages.
24 NRC has periodically, starting from the early 70's,
25 looked at the risk of transporting radioactive

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1 materials knowing that those regulations exist so that
2 they have a basis for judging the performance of
3 packages and judging the risks in transport.

4 I think starting in 1977, we've done both
5 surveys of actual numbers of shipments as well as
6 projections of future shipments including numbers of
7 shipments and types of materials to be shipped. So,
8 for example, in the first environmental impact
9 statement that was issued in 1977, they looked at
10 historical data from 1975 as well as projected data
11 that was taken for 1985. Throughout the course of our
12 review of risks, we look at projected information on
13 shipments.

14 The Yucca Mountain environment impact
15 statement must look at transportation risks. It's
16 their job to try to define numbers of shipments,
17 routes and that sort of thing, potentially exposed
18 populations. So, although we're not basing our
19 regulations on those risks, calculating the risks and
20 determining risks rely on how the packages perform in
21 actual transportation. So, the two are connected but
22 this rulemaking, although we look at risks, it's
23 really the, you know, and we look at risks on a
24 continuous basis. We're changing modes of
25 transportation and changes in shipping campaigns.

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1 MR. GAYNOR: Well, then, is there, I
2 appreciate the detail you've given. Is there a
3 coordination between the two?

4 MS. OSGOOD: Yes, yes. Very much so. In
5 other words, those risks will look at actual package
6 standards, the packaging standards that exist at the
7 time and make predictions about the performance of a
8 package, for example, in normal conditions or
9 incident-free transportation as well as under accident
10 conditions. Thank you.

11 MR. GAYNOR: Thank you.

12 MR. BONNER: Okay. Let's move to the
13 issues piece. And this is not to close out this
14 conversation. We can come back to this issue again,
15 but let's at least start to look at some of the
16 specific issues raised in the proposed rule. And
17 then, if we need to circle back to this conversation,
18 we can. Okay.

19 What we've done is teed up a couple of the
20 issues in discussion of the IAEA related issues. The
21 first on radionuclide exemption values, and issue 8 on
22 grandfathering previously approved packages. And Dave
23 Pstrak is going to lead us through that conversation.
24 Dave?

25 MR. PSTRAK: This first issue is issue

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1 number 2, the radionuclide exemption values. IAEA's
2 previous regulations used a single activity
3 concentration of 70 Bequerels per gram for all
4 radionuclides in exempting materials from the
5 transportation regulations. Although a convenient
6 number, the 70 Bequerels per gram was an empirically-
7 based number.

8 In its current regulations, IAEA adopted
9 a dose-based approach for material exemptions. In
10 this approach, the activity concentration exemption
11 value for each radionuclide is set so that a dose of
12 one millirem per year is not likely for a worker or a
13 member of the public. Similarly, an exempt activity
14 value was also set for each radionuclide.

15 One other aspect of this proposed change
16 is that for national material and ores that contain
17 naturally occurring radionuclides that are not
18 intended to be processed for use of those
19 radionuclides are exempt from the regulations provided
20 that the activity concentration does not exceed ten
21 times the value specified within IAEA regulations.
22 Without this exemption, significant quantities of
23 minimally radioactive material might be regulated only
24 when transported. However, this provision results in
25 different treatment for regulated non-ore materials.

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1 As a means of maintaining compatibility
2 with IAEA, NRC proposes to adopt these provisions.
3 Further, DOT regulates the definition of radioactive
4 material in transport and DOT also intends to propose
5 adoption of these provisions. So, basically, this
6 would change from a single value of 70 Bequerels per
7 gram to a listing as we had already addressed in
8 Appendix A of our Part 71 proposed rule, individual
9 exemption values or exempt quantity values for each
10 individual radionuclide. Thank you.

11 MR. BONNER: Questions, comments on this
12 issue?

13 MS. D'ARRIGO: Who is the IAEA that made
14 up these numbers? Why should we take these numbers?

15 MR. PSTRAK: I'll defer this question to
16 Fred Ferate. I'll fill in just a little bit from what
17 I understand, and that is, that IAEA along with other
18 international bodies had looked at --

19 MS. D'ARRIGO: What input did the American
20 public have on this? Or if there were representation
21 from the United States in the development of these
22 numbers, where were the people representing the United
23 States when we have actually rejected the exemption
24 concept? Congress revoked the policy, the BRC policy,
25 in 1992, and this is coming in through the side door.

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1 We're going to continue to say no to it and I want to
2 know who it is that we should be accepting, who is
3 this IAEA that we should accept their numbers to allow
4 something that we in the United States have said no to
5 numerous times.

6 MR. PSTRAK: Once again, as you heard in
7 the introduction, the IAEA is a United Nations body
8 and we have the competent authority here of the
9 Department of Transportation that is the United States
10 representative to that body.

11 MS. D'ARRIGO: Technically advised by the
12 NRC?

13 MR. PSTRAK: Correct statement. And so,
14 therefore, your input to that is really through DOT
15 and though the process that --

16 MS. D'ARRIGO: Is it too late then for us
17 to say no?

18 MR. PSTRAK: If I could just finish here?

19 MS. D'ARRIGO: I'm sorry.

20 MR. PSTRAK: And through the process of
21 what we're going through today which is a public
22 meeting such as this. So, again, really DOT may have
23 some additional response to this. Fred?

24 MR. FERATE: I agree with you, Diane, that
25 I think that it would be nice if we could find a way

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1 to open up a little bit more, to have a more direct
2 channel to the public for our participation at the
3 early stages in ideas such as this. However, I would
4 point out that the reason we're having the meeting
5 here today is precisely to give you and other people
6 who have misgivings about this to tell us about their
7 misgivings. And yes, we do have the possibility of
8 rejecting. We have not yet issued final rules.

9 MS. D'ARRIGO: Is there any possibility
10 that the NRC would simply reject this exemption
11 section of this rulemaking?

12 MR. FERATE: I think there's a
13 possibility. I think the probability is small but it
14 depends on how much opposition there is. So, please
15 feel free to --

16 MS. D'ARRIGO: Isn't it true that these
17 numbers --

18 MR. FERATE: To give us arguments, give us
19 as many numbers as you can and other people that have
20 misgivings about that, we want to hear from you. Not
21 only NRC but DOT.

22 MR. PSTRAK: Just to elaborate for just a
23 moment on what Fred just said, within our proposed
24 rule beginning on page 21393, we have added here a
25 specific section that we are requesting input from

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1 basically all players, whether it's industry, whether
2 it's public citizen's groups, et cetera, to provide
3 numbers, impact, improvements, whatever the case might
4 be for several issues. And if you look on the next
5 page, page 394, the issue number 2 exemption values is
6 in here as a trigger for, we want to get impact as to
7 what, we want to get information as to what the impact
8 would be.

9 So, again, here is an opportunity for
10 input to be provided, meaning the proposed rule, it's
11 not set in stone yet. And so, here is the opportunity
12 again to voice your thoughts and we will certainly
13 consider them as a comment.

14 MS. D'ARRIGO: Well, my comment is to not
15 adopt these exemption values. If you are going to
16 adopt these new supposedly risk-based, dose-based
17 exempt, unenforceable I would say, new risk scheme,
18 new exemption, which happens to be the exact same
19 numbers that were chosen to allow recycling of
20 radioactive waste and materials into everyday consumer
21 items. And these are the numbers that DOT and NRC are
22 now adopting into regulations in the United States,
23 numbers that allow radioactive materials and waste to
24 be treated as if they're not radioactive.

25 And the numbers that these are based on

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1 are ones that would allow for that stuff to be
2 recycled into anything. Hip replacement joints,
3 braces, toothbrushes. And we're talking about
4 anything, not just metals, concrete, plastic, asphalt,
5 soil. We no longer have, we're changing the DOT regs
6 simply to allow other exempted materials and waste to
7 go unregulated on the roads and rails and barges. And
8 we have clearly spoken over and over again in opposing
9 this and if we need to do it through this technical
10 venue, you will be hearing from us.

11 You've heard some from us before. The
12 specific suggestion was made when the DOT adopted
13 internationally that if you need to adopt risk-based
14 standards, then just adopt the ones that would reduce
15 the allowable exemptions from 70 Bequerels per gram to
16 another because more than half, positively more than
17 two-thirds of the isotopes increase. What you're
18 doing and saying you're being more protective is
19 increasing the allowable contamination in materials
20 that are now going to be exempt.

21 And what I'm saying is that we don't
22 necessarily like the 70 Bequerel-per-gram limit but
23 that's the one that we're living with now. If you're
24 going to make a change, then only change to be more
25 protective for the isotopes whose allowable

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1 concentrations, exempt concentrations go down. And I
2 saw in the DOT response to comments that that was too
3 complex, that the new rule, the new way of doing this,
4 having several hundred specific isotope numbers,
5 that's more complex. But it's too complex to have
6 more than half of them stay at 70 and have the ones
7 that are more protective go down.

8 So, that's the beginning of my comment on
9 this item. It's just the beginning and I want to be
10 clear that it's right within the documentation that's
11 been provided that these are the same numbers that are
12 being used for recycling radioactive material, for
13 dispersing radioactive material into everyday consumer
14 items. And I'm opposed to it.

15 MR. BONNER: Thank you. Let me get your
16 name and affiliation one more time.

17 MS. D'ARRIGO: Diane D'Arrigo. I'm with
18 the Nuclear Information and Resource Service.

19 MR. BONNER: And the reason I keep asking
20 that is because we are creating a transcript for the
21 public record. So, that's why I keep asking for name
22 and affiliation. Please.

23 MR. KRAFT: Dave Kraft, NEIS, Evanston,
24 Illinois. A question was raised in my mind in the
25 last exchange concerning the fact, if I heard

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1 correctly, DOT is our representative to IAEA on these
2 standards, and also NRC acts in an advisory capacity
3 to DOT. So, the question that got raised in my mind
4 is over the last decade in three separate types of
5 hearings on this issue of, well, what has become
6 called below regulatory concern issues, the American
7 public including governors of Illinois, the Illinois
8 Department of Nuclear Safety and many others around
9 the country, have soundly rejected the concept.

