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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
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4 RELEASE OF RADIOACTIVE MATERIAL WORKSHOP
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9 Palmer House Hilton
10 State Ballroom
11 17 East Monroe Street
12 Chicago, Illinois
13 Tuesday, December 7, 1999
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15 The Workshop commenced, pursuant to notice, at 8:30 a.m.
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P R O C E E D I N G S

[8:37 a.m.]

STINSON: Welcome, everyone. I am Barbara Stinson. I am with Meridian Institute. I know many of you have had the opportunity -- Mike or I have had the opportunity to talk with many of you in advance of this meeting. I want to welcome you to the fourth in a series of workshops on Control of Solid Materials sponsored by the Nuclear Regulatory Commission.

I am going to start by turning it over to Dr. Don Cool for some introductory remarks, and then we will go through some introductions.

COOL: Is that it?

STINSON: That's you.

COOL: Usually she gives me a little better hint than that. Good morning. Welcome, each of you, to Chicago. Glad that we can be up here and get together with you to continue the series of workshops that we have been holding over the last few months to explore the possibilities for the NRC in looking at the control of solid materials.

For those of you whom I have not had an opportunity to meet before, I am Donald Cool. I am the Director of the Division of the Division of Industrial and Medical Nuclear Safety with the Nuclear Regulatory Commission. While that title doesn't sound like the title you would expect the Senior Manager to have who is responsible for this particular rulemaking activity. One of the things that my organization in fact takes care of the Office of Nuclear Materials, Safety and Safeguards in the NRC is to oversee and look at all of the different rulemaking activities that apply to the various materials programs.

As many of you know, there are no national standards in the sense of a formal regulatory requirement in the Code of Federal Regulations which articulate the appropriate levels for controlling different solid materials in order to assure public health and safety. On the other hand, we all come in contact every day and have to deal with a variety of materials in our environment which do contain radioactivity either as they exist in nature, as a result of various activities that we conduct just moving the dirt around, processing activities of various industrial ventures, as well as the more specific uses to make use of material for its radioactive properties.

1 In this age of increasing environmental consciousness where we are beginning to look
2 more and more closely at the impacts of all of the things that we do, providing for public health and safety
3 is given a new meaning and a great deal of new complexity to the task of specifying how much material,
4 whether it be radioactive material or any other kinds of materials can be in the different kinds of products
5 and materials that we use in our daily lives.
6 There are currently many facilities in the United States that potentially possess valuable
7 materials that have small quantities of radioactivity that may still be associated with them. At present,
8 licensees determine whether such material can be returned to the general market by applying guidance for
9 surface activity that has been in place for many, many years. In other cases, particularly those with our
10 power reactors a criterion is basically applied as to whether or not activity can be detected.
11 The result of this has been what amounts to the continuing redefinition and continuing
12 debate over what should be considered as appropriate levels.
13 Thus, this particular process is an attempt to have a national dialogue and discussion on
14 the issues associated with controlling material in order to answer the question of whether and under what
15 conditions such material should be disposed of in an appropriately licensed facility or the circumstances
16 under which it could be safely reused or recycled within the more general marketplace.
17 In this sense I think we probably share a common purpose -- yes, I think there is
18 actually at least one -- and that is applying appropriate controls at each stage of the process to assure that
19 the risks posed by any of the activities are taken care of and the public health and safety is protected both
20 for us as individuals and for the global society and the environment.
21 As part of determining the appropriate controls, a lot of questions have been raised about
22 who are you looking at, who is this individual or who is this society, and those are some good questions and
23 there has been quite a bit of discussion on that topic in the last several meetings.
24 One in particular seems to revolve around the question of who is a worker, who is a
25 recipient, who is a consumer, who do you do the modelling for, who do you do the calculation for, how does
all of these particular sorts of systems fit together. Let me assure you first that we are going to look at all
of these individuals, and we will be having discussions a little bit later today that will talk about the