10 So, my question is, was DOT informed by
11 its advisors at NRC that in three times in the last
12 decade, the American public has rejected these
13 standards and has DOT brought that information to the
14 IAEA that three times in the last decade, the American
15 public has rejected that standard? And if not, third
16 piece, I ask you to do it as a member of the public
17 now, next time.

18 MR. BONNER: Okay. Any comment? Okay.
19 Let's turn to the next issue. Okay. Let me open it
20 up. Any others who would like to comment on this
21 issue?

22 MS. BAIMAN: -- Dave Kraft. I mean, are
23 you aware that, oh, I'm Sidney Baiman with Nuclear
24 Energy Information Service here, NEIS. Are you aware
25 that Chicago Mayor Richard M. Daley with 17 other

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1 mayors signed a February 23rd, 2002 letter to
2 President Bush expressing grave concerns regarding the
3 transportation of nuclear waste? Are you aware of the
4 fact that there was an accident in the Baltimore
5 tunnel in which a truck/train caught on fire and it
6 was five days, the heat was so high, it was five days
7 before they could even go in to put the fire out?

8 Now, if that had been a radioactive train
9 or truck, I mean, aren't you aware that these
10 accidents do occur no matter how many regulations you
11 have? And which are, seem to be always mismanaged,
12 that we will have very, very serious accidents if we
13 put more radioactive nuclides on the roads?

14 MR. MILLER: You cited the Baltimore
15 tunnel fire as an example and asked if we were aware
16 of things like that. Yes, we are aware of that.
17 Right now, the NRC is taking the information that is
18 being gained from the NTSB and trying to evaluate all
19 the parameters of the Baltimore tunnel fire and
20 evaluate how radioactive shipments of spent nuclear
21 fuel would stand up to the conditions that were
22 experienced in that fire.

23 We exposed our requirements, our
24 requirements dictate that several different kinds of
25 tests are done on these casks, and these tests have to

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1 be done at certain conditions. And to reiterate,
2 we're evaluating the conditions from the fire. We're
3 working NTSB. We're working with the NIST. And we're
4 working with other government agencies to try to get
5 as much information as we can as they gain it in their
6 studies of the fire to determine if we need to make
7 any changes to our requirements as a result of the
8 conditions experienced in that fire and how shipments
9 of radioactive material, specially spent fuel, would
10 stand up to the conditions in the Baltimore tunnel
11 fire.

12 We look at several accidents. We follow
13 severe accidents that happen around the United States
14 and a variety of things, and look at the conditions
15 that happened in those accidents to see how fuel
16 shipments would stand up to it. And that goes into
17 our thinking with regard to the requirements that we
18 have on the packages.

19 You had some more parts to your question
20 that maybe I didn't address?

21 MS. BAIMAN: 17 mayors, you have this
22 letter.

23 MR. MILLER: Oh, you asked if we were
24 aware that 17 mayors had signed a letter to President
25 Bush.

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1 MS. BAIMAN: We're all very worried.

2 MR. MILLER: Yes.

3 MS. BAIMAN: And we feel like we're being
4 bogged down with bureaucratic numbers here, it's
5 really very, very confusing. I mean, I don't even
6 know half the time what you're talking about.

7 MR. MILLER: And I understand that because
8 the field that we're dealing with is a very highly
9 technical field. Right. Well, that's our goal. Our
10 goal is to use science and technology to try to keep
11 the American public safe. That's what we are chartered
12 to do as the Nuclear Regulatory Commission.

13 MS. BAIMAN: My Congressman Danny Davis
14 voted the wrong way and he was told by you people that
15 there had been no accidents. Now, wasn't this tunnel
16 an accident? There have been a lot of terrible
17 accidents. So, don't go around telling your
18 congressmen that there have been no accidents in the
19 past, therefore, it's going to be safe to ship these
20 --

21 MR. MILLER: Okay. There was no
22 radioactive --

23 MS. BAIMAN: What was the accident in the
24 tunnel, for goodness sakes?

25 MR. MILLER: Thank you for your comment,

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1 ma'am.

2 MS. BAIMAN: You're welcome.

3 MR. BONNER: Okay. Any further comments
4 on this issue?

5 MS. D'ARRIGO: Yes.

6 MR. BONNER: Diane, can I ask you to keep
7 your comments concise?

8 MS. D'ARRIGO: You wanted numbers and you
9 wanted specifics.

10 MR. BONNER: Please.

11 MR. MILLER: Before you start, Diane, I
12 think what she's trying to get to is we've asked for
13 comments as part of this proposed rule and as part of
14 the comments, it helps us if we have the basis for the
15 comments. And I think that's what you're trying to
16 get to? Did I make myself clear, Diane? I mean, if
17 you're trying to make a comment, we don't want any
18 nuclear shipments, okay, or --

19 MS. D'ARRIGO: And we don't want
20 radioactive materials to be treated as if not
21 radioactive for the terms of DOT and NRC transport
22 regs.

23 MR. MILLER: Right. And helping us to
24 evaluate the comments from all commentators that we're
25 going to get, it also helps us a lot when we consider

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1 what if anything has changed from the proposed rule to
2 the final rule, to evaluate the basis for the
3 comments, so that if we see a basis that we haven't
4 considered, we can consider that.

5 MS. D'ARRIGO: All right. I'm saying, we
6 commented on DOT's before NRC has made a decision on
7 this yet, DOT has, DOT said in its response to the
8 comment that I just gave about not raising the
9 allowable Bequerels per gram, -- Curies per whatever,
10 that that would be too technical, that you can't just
11 keep two-thirds of them at 70 and if they happen to in
12 this new risk informed thing go down to ten or one
13 Bequerel per gram, I'm saying I'm okay with that if
14 you're going to reduce the amount of contamination.
15 But don't raise it higher than we've already been.

16 That was the backup to saying don't change
17 it. I'm saying if you're going to change it, then
18 only change it in a way that makes it more protective.
19 If you've been able to live with the 70 Bequerel-per-
20 gram exemption number which once I get into what that
21 means, and I'm not going to do that right now but if
22 I explore that further which I am in the process of
23 doing, I may not like that either. Maybe you ought to
24 change that and make the whole thing be less. But if
25 you want to do it on an isotope by isotope basis and

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1 reduce the, I mean, and make it an isotopic
2 concentration, then make it only, change it only if
3 you're making it more protective.

4 Okay. That's what I was saying. But
5 that's not what I got up here for. Oh, go ahead.

6 MR. FERATE: I think, if I may paraphrase
7 what I think Diane is talking about right now are the
8 activity concentration exemption values some of which
9 went up from 70 Bequerels per gram and some of which
10 went down. And I think, correct me if I'm wrong,
11 Diane, that you are saying that for those that went
12 down, you'd like to adopt the new values, but for
13 those that went up, you want to keep those values at
14 70 Bequerels per gram?

15 MS. D'ARRIGO: My first comment and my
16 comment that I made to DOT International and that I
17 think you heard from many people is don't increase.
18 I mean, just simply don't increase above 70 for any
19 isotope. And yes, I mean, what you're saying is
20 correct, if you're going to make changes to the
21 exemption levels, exemption concentrations, then only
22 do it in a way that reduces the Bequerels per gram
23 that are exempt for the concentration tables.

24 For the quantity tables which I don't know
25 what the precedent is, it looks to me like there is no

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1 exempt quantity already on the books, simply don't
2 adopt that table. I mean, ideally, don't adopt the
3 new chart A₂ or whatever you're calling it. Not the
4 A₁, A₂ values but --

5 MR. FERATE: The exemption values.

6 MS. D'ARRIGO: The exemption
7 concentrations and quantities.

8 MR. BONNER: Table 2.

9 MS. D'ARRIGO: Table 2, simply don't adopt
10 that. And as what you've said to me on the phone is
11 that this is currently not adopted internationally, is
12 that right, Fred? I mean by the US for DOT
13 international regs at this point, that you're waiting
14 until this rulemaking to make the decision on DOT's
15 international regs on exempt quantities and
16 concentrations.

17 MR. FERATE: DOT's regulations are
18 actually national, not international. They are for
19 the United States. However, we authorize, as I
20 mentioned earlier, we authorize shippers and receivers
21 to follow the, for example, the ICAO technical
22 instructions. If they're shipping or receiving
23 material by air, so long as they add the additional
24 conditions that they also have to not ship anything
25 that's over 70 Bequerels per gram, for example, and if

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1 a quantity has a certain A_2 value in Title 49 and, say
2 a higher A_2 value in TS-R-1, recall that the A_2
3 values, the maximum amount that you can put in a type
4 A package, we would say you can only put in a Title 49
5 amount in a type A package. And if you're above that,
6 you'd better use a type B package.

7 In other words, you take the more
8 conservative approach. That is our present situation
9 until we resolve whether or not we are in fact going
10 to adopt, in this case, the new A_2 values or A_1 , A_2
11 values.

12 MS. D'ARRIGO: But how does that relate to
13 the exempt tables?

14 MR. FERATE: Pardon?

15 MS. D'ARRIGO: How does that relate to the
16 exempt concentration and quantity tables?

17 MR. FERATE: Well, that is part of our
18 proposal. We are asking that you look at that, that
19 you give us your arguments, your views on this.

20 MS. D'ARRIGO: But what's the current
21 status of the DOT's international or the DOT's
22 regulation for international shipments with regard to
23 exempt quantities and concentrations? I thought those
24 tables were not, I thought you told me those tables
25 were not adopted yet?

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1 MR. FERATE: Well, they're not adopted in
2 our domestic regulations. They're not adopted either
3 in Title 49 or in 10 CFR 71.

4 MS. D'ARRIGO: Okay. Well, what I came up
5 here this time to talk about is a little different,
6 but it's on this issue.

7 MR. FERATE: All right. I think I better
8 stop and let you go ahead.

9 MR. BONNER: Can I step in here for just
10 a second? We have at least four other, I think,
11 substantial issues to talk about, in about an hour and
12 ten minutes left.

13 MS. D'ARRIGO: I'm not letting this one
14 go.

15 MR. BONNER: Okay. I understand. I think
16 what, to paraphrase what NRC and DOT are looking for,
17 I think they're looking for why do you have the
18 opinion you have.

19 MS. D'ARRIGO: Because I don't want to be
20 exposed to radiation daily without knowledge. And I
21 heard here earlier that there was a millirem, this is
22 a made-up amount of damage to tissue that is
23 calculated depending on what computer model written by
24 whatever radiation bureaucracy you choose decides, and
25 this is a certain amount of dose. It can change

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1 depending which model you use.

2 Regardless of that, I'm hearing that these
3 numbers, that these charts that we're being asked to
4 comment on and that I'm saying don't adopt, that these
5 would lead to a one millirem per year dose to people.
6 But within the evaluation of these numbers, within the
7 description of the rulemaking, I'm seeing that
8 choosing just 20 of these elements, that the average
9 dose was more like 23 millirems. I'm trying to square
10 the one millirem claim with the 23 millirem average,
11 and then the average for all 70, the current one is
12 supposedly 50 millirems a year.

13 I honestly don't really believe that
14 there's going to be any control over the number of
15 millirems which is why I would push for no additional
16 radioactive contamination being exempted. But if you
17 are claiming that it's only a millirem and a certain
18 amount of risk, then what's the deal with all these
19 23, 42, 50 millirem evaluations of the numbers? And
20 that's what this meeting is about. I'm sorry.

21 And this is an issue that shouldn't be in
22 this rulemaking in the first place. You tried to
23 sneak it in and if we take up half your meeting on it,
24 get ready because this is not something the American
25 public is going to accept. And we're blowing the

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1 whistle on the DOT and NRC trying to sneak this in.

2 MR. PSTRAK: I think Fred was going to
3 make a comment.

4 MR. BONNER: What's that?

5 MR. PSTRAK: Fred?

6 MR. FERATE: I think the important thing
7 is to know what your views are. That's what the
8 meeting is for, to try to get comments. I have been
9 open to you in the past, Diane, and will be open in
10 the future to try to go through in more detail what I
11 know about the issue.

12 Actually, the one millirem per year, for
13 example, that was used with the, how do we say that,
14 that was the criterion that was used to try to
15 determine initially the exemption activity
16 concentrations and the exemption consignment
17 activities. The story is somewhat long and complex.
18 However, it is described in the preamble in the DOT
19 notice.

20 One of the things that I mention there is
21 that these were first used as criteria to determine
22 exemption values for fixed facilities. And after they
23 had done that and found that they had some several
24 hundreds, I guess, of numbers, they decided, well,
25 let's try to simplify the situation a little bit by

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1 putting these numbers in powers of ten. So, by doing
2 that, it got away from the one millirem, and in some
3 cases, the exemption value that they decided on might
4 have led to five millirem or eight millirem or
5 sometimes a tenth of a millirem per year.

6 So, the numbers became fuzzy by trying to
7 reduce the number of different exemption values.
8 You'll notice in the table that they're all in powers
9 of ten, you know, ten or a hundred or a thousand and
10 so on. Another thing is that they had decided to look
11 at these 20 particular radionuclides under transport
12 scenarios, and if the numbers that they got were not
13 more than one to two orders of magnitude different
14 than the numbers that were obtained for the fixed
15 facilities, that then they would stay with the numbers
16 for the fixed facilities. And that, again, made the
17 numbers a little bit more, a little wider in range of
18 final doses that one would get.

19 What they did with those 20 radionuclides,
20 the first thing they did was under the scenarios that
21 they looked at was to see if we transported those at
22 70 Bequerels per gram, what kind of annual doses would
23 we get? Therefore, those 20 radionuclides, they got
24 an average of 50 millirem per year for the 20 that are
25 most commonly transported. With the new exemption

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1 values in TS-R-1, they looked at those same 20
2 radionuclides and said, what dose would we get with
3 those exemption values? And the average turned out to
4 be 23 millirem per year.

5 So, globally, by accepting the new values,
6 the average dose for those 20 most commonly
7 transported radionuclides has been lowered by a little
8 over 50 percent.

9 MR. BONNER: Okay. There are four other
10 issues that we have identified as well as the 19 that
11 are in the rule. We can continue with this one or we
12 can move through the others and then circle back to
13 this. I guess, I want to open up rather than having
14 this issue dominate the entire conversation, open it
15 up to others to talk about some of the other issues
16 that may be of import to them.

17 So, what I'd like to do is close this one
18 off for now and come back to it, okay? Let's work
19 through the other issues, get some public comment on
20 the other issues and come back to the exemption values
21 one. I also want to point out that you've got other
22 opportunity to comment in addition to commenting
23 verbally in this meeting through your response forms.

24 MS. D'ARRIGO: I would just comment then
25 on ending this at this point, that even though I don't

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1 think millirems is, this is evidence that millirems is
2 a very fluid term. It's not a real enforceable,
3 verifiable term, that we're being told not to worry
4 about exempt quantities, exempt concentrations of
5 radioactive materials because it's only going to give
6 us a millirem. But it's going to, the 20 most
7 commonly shipped ones with the new values supposedly
8 are at 23 millirems. What is this? Per year, per
9 month, per day, per hour, per person, per shipment,
10 per practice?

11 What I'm saying is that probably, I bet
12 there is not anyone in this room that can fully defend
13 this issue. And you do better off just taking it
14 right out of this rulemaking. And if you're going to
15 try to defend it, then you'd better defend the people
16 that made up the numbers that lead to these 23's and
17 5's and those were the IAEA and the other agency
18 people that dreamt this up in the first place to
19 simply justify letting nuclear materials be
20 unregulated and released into commerce and recycled.

21 And don't try to deny it. And if you want
22 to talk numbers, I'll talk numbers. But that doesn't
23 seem to be what we want to talk right now.

24 MR. BONNER: Thank you. Dave,
25 grandfathered packages.

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1 MR. PSTRAK: The next issue is issue
2 number 8, grandfathering previously approved packages.
3 And in this issue, TS-R-1, the latest version of IAEA
4 regulations, it is more restrictive in this area of
5 grandfathering than in previous versions of the IAEA
6 regulations. Improvements in IAEA regulations support
7 that newer post-1973 packages have improved safety
8 features that were lacking in other types of packages.
9 And within our proposed rule, we have specified that
10 there are six areas where some of the packages that
11 were approved to the 1967 standards of Safety Series
12 Number 6 did not have the additional improvements that
13 were in place for the post-1973 Safety Series 6 type
14 packages.

15 Overall, the overall impact of adopting
16 the TS-R-1 into Part 71 is the discontinued use of
17 Safety Series 6 1967 packagings, the discontinued
18 fabrication of Safety Series 6 1973 packagings but
19 continued use would be allowed for those packages, the
20 discontinuance of the fabrication of Safety Series 6
21 packages based on the 1985 IAEA regulations. That
22 discontinued fabrication would end as of December
23 31st, 2006. Continued use would be allowed, however.

24 Packages that were previously approved for
25 use by the pre-1996 requirements can, on a case by

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1 case basis, be submitted to the NRC for consideration,
2 for approval to the current standard. So, those
3 people that are in the industry of using type B
4 packages that are what is identified in the industry
5 as being an open parenthesis package, that's the
6 identification to indicate that that package was
7 approved under the 1967 standard, the NRC is proposing
8 to eliminate those, not allow them to be used. We
9 would phase that in over a three-year period once this
10 final rule is adopted.

11 Those packages could, however, if industry
12 holders would want to bring that package in and let it
13 be analyzed by the NRC packaging group that certifies
14 the packages, those packages could be re-certified,
15 but they would have to meet the current requirements
16 found in the 1996 version of TS-R-1. So, we're,
17 again, looking to eliminate a group of packages. DOT
18 in their rule has a very similar proposed rule. You
19 can certainly read that in the information you have
20 from DOT.

21 MR. BONNER: Comments, questions on the
22 issue of the grandfathering of the packages? Any? It
23 looks like, what's your name again?

24 MS. REESE: Joy Reese. That proposed
25 three-year transition period, this seems like it's

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1 very loose and it would allow a lot of things
2 happening that shouldn't be happening.

3 MR. PSTRAK: There are many types of
4 packages that are out being used in the industry.
5 Some are 1967 approved, some are 1973, some are 1985.
6 So, I'm not quite sure what percentage might be
7 directly impacted by this. Again, that's one of the
8 areas we're looking for, direct input from industry
9 and from stakeholders as far as what the overall
10 impact would be by eliminating that particular
11 category of package.

12 MR. BONNER: In your packet, you have a
13 table that breaks down the issues by the IAEA
14 compatibility changes and the NRC initiated changes.
15 It's in the blue packet. Okay. No, just a single
16 sheet that just summarizes the issues.

17 I'd like to open up now, because we did
18 not tee up the other IAEA issues. We do have
19 transparencies, and are ready to do that, if you would
20 like us to talk about those and give an opportunity to
21 comment on them. Are there other issues that you see,
22 1 through 11, that you would like to either comment or
23 see discussed more fully? You do? What would you
24 like?

25 MS. D'ARRIGO: Discussion of the deep

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1 immersion test, the crush test and --

2 MR. BONNER: So, number 7, number 10?

3 MS. D'ARRIGO: Yes.

4 MR. BONNER: Nancy?

5 MS. OSGOOD: We have a little explanatory

6 --

7 MS. D'ARRIGO: Now, these pertain to the
8 type B containers? Is that right?

9 MS. OSGOOD: Yes. Yes.

10 MS. D'ARRIGO: So, this would irradiated
11 fuel shipment containers that we were talking about
12 before for shipping like to Yucca and so forth?

13 MS. OSGOOD: Right. Let me, we have
14 little bullets for each of these issues, so I'll just
15 read the prepared bullet and then you can ask
16 questions and we can discuss it.

17 Issue number 7 is the deep immersion test.
18 Previous IAEA regulations required an additional
19 immersion testing for packages of irradiated fuel
20 containing greater than 10^6 Curies. TS-R-1 expanded
21 the applicability of the test to any type B package
22 and type C package with contents greater than 10^5 A₂.
23 The expansion and scope of the deep immersion test was
24 due to the fact that radioactive materials such as
25 plutonium and high level waste are increasingly being

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1 transported by sea in large quantities.