1 different kinds of modelling that gets done, how we look at some of these activities, but one of the particular
2 questions related to a worker.
3 In that sense there are two categories that we most definitely look at. The first is of
4 course a worker who may involved in a licensed facility. There are already standards in place dealing with
5 occupational exposure including training, monitoring requirements, a variety of things, and those would
6 obviously remain in place.
7 If you are in any other kind of facility and the material has been released, it really
8 doesn't matter whether you are working there, visiting there, or whether the material has gone on someplace
9 else. We will consider you as a member of the public and apply those types of criteria. Thus we will look
10 at those sorts of individuals as some of the potential exposure scenarios just as we would look at some of the
11 scenarios for an end-user, someone who receives a small quantity in some other product, people who are in
12 various foundries or activities, people who are involved in manufacturing activities and otherwise.
13 As you are probably aware, this is the fourth meeting on this subject over the last several
14 years. We had originally hoped to be up here much earlier in the fall, but for a variety of very good
15 reasons -- to allow people enough time to actually think about the issues and look at the issues paper and
16 background documents that are available -- this ends up being the last of this particular series of activities.
17 While the discussion topics that we are going to be looking at over the next day and a
18 half or so are essentially the same as those that we have used in the other workshops I am in hopes that we
19 can move these discussions forward, try and fill in some of the areas that have not gotten a whole lot of
20 attention yet, try to leverage and build upon the information that we already have available.
21 Having said that, that is not in any way an attempt to try and limit the discussions, limit
22 the particular issues that you want to bring to the table, but rather to try and make sure that we have
23 availed ourselves of the opportunity to hear from each of you on as many of the subjects as possible so that
24 we can prepare a good and complete summary of the issues and comments and viewpoints when I take the
25 results of these meetings back to my Commissioners in March of 2000.
This and the other meetings and opportunities for interaction are part of an enhanced
participatory rulemaking process to try to define the appropriate regulatory vehicle for establishing a

1 national standard. We have facilitators here whose job it is to try and keep us in line, help us think
2 through our thoughts, make sure we have captured them appropriately.
3 The meeting is being transcribed so that we can go back and remember what it is that
4 has been said and the arguments and discussions that took place. I would like to encourage you to be open
5 with the ideas, the reasons and the approaches. Let me go back and re-emphasize just for a moment that
6 word "reasons" -- there are a lot of views and opinions and positions and ideas that are out there, and one
7 of the things that will be very important to us as an NRC Staff as well as the Commissioners in considering
8 this issue is the rationale and reason behind particular positions as well as those reasons.
9 While this is certainly an opportunity to hear from, ask questions of the NRC Staff, and
10 we have a number of people who are part of the various NRC organizations, in order to be able to try and
11 do that, this is also as much or more importantly to us an opportunity for you to interact with each other
12 and try and build upon ideas and look at the ways that this problem could be moved forward.
13 Let me spend just a little moment or two to talk about a couple of things that have come
14 up in the previous meetings, try to deal with some of those early-on in the process.
15 First, there have been a series of questions that have been raised about the supporting
16 contracts, documents and other activities that the Commission Staff has been moving forward with in an
17 attempt to support these activities. In particular, there have been some questions raised about some of the
18 contractors, some of the activities of those contractors, and whether or not there are any potential conflicts of
19 interest. That is on the public record from the last meeting.
20 I was very much in hopes at that time that the results of our review would be available
21 so that we could answer those questions. That is not the case. It is being carefully examined by our Office
22 of General Counsel and our Division of Contracts and I think in the interest of all of the parties and
23 fairness in terms of conducting a fair, thorough and honest review of all of the issues that this probably isn't
24 the forum to have a great deal of additional discussion on that topic now until the legal details have been
25 sorted out.
There has also been considerable interest about the specific activities in the state of
Tennessee, some specific licensing actions with Manufacturing Sciences Corporation, and particular recycle

1 issues on particular kinds of materials.

2 Many of you may be aware that Congressmen Dingell and Markey and Klink provided to
3 the Commission a rather long list of questions and issues looking at jurisdiction as well as technical issues in
4 this particular arena. The Commission Staff has taken a very hard look at that and is in the process of
5 preparing a detailed response for the Congressmen which will be provided later this month. Once that has
6 been provided to Congress, that will also be publicly available and you will have an opportunity to see
7 that.

8 Finally, there have been questions raised for very obvious and good reasons about, well,
9 this is very nice -- you have had four public meetings, we have all had a chance to sit around the table
10 and talk a little bit. That's great. Now what?

11 The Staff continues to plan to move forward as the Commission has asked us to do and
12 bring them a summary of the information and options on how to proceed to the Commission in March of
13 2000. That is just a little over three months from now.