2 And the NRC proposes to adopt this
3 provision, and basically, the bottom line of adoption
4 would be to subject this deep immersion test, the 200-
5 meter immersion test to another additional group of
6 packagings. Currently in the regulations, only spent
7 fuel packages are required to be subjected to this
8 test. The new TS-R-1 expands this test to another
9 group of packages.

10 Okay. I think if the, are there any
11 comments about that?

12 MR. BONNER: Comments, questions on the
13 deep immersion test?

14 MS. OSGOOD: I think the other test was
15 the crush test which is issue number 10. Both Safety
16 Series 6 and the current 10 CFR 71 and 73 require the
17 crush test for packages having a mass not greater than
18 1,001 pounds and an overall density of 62.4 pounds per
19 cubic feet or the density of water. Basically, this
20 test applies to what we call small, light packages.
21 And radioactive contents greater than 1,000 times an
22 A₂, that's transported not as special form.

23 Under TS-R-1, the criterion for
24 radioactive contents greater than 1,000 A₂ has been
25 eliminated for packages containing fissile material.

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1 The 1,000 times an A₂ criterion continues to apply to
2 all type B non-fissile and newly created type C
3 package designs. This broadened application was
4 created in recognition that the crush test environment
5 was a potential accident force that should be
6 protected against for both radiological safety
7 concerns, for example, packages containing more than
8 1,000 times an A₂ in normal form and for criticality
9 safety purposes.

10 The current test requirements in 10 CFR
11 71, 73 differ from those in TS-R-1 and Safety Series
12 6. Specifically, TS-R-1 and Safety Series 6 both
13 require performance of the nine-meter free drop test
14 or the crush test but not both. And our regulations,
15 10 CFR Part 71 require both the crush test and the
16 nine-meter free drop.

17 This is very complicated language but the
18 basic bottom line of this as with the immersion is
19 that this crush test for small, light packages would
20 now be required for an additional set of packages.
21 Right now, the crush test is only required for small,
22 light packages that have a very high radioactivity
23 content. Now, that crush test will be required for
24 both those packages as well as fissile material
25 packages regardless of the quantity of radioactivity,

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1 as long as they're carrying fissile material.

2 So, basically, we were expanding the
3 number of packages that would be required to be able
4 to withstand this test condition. Are there any
5 questions about that?

6 MR. BONNER: Are there any questions about
7 these issues first? And second, what are your
8 opinions and comment on them? None? Okay. Let's
9 turn to --

10 MS. OSGOOD: Oh, I think there was one
11 additional one. The fissile packages by air.

12 MR. BONNER: Was that another one, Diane,
13 that you have?

14 MS. OSGOOD: The number 11, did you want
15 a little discussion of that issue as well? Basically,
16 that's also an additional test. It's for fissile
17 packages that may be transported by air and the idea
18 was that perhaps the air crush conditions would exceed
19 those that a package might be subjected to in highway
20 or rail accidents, and that the test should show that
21 there would be sub-criticality of the fissile material
22 even in a severe air crash. So, again, that's an
23 additional test that would be imposed consistent with
24 the new TS-R-1 requirements.

25 MR. BONNER: Again, the opportunity for

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1 comments or questions on the packaging and the tests.
2 No? Okay.

3 Let's turn back to the discussion of the
4 NRC related issues which are on the bottom half of
5 that page on that table. We started with the
6 discussion of issue 12, special package
7 authorizations, issue 15, change authority, and issue
8 17, double containment of plutonium. And then, again,
9 I'm going to broaden out the conversation to say if
10 there are other issues on the bottom half of that
11 table that you would like to talk about, we can do
12 that. Nancy?

13 MS. OSGOOD: Okay. The first one that we
14 wanted to highlight of the NRC issues was issue number
15 12 which is called special package authorization.
16 This issue, issue number 12 is based on lessons
17 learned from the shipment of the Trojan reactor vessel
18 that took place in 1998. The basic situation with the
19 Trojan reactor vessel was that shipment was necessary
20 for disposal and decommissioning of their facility,
21 but it was too massive to satisfy all the performance
22 requirements of the package standards in 10 CFR Part
23 71.

24 Since there was no Part 71 regulatory
25 provision for dealing with packages that were that

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1 massive, the staff used the 10 CFR Part 71 exemption
2 provisions, and that in turn led to an additional
3 application processing including a special review team
4 and reviewed by the Commission itself. Indications
5 from the industry are that such requests will likely
6 continue. In other words, there are many large
7 components from decommissioning plants that must be
8 shipped for final disposal.

9 The proposed special package authorization
10 would preclude the use of exemptions for what appears
11 would become recurring casework. This provision would
12 also help integrate the review of unusual packages
13 with other Part 71 casework and help standardize the
14 reviews as well. The proposed rule makes clear that
15 the threshold for acceptance for special package
16 authorization is set high in that the provision would
17 typically apply to one time disposal shipments. And
18 then, that special package authorizations would be
19 subject to a case by case review similar to that used
20 for other packages.

21 Basically, this provision would be
22 consistent with IAEA. IAEA has what they call a
23 special approval process that they can look at special
24 shipment and consider operational controls as well as
25 package performance standards.

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1 MR. BONNER: Do you have comments and
2 questions in the special packaging authorizations?
3 Questions for Nancy? We should move on. Issue 15,
4 change authority.

5 MS. OSGOOD: This issue concerns the
6 Commission direction to conform 10 CFR Part 71 which,
7 as you know, concerns transportation of radioactive
8 material to recent change to Part 72 regarding the
9 authority for making minor design changes. Part 72
10 governs spent fuel storage facilities and the
11 licensing by NRC of these facilities. A factor here
12 is that IAEA regulations call for changes to type B
13 transport package designs to be reviewed by the
14 competent authority and not certificate holders.

15 Designs changed by certificate holders
16 without NRC review might not be accepted
17 internationally. Also, Part 71 and Part 72 cask
18 approval processes differ such that some Part 72
19 change requirements have no counterpart in Part 71.
20 For example, Part 72 calls for all changes to be
21 updated in the final safety analysis report for the
22 facility. But in 10 CFR Part 71, there is no FSAR
23 requirement for packages.

24 To respond to these issues, NRC is
25 proposing that two methods be provided for minor

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1 changes to 10 CFR Part 71 designs, in other words,
2 transportation casks that are certified by NRC to 10
3 CFR Part 71. First, continue the current Part 71
4 amendment process for minor design changes.
5 Currently, any change to a package design must be
6 reviewed and approved by NRC prior to use by a
7 licensee. These amendments require NRC staff review
8 and amended certificates are accepted internationally.
9 And this method maintains compatibility with the IAEA.

10 Second, however, NRC is proposing a new
11 Subpart I to 10 CFR Part 71 that would permit
12 certificate holders of dual purpose spent nuclear fuel
13 casks intended for domestic use to make minor design
14 changes without NRC prior approval. Also, Subpart I
15 provides for 7248 type changes in a matter that is
16 consistent with part 71. And the basic outcome of
17 this proposal is that there will be a new package type
18 that recognizes the way the nuclear industry is
19 dealing with storing spent fuel at their facilities
20 for future shipment to a final repository in dual
21 purpose casks.

22 In other words, the cask can serve as a
23 storage cask at a facility and then be transported for
24 final disposal. And this would allow certificate
25 holders for those cask designs to make some changes to

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1 their designs without NRC approval prior to use.

2 MR. BONNER: Comments or questions on this
3 one? On change authority? Is everybody waiting to
4 circle back? Is that what we're doing? Okay.

5 MS. OSGOOD: And I know these issues are
6 complicated and I'm happy to try to clarify anything.

7 MR. BONNER: Okay. Issue 17, double
8 containment of Plutonium.

9 MS. OSGOOD: This issue resulted from a
10 petition to NRC to eliminate the current Part 71
11 requirement that plutonium in amounts exceeding 23 be
12 shipped in a package with separate inner and outer
13 containers. IAEA regulations have no double
14 containment provisions. Staff has reviewed the
15 petition and believes that NRC's type B packaging
16 standards provide adequate containment for all
17 radionuclides including plutonium without the need for
18 double containment. Part 71 already excludes common
19 solid forms of plutonium from double containment
20 provisions including spent fuel, metal and glass --

21 The staff has proposed granting the
22 petition, noting that the solid form requirement would
23 be retained, in other words, large quantities of
24 plutonium would continue in transport only in solid
25 form and liquids would not be allowed. The proposed

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1 rule treats plutonium on the same transport risk basis
2 as all other radionuclides based on IAEA's Q System
3 which is a dose-based system. The reduction and
4 redundant packaging barriers might reduce shipper
5 doses by simplifying loading operations and reduce
6 shipper costs through a resultant increase in package
7 payload.

8 MR. BONNER: Any comments and questions on
9 this one? On double containment? Anyone?

10 Let me go back again to the sheet and ask,
11 the issues on the bottom part of this table, the NRC
12 initiated changes, are there additional issues that
13 you would like us to talk about at this point or on
14 which you have comments or questions? Anyone? Yes,
15 please. Bottom part, yes.

16 MR. KRAFT: And then where are you going
17 --

18 MR. BONNER: I'm going to circle back to
19 other issues that were brought up earlier. Okay.
20 Name again.

21 MR. KRAFT: Dave Kraft, NEIS, Evanston,
22 Illinois. I guess it's more of an observation and
23 opportunity for DOT to convey some information to the
24 internationals as well, but I understand the purpose
25 of today's meeting is to discuss harmonization of

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1 regulations.

2 Somewhere along the line though, I guess
3 the question comes up for me whether there are real
4 world rationales for either of your standards, the
5 IAEA's or NRC's. For example, all of the different
6 test standards, the cask standards that already exist
7 are fairly arbitrary from the way I look at it, you
8 know. So, you boil a cask for an hour at a certain
9 temperature, what happens if it's a 50-minute fire or
10 an hour and ten-minute fire.

11 I mean, I understand there's a need for
12 some cutoff, but increasingly, given the discussion
13 earlier about the Baltimore fire, we could add into it
14 the bridge accident on the Arkansas River and many
15 other accidents that have just been in the news
16 recently. The real question is not, for us, whether
17 your standards are met, whether they're international
18 or domestic. What's of real concern is whether these
19 standards reflect real world and whether you can
20 protect us in the real world.

21 Now, clearly you can't in terms of the
22 terrorist threat. That's been demonstrated twice
23 already. So, I guess what it comes down to for me is
24 at some point a discussion needs to take place whether
25 both sets of standards are reflective of the real

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1 world of transportation on either American or
2 international highways, bridges, barges, roads,
3 whatever, given what we're seeing as a changing
4 transportation sector, changing traffic volumes, urban
5 sprawl, those kinds of things. I think that at some
6 point needs to be a much more productive kind of
7 discussion than how many Curies, you know, dance on
8 the head of a fuel rod.

9 MR. BONNER: Response, comment?

10 MS. OSGOOD: Do you want me to respond?
11 I think that's an excellent observation, and because
12 basically, bottom line, that's what we're interested
13 in is really how these packages are protective in real
14 world transportation. And I think you have a good
15 observation to that. A lot of testing standards seem
16 a bit arbitrary. I mean, where did 30 feet come from?
17 Where did the half-an-hour fire come from?

18 And I think that, but there is a good answer to
19 it, and it's a two-part answer really.

20 The standards were set and have been used
21 for many, many years, and NRC as well as international
22 organizations and other domestic agencies and other
23 countries review their histories of transportation
24 including severe transportation, what you might call
25 beyond regulatory basis kinds of accidents. And they

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1 postulate how actual packages would perform under
2 those conditions. And that's part of the feedback
3 process, I think, we were talking about earlier with
4 looking at risk and transportation and these standards
5 that are seemingly a bit arbitrary.

6 The NRC has over the years periodically
7 revisited actual accidents to look at the forces and
8 the challenges that would be presented to these casks
9 in actual transportation accidents. And you mentioned
10 the Baltimore tunnel fire, I think that's a good
11 example. We, I think it was in 1987, published what
12 we called a modal study which was we actually had a
13 contractor look at severe highway and rail accidents
14 and to evaluate the actual physical conditions that
15 would be present in those accidents and then postulate
16 their effect on spent fuel cask that would be possibly
17 in that accident.

18 And one of the accidents that they looked
19 at, you know, this beyond kind of a regulatory basis
20 accident was the Livingston tunnel fire, and I'm not
21 sure when it happened but it was in California, I
22 believe, and that train fire included several
23 hazardous materials that actually exploded after five
24 days of fire and that fire was so intense that, again,
25 firefighters couldn't go in to put it out. And so,

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1 the NRC's contractor evaluated how the spent fuel cask
2 would perform in that fire, in that accident condition
3 even though it's what we would call beyond the
4 regulatory basis accident.

5 And the conclusion was that although the
6 physical challenges would actually exceed the
7 regulatory tests, that the performance of the package,
8 although it wouldn't meet our strict regulatory
9 acceptance standards, that the package would not have
10 what I would call gross failures. There would not be
11 gross releases of radioactivity or gross increases in
12 the radiation environment for the fire fighters and
13 for the emergency response personnel.

14 So, I think it's a very good point and one
15 of the projects that we're currently involved in which
16 is called the package performance study is revisiting
17 those earlier works as far as reviewing actual
18 accidents and the conditions in the actual accidents.
19 And we expect this to be about a five to six-year
20 project and we hope that the project will culminate in
21 the actual physical testing of a large spent fuel
22 cask. But again, I think that the agency views your
23 comment very seriously and we have tried to be very
24 proactive in reviewing our regulations on a continuing
25 basis.

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1 And I might add that this periodic
2 revision by the IAEA is intended to do that as well.
3 What new information has become available in the last
4 few years that would warrant us revisiting the
5 adequacy of our regulations in making that judgment.
6 And that's what we, you know, that's the intent of
7 these rather frequent and maybe rulemaking processes.

8 MR. KRAFT: Just a short followup
9 question. The casks that are currently licensed are
10 undergoing that six-year review? Is that what you're
11 suggesting?

12 MS. OSGOOD: The package performance
13 study, is that what you were talking to?

14 MR. KRAFT: Yes.

15 MS. OSGOOD: The package performance,
16 okay.

17 MR. MILLER: The package performance study
18 is aimed at actually doing physical testing of a real
19 cask, not just analysis.

20 MR. KRAFT: Okay. And that cask is
21 already licensed, correct?

22 MR. MILLER: That cask will be amongst
23 the, you know, there are several designs of casks that
24 are licensed.

25 MR. KRAFT: Right.

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1 MR. MILLER: We picked one, we're going to
2 pick one typical design, okay, that's licensed, and
3 undergo a whole battery of tests, use the results of
4 those tests, and those tests will be over and above
5 what our regulations require, and that battery of
6 tests is going to be used to determine how well the
7 analytical tools that are used to predict what would
8 happen in certain accident scenarios are.

9 In other words, we'll use actual physical
10 testing of a full cask to determine if the analytical
11 tools are predicting properly what would really
12 happen. We believe that they are, from tests that had
13 been done in the past, or from smaller component
14 testing or prototype testing. We're going to do a
15 full-size cask. And what we're seeking is as part of
16 the whole process of, and Nancy mentioned five or six
17 years, part of that process is we're seeking public
18 input into a public participating process in how we
19 are conducting those tests and what those tests are
20 and what the full nature of those tests are.

21 MR. KRAFT: One final request along those
22 lines. It's sort of a personal pet peeve of mine that
23 the Nuclear Energy Institute uses the Sandia crash
24 films as demonstrations of cask safety tests. My
25 understanding is what they were was exactly what you

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1 just described. Those are simulations designed to
2 confirm computer models. Would you please order the
3 NEI to refrain from that misleading language? You're
4 the regulators.

5 MR. MILLER: Okay. We can't order them to
6 refrain from that. I mean, they are --

7 MR. KRAFT: Okay. You can't order them.
8 Would you please correct --

9 MR. MILLER: They're an industry group.
10 They have free speech.

11 MR. KRAFT: Would you please correct them
12 in public then so that they don't continue misleading
13 the public?

14 MR. MILLER: Yes. I think in every public
15 forum where the NRC is asked those questions, the NRC
16 discounts any endorsement from a regulatory
17 perspective of those tests. Those tests were done a
18 number of years ago.

19 MR. KRAFT: Right.

20 MR. MILLER: They had a purpose. They
21 were not done to all the standards that are required
22 in the NRC regulations. And what we're trying to do
23 is --

24 MR. KRAFT: What I'm asking here is that
25 the federal regulator that holds this industry

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1 accountable needs to promote a certain level of
2 respectability among the public and credibility. And
3 if you allow the industry that you regulate to
4 continue to disseminate misleading information, I
5 think it affects your credibility, too. So, I'm
6 asking you to take that seriously, to ask them to
7 simply refrain from misleading the public.

8 You don't have to order them, and you
9 can't. I understand that. I'm merely asking for a
10 change in the way information is described in public.
11 That's all.

12 MR. MILLER: Okay. What we can certainly
13 do is in dialoguing with the industry, tell them the
14 public's views and perceptions and concerns. But
15 that's the extent at which we can do that with the
16 industry in that regard, okay, and with regard to
17 statements that they are making publicly.

18 MR. BONNER: Name again?

19 MS. MUSIKER: Debbie Musiker, Lake
20 Michigan Federation. I have one comment and then one
21 question. My comment is I hope that this package
22 performance study is going to be completed before you
23 finalize this rulemaking so that you can be educated
24 by the study in determining whether it's appropriate
25 to make changes to harmonize the rules. And my

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1 question --

2 MR. MILLER: Can I respond to that before
3 you go on to the next question?

4 MS. MUSIKER: Sure.

5 MR. MILLER: In all likelihood, that study
6 will not be completed before this rulemaking is
7 finalized. But if the results of that study cause us
8 to have to modify the rules further based upon the
9 knowledge we gain on that study, we will do so.

10 MS. MUSIKER: Okay. That seems like that
11 could leave us at risk in that interim period. My
12 question relates to the last topic we were on about
13 double containment. And I was wondering if there is
14 any basis to eliminate the double containment
15 requirement other than the need or the desire to
16 harmonize the rules?

17 MR. BONNER: Nancy?

18 MS. OSGOOD: The double containment
19 provision has a very long history. I think it was
20 first put into the regulations in 1974, I believe.
21 Before, it was put into the rule before there was what
22 I would call quantified type B package standards. In
23 other words, it was singled out for special
24 consideration because the nuclear industry was just
25 kind of getting started and there were possibly plans

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1 to ship large quantities of plutonium nitrates in
2 liquid form.

3 The NRC decided that that was not a good
4 idea for public safety and that large quantities of
5 high radioactivity, of high content liquids was not a
6 prudent way for the industry to evolve. And so, they
7 instituted this requirement for plutonium to be
8 shipped only in solid form. In other words, they
9 prevented plutonium liquids from being shipped, you
10 know, plutonium in large quantities from being shipped
11 in liquid form.

12 And that was the main thrust of that
13 rulemaking at that time in the early 70's. But then,
14 the agency said, well, if it's not being shipped, if
15 we're going to stop it being shipped in liquid form,
16 we should also consider that it may be shipped in
17 other forms that are equally -- or equally dispersable
18 in the environment. And there had been experiences at
19 that time with human error in operating radioactive
20 material packages. So, that's why those two
21 provisions were introduced into the regulation.

22 Since that time, there have been a number
23 of what I would call significant safety enhancements
24 to the packaging standards for type B packages. And
25 they're applied universally to all radioactive

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1 isotopes including plutonium. And that includes the
2 type B standards that limit the allowable releases to
3 basically no release under normal conditions and a
4 very limited release under hypothetical accident
5 conditions. Because those rules now are in effect, I
6 think the agency believed that there was no, it was no
7 longer necessary to single out that plutonium as a
8 special case when we had the type B standards that
9 would limit releases from packages.

10 The other thing was that there are risks
11 involved with just normal transportation accidents.
12 In other words, trucks have collisions with cars and
13 things like that, and there are just accident risks
14 that don't have anything to do with the radioactive
15 property of the cargo. And having the double
16 containment provision actually limited the amount of
17 material that could go in a single package. And if
18 you have a given volume that you have to ship, that
19 would increase the total number of shipments, and you
20 would be then incurring some risk due to just the
21 additional number of shipments.