14 We plan to try and provide that paper to them and to develop that paper in such a way
15 that you will have an opportunity to continue to interact with us. We can talk about some more of the
16 details a little bit later on. Those of you not particularly familiar with Commission papers, the actual
17 paper tends to be very short and there's lots and lots of attachments which contain all of the details. A lot
18 of that drafting work is going to be needed to be done and examined by the working group. We are
19 looking at having some of those working group meetings be open to the public and drafted materials
20 available to look at so that you have an opportunity to continue to interact with us and look at the
21 documents as we are developing them in preparation for the Commission.

22 What is the working group? That's probably a fair question as well. For a project of
23 this size I have a number of individuals on the Staff, most of whom are here today, representing various
24 technical disciplines. They get together to prepare these documents, review the materials, draft up the
25 individual pieces that would need to be written, perform technical analyses, oversee contracts -- those various
activities.

Frank Cardile of my staff leads that working group. It includes a number of other

1 individuals.

2 We also have a management group of folks including individuals from the Agreement

3 States. Pleased to see Steve Collins here, who has been working with us on that to provide some immediate

4 feedback to them when they have questions that are raised and some management considerations before we

5 actually finally send the documents to the senior management of the agency and the Commission.

6 All this having been said, we continue to welcome your interest and we look forward to

7 your participation.

8 There have been a variety of background documents that have been made available now

9 for a number of months including an issues paper which can serve as a starting point for our discussions

10 today. That issues paper doesn't represent the end of all the options and we have heard lots of variations

11 and additions to that already over the last three meetings, so I would encourage you once again to feel free

12 to elaborate, provide additional options.

13 Part of what I hope we will be able to do over the next day and a half is to put

14 together proposals -- I am not going to say a singular one because I am not at all convinced there is a

15 singular one -- that you believe could work to move this issue forward, either for a particular kind of

16 material or in general for all types of materials.

17 As I mentioned a little bit earlier, Barbara Stinson and Mike Lesnick from the Meridian

18 Institute will be serving as our facilitators for the next two days to help us achieve a successful dialogue on

19 all of these topics.

20 I think I have probably talked about long enough. You have probably already gotten

21 tired of hearing from me. Let me again welcome you. I look forward to these discussions and activities and

22 I am going to turn it back over to Barbara for the introductions.

23 STINSON: Thank you, Don, and we will have an opportunity for anyone who has

24 comments or questions for Don as we move into the opening discussions this morning.

25 Let me just say a few introductory remarks on the procedural side of my own. Again, I

am Barbara Stinson. This is Mike Lesnick on my right. Sarah Walen is in the corner and you have

probably heard the name Tutti Tischler more than about any other name from Meridian Institute. She is

1 our administrative support for this project.

2 Meridian is a nonprofit -- that is your team, your Meridian team -- and we are a

3 nonprofit mediation and facilitation organization.

4 As Don mentioned, we have been asked to assist in convening this process, trying to

5 identify relevant stakeholders, bring folks to the table for full and balanced discussion of a full array of

6 issues and concerns and to explore ideas for further development by the NRC Staff as they develop the Staff

7 paper that Don mentioned -- so we are here to support you in whatever way you need to make this an

8 effective dialogue and discussion, so don't hesitate to ask us about anything.

9 What I would like to do is take a round of introductions at the table here and then

10 around the audience, and then we will walk through groundrules and review the agenda. Before we start

11 those introductions though, let me just ask Lea Foushee -- who else are we missing? -- Cliff Honnicker --

12 neither of you are in the audience, are you? Lea or Cliff?

13 Why don't we take a round of introductions and give -- many of you may know each

14 other, but just mention your name, the position that you serve in your organization and then your affiliation

15 and we will just go around the table and then take a quick round of introductions in the audience as well.

16 This will be the first time I will say something you will hear from me endlessly in this

17 discussion, which is please speak directly into the microphone so that the transcript accurately records all

18 that you have to say. We will have to do that for every comment made.

19 LESNICK: Good morning. I am Mike Lesnick with the Meridian Institute.

20 LIPTON: I am William Lipton. I am Principal Engineer with the Radiation Protection

21 Department at the Fermi 2 Nuclear Power Plant.

22 WILK: My name is Charles Wilk. I am at the Portland Cement Association. I am

23 responsible for promoting the use of cement for waste management activities.