22 And so, there was a balance. And
23 basically, I think the agency believed that there was
24 adequate protection with the type B standards that
25 were used for other radioactive isotopes that should

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1 be also adequate for the plutonium isotopes, and that
2 there was a benefit in reducing the total number of
3 shipments.

4 MR. BONNER: Thank you. Yes?

5 MR. DORUFF: Mark Doruff, Council on
6 Radionuclides and Radio-pharmaceuticals. One comment
7 regarding NRC initiated changes, this isn't part of
8 the docket but I just wanted to elaborate a little bit
9 on a comment made earlier regarding security. My
10 comment is NRC and DOT should be commended for at
11 least coming up with a concurrent rulemaking, I think
12 the way these traffic rules or -- rules are
13 promulgated was much better than the way it was done
14 the last time when 1985 Safety Series 6 was
15 promulgated. And I think both agencies should be
16 given credit for that.

17 Having said that, I think that if there is
18 any initiative under way by the NRC to enhance
19 security of radioactive materials in transportation,
20 I strongly urge the agency to work with the DOT in an
21 effort to come up with a concurrent rulemaking. DOT
22 has already issued their proposed rule, HM 232, which
23 is, as proposed, is focused on using the registration
24 program as a vehicle for affecting enhancement and
25 security of radioactive materials in transport.

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1 I think the NRC should consider two
2 things. Number one, working closely with the DOT in
3 any subsequent rulemaking initiative that they may
4 undertake regarding transportation, security of
5 materials in transport. And also to consider another
6 mechanism other than using registration as the driver
7 of this. Our recommendation would be to use, to focus
8 on the type of shipment rather than the type of
9 shipper in this effort to enhance security.

10 MS. HOLAHAN: Okay. Thank you. Well,
11 that rule is in existence but it's not, I mean, what
12 it is is this rule is not part of this rule. And so,
13 there is a separate rulemaking going on that's
14 partaking in that.

15 MR. BONNER: One thing I'd like to point
16 out in the proposed rule is in Section 3 at the very
17 beginning. The NRC is looking for more information,
18 more research identifying more information sources
19 that have cost benefit information, especially health
20 and safety and exposure information. So, that's one
21 of the things that either in the meeting or in your
22 comment, if you know of additional sources that the
23 NRC should be considering, bring those forward please.
24 Okay, please.

25 MS. BAIMAN: I want to talk about the dry

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1 cask. I don't know, have you changed the model?
2 Because there's a VSC-24, this was dry cask. Are
3 these same, or multiple purpose casks are the ones
4 that are going to be shipping, now, the point is, is
5 this Yucca Mountain a done deal? Because I hope it
6 isn't. Although casks that have been, there was an
7 accident in May 28th, 1996 on Point Beach Nuclear
8 Plant in Wisconsin. Are you aware of that accident?
9 That dry cask, okay.

10 Due to the fact that when they welded the
11 shield, what happened was the zinc combined with the
12 borated water and the hydrogen, I'm sorry, I'm not,
13 it's all very chemically, they didn't have very much
14 knowledge of chemicals and metals and the combustion
15 which happened when the lid was welded. And the cask
16 almost exploded to the point that the whole lid was
17 lifted up. And then, there were other accidents with
18 these dry casks. But my point, this is a very
19 ambivalent situation, but at least if you have the
20 cask out, you can fix them. I mean, you can inspect
21 them, you can monitor them.

22 But what bothers me is if we're going to
23 ship all these high level -- nuclides to Yucca
24 Mountain and they're buried, there's nothing you can
25 do because once something is buried, you can't take it

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1 up again and inspect it and monitor it. So, I just
2 wondered whether we're choosing the right course in
3 the first place and I just wondered how safe these
4 casks are.

5 And I understand, on a train, the weight
6 is much, much heavier. Each cask has an equivalent of
7 240 Hiroshima bombs of radiation compacted inside it.
8 And on a train, it would be much, much more. And I
9 live right next to rail tracks in Oak Park where this
10 waste will be traveling and I don't really want the
11 gamma rays to come because they do emit gamma rays,
12 you do understand that? That these are mobile X-ray
13 machines.

14 I mean, you cannot prevent that. So, all
15 of us in 43 states, 20 million people will be exposed
16 to this. So, my best bet is to keep it onsite as long
17 as possible and improve the casks. And there's no
18 real solution.

19 MR. MILLER: Thank you. And I mean, I
20 think your comment reflects many comments that the NRC
21 gets from across the United States in that regard.
22 It's an interesting topic. You know, you finished
23 your statement with keep it onsite. What the NRC is
24 doing is making sure that if it's stored onsite, it's
25 stored in what we consider to be safe containers. If

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1 it's going to be shipped, we have to assure that it's
2 going to be shipped in safe containers.

3 We have no, NRC takes no position on
4 whether the fuel should be stored on site or whether
5 it should be shipped to a repository. The Congress of
6 the United States has dictated that a permanent
7 repository should be the long-term solution for
8 radioactive waste. And it's our statutory
9 responsibility at the NRC that if that's the case, to
10 assure that it's shipped safely in safe packages.

11 Other areas of the United States where we
12 hold public meetings, and it's a very geographical
13 issue, the American public is not unified on what they
14 want done. If you live in a state that has a nuclear
15 power plant, many of the people in that state want the
16 stuff shipped out of their state, so they'd be very
17 happy to see it shipped out west to a place like Yucca
18 Mountain. If you live in the State of Nevada, many of
19 the people don't want it coming there.

20 And we take no position with regard to,
21 you know, permanent storage or storage on site or
22 transportation. But again, it's our obligation to
23 assure that if either is done, that it's done safely.

24 MR. BONNER: Additional comments? And
25 then, I'd like to circle back to some of the other

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1 issues that we brought up earlier. Yes?

2 MR. GAYNOR: Paul Gaynor, the
3 Environmental Law and Policy Center of the Midwest.
4 I'm glad to hear you're acknowledging the Department
5 of Transportation's job to assure the safe shipment of
6 the spent nuclear fuel. I think that Chicago is an
7 especially appropriate location for this NRC public
8 meeting.

9 According to the Department of Energy,
10 recent final environmental impact statement on Yucca
11 Mountain, the State of Illinois will be heavily
12 impacted by transportation of spent nuclear fuel and
13 high-level radioactive waste to Yucca Mountain. In
14 addition to shipments from Illinois reactors, the
15 state would be traversed by shipments from almost all
16 of the commercial reactors east of the Mississippi
17 River, plus shipments from Department of Energy
18 facilities in New York and South Carolina.

19 During the first 24 years of operations,
20 the Department of Energy would make either 8,000 rail
21 and truck shipments or 39,000 truck shipments through
22 Illinois. Over 38 years, the Department of Energy
23 could make either 16,000 rail and truck shipments or
24 more than 69,000 truck shipments through Illinois. If
25 the Department of Energy ships mostly by rail, 68

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1 percent of all shipments to Yucca Mountain would
2 travel through the state of Illinois compared to 64
3 percent under the mostly trucks scenario.

4 The Department of Energy's proposal to
5 ship spent fuel by barge on Lake Michigan would also
6 affect Illinois, Michigan and Wisconsin. Because the
7 Kewaunee, Point Beach and Palisades reactor sites
8 lack rail access, the Department of Energy has
9 proposed shipping large rail casks by barge from these
10 sites into the ports of Milwaukee and Muskegan. After
11 being transferred to rail cars, these casks would
12 travel through Illinois by rail. The Department of
13 Energy could make up to 431 barge shipments on Lake
14 Michigan over 38 years. Nationally, the Department of
15 Energy could make more than 3,000 barge shipments into
16 15 US ports over the same period.

17 So, it's a great concern to us that there
18 be coordination between what appears to be happening
19 with regard to Yucca Mountain and this rulemaking. I
20 don't believe that it is reasonable to frankly bury
21 our heads in the sand when we know an event that might
22 be happening in the future which is going to greatly
23 increase the number of shipments, and that not be a
24 large part of this rulemaking process, and that it
25 really is the cart before the horse to approve that

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1 repository without there being serious consideration
2 with regard to the transportation of that spent
3 nuclear fuel. Thank you.

4 MR. BONNER: Please.

5 MS. MUSIKER: Debbie Musiker, Lake
6 Michigan Federation. And to give some background, the
7 Lake Michigan Federation is a not-for-profit
8 environmental group that works to restore fish and
9 wildlife habitat, conserves land and water, and
10 eliminate pollution from the watershed of the large
11 lake. And so, obviously, I come here concerned about
12 how your decisions affect the lake.

13 And I'm wondering if you've considered how
14 these proposed changes would affect the safety of
15 transporting nuclear waste or radioactive materials
16 across the lake.

17 MR. MILLER: Obviously, our considerations
18 did not focus on Lake Michigan itself. But our
19 considerations and the tests that Nancy talked about
20 earlier that we require that the packages be subjected
21 consider water transportation including ocean-going
22 vessels which you could compare. A vessel in Lake
23 Michigan is going to be different, for example, than
24 taking it down the river. It's going to be more like
25 an open water shipment, okay.

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1 So, the point is that while we did not
2 focus on Lake Michigan specifically, we did focus on
3 transportation by water with regard to the safety of
4 shipment by those means and assuring that the
5 packages, if they're going to be shipped by those
6 means, have been safely evaluated and are robust
7 enough.

8 MR. BONNER: Let me try to clarify
9 something. Nancy, were you done, Charlie?

10 MR. MILLER: Yes.

11 MR. BONNER: Okay. I think one of the
12 things you said earlier was if Yucca Mountain gets
13 approved, that the volume of traffic of transportation
14 would be considered under those legal authorities and
15 regulations, not under this rule. Am I stating that
16 accurately?

17 MS. OSGOOD: Right. I think that the
18 Yucca Mountain environmental impact statement would
19 look at possible, and I'm sure that's where you got
20 your statistics from, the number of shipments by
21 different modes. And basically, in general, I would
22 say most of our packaging standards particularly for
23 spent fuel are modal independent and they apply for
24 package approvals that, for a package to be shipped by
25 any mode.

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1 But there are certain tests and I think
2 that the deep water immersion test is a good example.
3 An additional population of packages that now would be
4 subjected to the deep water immersion test which was
5 really designed for ocean-going vessels that could
6 potentially be sunk on the continental shelf, and it's
7 equivalent to a 200-meter immersion in water. And the
8 new rule would require that, not only spent fuel
9 packages but, for example, high-level waste packages
10 or other packages of high radioactivity, you know,
11 radio-toxic materials would be tested to that
12 additional test.

13 MR. BONNER: I do want to give the
14 opportunity to come back to the exemptions values
15 piece but, please.

16 MR. GAYNOR: All right, thank you. I just
17 had a followup on the deep water immersion test. Paul
18 Gaynor, the Environmental Law and Policy Center.

19 Could you explain that test to me? Is it
20 a pressure test? What is it? How does it work?

21 MS. OSGOOD: That's a good question. It's
22 a little bit of an oddity in the regulations in that
23 it's not considered part of what we call the
24 hypothetical accident test sequence. The hypothetical
25 accident test sequence is the impact test, the 30-foot

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1 drop test, then a puncture test followed by a fire
2 test, and then an immersion test. That's the four
3 tests in the sequence.

4 This test is separate from that and it was
5 devised to consider that there are transports of spent
6 fuel in ocean-going vessels and that if there was a
7 vessel sunk, that you would want that package to have
8 the structural robustness so that it could be
9 recovered from deep water. So, the test is a special
10 test. And the way that NRC judges it and the way the
11 IAEA judges acceptability is a little bit different.
12 There are a little bit differences in that rule.

13 Our rule is a little more strict with
14 respect to our acceptance standards. But basically,
15 the idea is that a package that has spent fuel or now,
16 if our proposed rule is accepted, a new population of
17 packages that just have a high-level of radioactivity
18 would withstand a 200-meter immersion test without the
19 containment system buckling or collapsing or, you
20 know, without water and leakage.

21 MR. GAYNOR: And what about, with regard
22 to that test, what about extracting that from the
23 water?

24 MS. OSGOOD: Right. Right, that was the
25 idea.

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1 MR. GAYNOR: The weight of the --

2 MS. OSGOOD: Well, yes, that was the idea
3 of the test and that actually was why the test was
4 originally proposed many, many years ago to IAEA was
5 that there was a desire that if an ocean-going vessel
6 was sunk, that you would want the package to retain
7 sufficient structural integrity that recovery
8 operations would be practical. And that was why that
9 test was introduced into the regulations.

10 MR. GAYNOR: Thank you.

11 MS. MUSIKER: Does that test apply to all
12 packages that are to be shipped --

13 MS. OSGOOD: Now, that's a good question
14 because --

15 MR. BONNER: -- to the microphone.

16 MS. OSGOOD: Oh, sorry.

17 MR. BONNER: Does that test apply to all
18 packages?

19 MS. MUSIKER: Debbie Musiker, Lake
20 Michigan Federation. Does that test, the deep
21 immersion test, apply to all packages that would be
22 shipped across Lake Michigan?

23 MS. OSGOOD: That's a good question. You
24 know, I don't know what all radioactive materials are
25 shipped across Lake Michigan. I'm not really sure

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1 about that but usually only very large, heavy packages
2 are shipped by vessel just because there are more
3 efficient ways to ship smaller packages like regular
4 pharmaceuticals, it's not really a practical way to
5 ship them domestically by waterway. But there's no
6 restriction on that. But it's just a sense of, you
7 know, a practical judgment.

8 For right now, currently in our
9 regulations, when we approve a spent fuel package,
10 that package must be able to withstand the deep water,
11 the 200-meter immersion test. So, any package that
12 ships spent fuel, and there is a Curie level cutoff,
13 but basically, all commercial spent fuel would fall
14 within that cutoff. Any package that is approved for
15 spent fuel transport is able to withstand that test,
16 is judged against that test.

17 And the new rule would require an
18 additional set of packages to be able to withstand
19 that test. For example, plutonium packages.
20 Currently, plutonium packages don't need to be able to
21 withstand that test. If this new rule is adopted,
22 then packages that transport very large quantities of
23 plutonium would also be judged against that test. So,
24 the change in the rule adds a whole another population
25 of packages that would have to be able to withstand

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1 that test.

2 MS. MUSIKER: Okay. I just have one last
3 followup. And I guess this exchange is helpful and it
4 makes me feel even stronger that your rulemaking
5 should not be done in isolation. It should consider
6 the transportation issues associated with the approval
7 of the Yucca, the possible approval of the Yucca
8 Mountain site because there are going to be these
9 questions that are relevant to whether we want more
10 material shipped across the lake.

11 MR. BONNER: Okay. Time available, let's
12 turn back to the exemption values.

13 MS. D'ARRIGO: This is still immersion.

14 MR. BONNER: Okay.

15 MS. D'ARRIGO: When you're saying test
16 requirement, I have a couple of things and I'll say
17 them all and then you can pick how you want to deal
18 with them. One is it's not actually a physical test
19 that's required, right? And so, I wanted to
20 understand what you're meaning when you say test. And
21 then, what it applies to, you mentioned $10^5 A_2$ values.
22 I don't really want to get bogged down in details but
23 probably most of us don't really know what the A_2
24 values are now, what they're going to be in the future
25 and what that means. And if we're changing from 10^6

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1 Curie or however many it was before to 10^5 A₂ value,
2 are we actually expanding the number of containers
3 that actually have to meet the test.

4 Third has to do with the depth and the
5 time. It's my understanding that it's only required
6 for an hour, and is that realistic? Why is that hour
7 chosen when it's probably not possible that something
8 could get pulled up from the bottom of Lake Michigan
9 in an hour. And then, the last on this immersion
10 thing is there was some discussion in the rulemaking
11 documents about language that currently the NRC has
12 stricter language that doesn't allow rupture, no, that
13 doesn't allow collapse, buckling or any leakage of
14 water, and the IAEA had what could be interpreted as
15 weaker language, and NRC is apparently going to
16 redefine rupture to be more protective but look like
17 they're in compliance or I don't know. I wanted to
18 hit those four, if you could?

19 MR. BONNER: Nancy?

20 MS. OSGOOD: Okay. I'm going to go
21 through them one by one. I tried to write them down
22 but if I've missed something --

23 MS. D'ARRIGO: I can say it again.

24 MS. OSGOOD: Okay. First of all, you said
25 is this a test, and I think that's a good point, too,

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1 because if you read the regulations, they talk about
2 tests and test conditions. But if you look at what
3 the regulations allow, the regulations require the
4 cask designer or the applicant to demonstrate that a
5 package meets our performance standards. And that can
6 be done by test of a full scale specimen, it can be
7 done of a test of a prototype, or it can be component
8 test or scale model test or analysis or comparison to
9 other designs or any combination of those. The
10 regulations allow for that.

11 And it's up to an applicant, as approved
12 by NRC, to choose the types of methods that they use
13 to do that package evaluation. So, I say test, it's
14 like the 30-foot drop test, there are, an applicant
15 has a number of alternatives. They can go out and
16 physically test something, drop it from 30 feet or
17 they can do a computer analysis and subject the
18 package to the same forces that would be imposed on
19 that package by that test.

20 So, do we require somebody to go out and
21 find some place that's 200 meters deep and submerge
22 the package? No. And it really is to show a
23 structural stability of the cask under an external
24 pressure, a very high external pressure. So, for
25 spent fuel casks, that would normally be by analysis.

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1 And if it's done by analysis that time is not what I
2 would call an important factor, and I'm going to give
3 you an example.

4 When somebody designs a building, they
5 design it for a certain loading. So, a certain number
6 of people or a certain number of equipment or
7 something like that, and it's not a time dependent
8 thing. It's just you must design that to withstand
9 that force. And that's the same thing with this deep
10 water submersion test, you must show that the package
11 is capable of withstanding that external pressure on
12 that cask boundary.

13 Let's see. And the language, the language
14 in the two regulations differ in what I would call a
15 subtle way. And our regulations, our acceptance
16 criterion is stricter than the IAEA acceptance
17 standards. And I believe the proposal would retain
18 that stricter acceptance standard for the deep water
19 immersion test. So, we're a little bit stricter than
20 the IAEA in our acceptance standard although the
21 physical test, the 200-meter test, the pressure would
22 be the same.

23 MS. D'ARRIGO: You're comparing the
24 standards --

25 MS. OSGOOD: Oh, right. And that is, the

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1 idea was that this test, the 200-meter immersion test
2 that was considered to represent possible sinking of
3 a vessel with the package landing on the continental
4 shelf should apply to packages that have a degree, you
5 know, a quantity of radioactivity that could be
6 released, that could affect, you know, that could be
7 harmful to the environment and that smaller activities
8 would not be harmful and would not be taken up in,
9 say, food chain and things like that. And so that the
10 test should be focused on packages that have a higher
11 quantity of radioactivity.

12 And I might add that if you look at the
13 transportation regulations as a whole, the whole
14 structure of the regulatory framework is the less
15 hazardous material, the material that's being
16 transported, the lower the packaging standards, the
17 less requirements there are for operational controls
18 and transport. And it's a continuum, and the more
19 dangerous or the larger the radioactivity, the more
20 radio-toxic the material that's being transported, the
21 more stringent the packaging standards as well as
22 additional infrastructure as far as labeling and
23 placarding vehicles and other operational controls.

24 So, it's a continuum, and I would say that
25 this deep water immersion test then is at the end of

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1 the continuum. The very high radio-toxic materials,
2 the very, you know, the spent fuel or the 10^5 A₂ in
3 other forms besides, you know, beside special form and
4 spent fuel. So, I think of it as a continuum and this
5 certainly would be a test that you would want for the
6 most, you know, dangerous radioactive materials that
7 are shipped.

8 MR. BONNER: I have us approaching 4:00
9 o'clock. Let's get to some final comments, please.

10 MR. KRAFT: A quick followup question on
11 this particular test. The test as you've pointed out
12 is designed primarily to talk about force on the cask
13 from being submerged. I don't see it as a real
14 unreasonable situation or scenario that the cask would
15 be undamaged, however. In the sinking of a ship, a
16 lot of things can happen including boilers exploding,
17 the thing will get torn apart in any event.

18 Where I'm heading with this is, getting
19 back to your description earlier of the six-year study
20 on possibilities in terms of transport, first,
21 shouldn't that be considered as well? A partially
22 damaged, partially even ruptured cask for future
23 consideration at that depth. The deepest point of
24 Lake Michigan is about 220 meters. Lake Superior, I
25 think, is even deeper.

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1 And then, secondly, has there been an
2 analysis at those depths, at those pressures, the
3 dissemination of the radionuclides, and by what forces
4 for a ruptured, partially or completely ruptured cask.
5 I think these are things that are, not only in the
6 United States domestically on the barge issue, to be
7 considered, but you're describing international
8 transport. The Russians are really getting excited
9 about importing radioactive waste from elsewhere.
10 There have been shipments back and forth between Japan
11 and France.

12 This is something that perhaps we ought to
13 be raising some issues with the IAEA about the kinds
14 of tests and standards that ought to be in place. So,
15 did you want to respond to that, Nan? I just had a
16 quick question for a resource.

17 MS. OSGOOD: I'm not sure if there was a
18 question in there, but I guess I think it's important
19 that the US is proactive in bringing up new issues at
20 the IAEA. And I think that everybody here is
21 receptive to that.

22 MR. KRAFT: Just a quick question. A
23 colleague had asked whether NRC, or in this case
24 perhaps DOT even, maintains records on annual
25 shipments by vendors, by Curies. Where is this

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1 inventory kept? Where can the public access those
2 records as to numbers of shipments, Curie content,
3 type of vendor, that sort of thing? Is there a
4 database somewhere that handles this?

5 MR. MILLER: The NRC keeps records on all
6 spent fuel shipments because we're required to be
7 notified any time when it's been --

8 MR. KRAFT: Spent fuel, but what about
9 other --

10 MR. MILLER: You mean, on all radioactive
11 material shipments?

12 MR. KRAFT: Yes, all radioactive
13 shipments.

14 MR. MILLER: I can't speak, do you know
15 if, I don't think we keep records on all radioactive
16 shipments. Of course, as you know, some of them
17 shipments have been delegated to the authority of the
18 agreement states. And those records would not even be
19 submitted to us but we do not require notification of
20 every shipment of radioactive material because in
21 small quantities, there are hundreds of thousands of
22 shipments every year. And no, we don't. Spent fuel,
23 yes, we do.

24 MR. KRAFT: I guess that gets to an
25 unforeseen question because NRC and the industry

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1 itself has been claiming there are hundreds of
2 thousands of shipments per year and they have all been
3 done safely. But if there aren't records kept on
4 them, how can you make that claim?

5 MR. MILLER: For two reasons. Our
6 requirements, and of course, the requirements that are
7 adopted by the states under compatibility require that
8 if shipments are all, you know, if shipments have a
9 problem or something is not done safely, it's required
10 to be reported to the state and reported to the NRC.
11 And we do have records of any time that it's reported
12 to the NRC.

13 MR. KRAFT: So, you have records of
14 mishaps.

15 MR. MILLER: Yes.

16 MR. KRAFT: But you don't have records of
17 total shipments?

18 MR. MILLER: Right.

19 MR. KRAFT: It seemed like that would be
20 a useful piece of data to have, if you want to make a
21 case. So, never mind, thanks.

22 MR. BONNER: Okay. Quick comment, Fred?

23 MR. FERATE: I just wanted to say that
24 essentially there is a similar situation with respect
25 to the records or lack of records that the Department

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1 of Transportation has. We do receive, and it's a
2 regulatory requirement that we be sent reports on
3 accidents that have fairly major consequences such as
4 the necessity, for example, to close a highway for an
5 hour because you have radioactive material involved in
6 an accident, things like that.

7 However, we don't have nor have we really,
8 to directly keep track of all of the shipments of
9 radioactive material which are made except through
10 mechanisms as spot checks. Now, I do believe that the
11 Vulpe Center which is a DOT kind of research
12 institute, is working on a project actually for the
13 Nuclear Regulatory Commission. But of course, we're
14 going to take, and DOT, as much advantage of that as
15 we can to, precisely to try to do a statistical study
16 doing spot checks at points which are felt to be
17 appropriate to try to estimate the volume and types of
18 shipments of radioactive material which occur in the
19 United States.

20 MR. KRAFT: If I accept that, then I have
21 a real serious issue in terms of diversion of
22 materials. If you don't have records of shipments
23 going out, if something is missing, then quite
24 possibly you wouldn't even know it was gone, if I hear
25 you correctly.

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1 MR. FERATE: The majority of radioactive
2 material is licensed.

3 MR. KRAFT: Okay.

4 MR. FERATE: So, presumably --

5 MR. KRAFT: But you turn it over to a
6 carrier but you don't have a record or manifest of a
7 shipment that anyone keeps in a database, that
8 disappears, who knows it's gone?

9 MR. FERATE: But if it does disappear,
10 then presumably the licensing authority will learn
11 about it.

12 MR. PSTRAK: Dave, that's exactly right.

13 MR. KRAFT: How?

14 MR. PSTRAK: The licensing provision for
15 10 CFR Part 30, 40 or 50 or 70 licensees, they have
16 to, any time they transfer inventory from Point A to
17 Point B, that is a tracked system. The transportation
18 of that you make a shipment is not necessarily tracked
19 unless it's a spent fuel shipment for NRC in NRC
20 space.

21 But the actual inventory, what did you
22 send from Point A to Point B, when did you send it,
23 when was it received, was it received by an authorized
24 licensee, there's a connection there that's --

25 MR. KRAFT: Well, that was my first

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1 question and I was told that that wasn't done in all
2 cases so I'm kind of confused now.

3 MR. PSTRAK: Okay. I think part of the
4 confusion may be transportation versus licensed
5 material. There is, again, a tracking system in place
6 for all licensed facilities, but the actual
7 transportation is not necessarily tracked. Again, I'm
8 moving inventory. How am I moving it? I'm
9 transporting it. The movement from Point A to Point
10 B is a tracked system, but the actual transportation
11 of when are you shipping, when is it going to be
12 received is not done for every single shipment. For
13 spent fuel shipment, those controls are very tight.

14 MR. KRAFT: And you do have then a record
15 of what is shipped?

16 MR. PSTRAK: We do have on record of what
17 was transferred from one licensee to another licensee.

18 MR. MILLER: We, the NRC, don't
19 necessarily have that on record but we require --

20 MS. D'ARRIGO: Excuse me. Could you come
21 closer?

22 MR. MILLER: Yes, is that better?

23 MR. BONNER: Yes, that's better.

24 MR. MILLER: We, the NRC, don't
25 necessarily keep all those records. But the

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1 requirements of the license, however, are to keep
2 those records. And we use various mechanisms to be
3 able to assure that that's done. One, periodic
4 inspections, we look at the records to see if the
5 records are complete. So, they have to have a record
6 that said they transferred that material either to or
7 from where they are and did it arrive safely and who
8 currently holds that material, and if it's not
9 currently in their possession.

10 And if there is a mishap, okay, of our
11 licensees, then that is reported to the NRC. And
12 we've had instances where we've had various situations
13 where there were mishaps or the transportation was
14 confused and it was thought to be missing for a period
15 of time. When that's reported to us, well, then, we
16 engage with the other federal and state agencies to
17 try to track what actually happened to that.

18 And then, usually, over a short period of
19 time, we're able to determine where it is by tracking
20 what carrier took it, where the carrier took it. And
21 sometimes, it's just a case that it's on a federal
22 express truck or something like that, and the manifest
23 somehow got misplaced in the transfer. But ultimately
24 it's turned up. But we require the licensees to keep
25 those records. We don't require them to submit those

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1 records to the NRC. They're there for our inspection
2 by our requirements.

3 MR. BONNER: We're at ten after --

4 MR. MILLER: And that's a practical way.
5 I mean, you know, if I could just summarize your
6 comment. There were several comments today about
7 different things that we should do. What we have to
8 do is, you know, we're mandated, we're given a budget
9 by the Congress of the United States every year and we
10 have to try to use that budget to best focus on the
11 health and safety for the public. And there's many
12 things that we would like to do that we simply don't
13 have the budget to be able to do.

14 So, in instances where the NRC itself
15 can't do that and we think it's an important thing to
16 do for public health and safety, we do from a
17 practical perspective put those requirements on
18 licensees where it's reasonable and track, as I've
19 talked about, through inspection activities
20 periodically that it's being done safely.

21 MR. KRAFT: I do understand that and it
22 reflects back to the very first comment I was getting
23 back today. If you don't have a database or an
24 inventory of all shipments, then we don't know if
25 these harmonizations are economically justifiable,

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1 because there may actually be many, many, many more
2 shipments or whatever that until something goes wrong,
3 you might not have a good handle on or you don't know
4 what proportion is being done by what types of
5 industries which would give you, I think, a better
6 indication of what kind of harmonizations are more
7 important.

8 Clearly, if you're just going to talk
9 Curie content, the game is going to be high-level
10 radioactive waste and spent fuel --. I mean, that's
11 a no-brainer, in the next ten years. But in the
12 meantime, it gets back to the issue of just how much
13 of this kind of stuff do you want to engage in for
14 what proportion of your available, if you want to call
15 them shipments or just inventory out there. And
16 that's why I was asking. What's the economic driver
17 for this if there is one and that was one of the two
18 criteria for doing it in the first place.

19 MR. BONNER: Okay. I've got us at ten
20 after 4:00 and I'm going to have to start to bring
21 this session to a close. We have another evening
22 session today, but I want to reiterate something I've
23 said and others have said throughout. This is not
24 your, just your public comments are not your final
25 comments. We've got the comment forms in the packets.

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1 Please use those to expand on what you've said today
2 or add to what you've said today.

3 We've got the availability of making your
4 comments through the web and the URL's for those. So,
5 please take advantage of those. Let me turn it over
6 to Trish to conclude.

7 MS. HOLAHAN: Okay. All right. I would
8 just like to say thank you very much for all your
9 comments. We will certainly take those into
10 consideration and I would just like to welcome you to
11 provide any comments in addition in writing.

12 MR. BONNER: Thank you very much.

13 (Whereupon the meeting was adjourned at
14 4:15 p.m.)

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