24 STINSON: Great. That is helpful, just to hear that little bit of how does what you do in

25 your life relate to what we are doing here -- just in a few words.

GENOA: Good morning. Paul Genoa. I represent the Nuclear Energy Institute. I am a Senior Project Manager at the Institute responsible for public radiation issues such as this. The Institute

1 represents users of nuclear technology worldwide in 20 nations, over 280 companies, and includes every
2 nuclear power plant in the United States -- clearly the clearance of material is important to our industry.
3 STINSON: Thank you.
4 HERNANDEZ: Good morning. My name is Peter Hernandez. I am Vice President,
5 Employee Relations, for American Iron & Steel Institute, which represents 38 domestic steel producers that
6 account for two-thirds of the U.S. carbon steel production and employ about 125,000 in their operations.
7 Our members would be the primary customers for the scrap material that would be
8 released from the various sites.
9 STINSON: Thank you. Mike?
10 MATTIA: Mike Mattia, Institute of Scrap Recyling Industries. I am the Director of
11 Risk Management and ISRI is the trade association that internationally represents approximately 1400
12 companies who process, broker or consume scrap material.
13 CONKLIN: I am Craig Conklin, with the Environmental Protection Agency. I am the
14 Director of the Center for Radiological Emergency Preparedness, Prevention and Response. The EPA has
15 several requirements or several regulations or statutes that we operate under, most importantly the Atomic
16 Energy Act with regard to radiation and we are responsible for issuing generally applicable environmental
17 regulations dealing with the radioactive materials and their release.
18 I am over seeing the international radiation source management effort within EPA that is
19 working with the State Department and other agencies -- Gwendolyn Bauer is part of that group -- and I
20 am also working with the Orphan Source Program initiative that we have with the CRCPD.
21 STINSON: Tom?
22 CIVIC: My name is Tom Civic. I am Manager of Safety and Industrial Hygiene for
23 Bethlehem Steel Corporation. I serve as the Chairman for the Radiation Task Group for the American
24 Iron & Steel Institute and today I am representing that task group.
25 LaMASTRA: Good morning. Tony LaMastra. I am a Radiation Protection Consultant
and I am serving as a consultant to the American Iron & Steel Institute.
CARDWELL: Cindy Cardwell. I am with the State of Texas Bureau of Radiation

1 Control and Deputy Director of Standards there. I am here today representing not only the State of Texas
2 but the Organization of Agreement States.
3 COLLINS: I am Steve Collins. I am with the Illinois Department of Nuclear Safety and
4 I am basically here to represent the management concerns of that organization and to make sure we keep up
5 with the issues that are involved in this particular subject area.
6 I am also here representing the Resource Recovery and Radioactivity Committee,
7 hereinafter referred to as E23, of the Conference of Radiation Control Program Directors, hereinafter
8 referred to as CRCPD --
9 [Laughter.]
10 COLLINS: And I will try to make clear when I make remarks, if I do, which hat I am
11 wearing at the time.
12 STINSON: Good. That will be helpful. Susan.
13 LANDAHL: Good morning. I am Susan Landahl. I am the Corporate Radiation
14 Protection Manager for Commonwealth Edison and my background is that I have a Bachelor's and a
15 Master's Degree in Nuclear Engineering from MIT. I am a certified Health Physicist and I have over 15
16 years of experience in nuclear power, ten of which were directly working at a nuclear power site, so I have
17 a lot of experience in the practical aspects of what it takes to release material.
18 Also, importantly, I am a wife and mother of a beautiful little girl.
19 STINSON: We're going to have to share the mikes like this throughout the day.
20 TURNER: Hi, I'm Jim Turner. I'm with Ameristeel Corporation. I'm Director of
21 Environmental Affairs. I'm here on behalf of or in conjunction with the Steel Manufacturers Association
22 which represents the minimill steel industry in the United States and North America.
23 HORTON: Hi, my name is David Horton. I work as a civilian in the Army in the
24 Rad Waste Office. I'm the Health Physicist, Project Manager.
25 KOENIG: Bill Koenig, Radiation Protection Officer for ISPAT Inland, Incorporated, as
steel manufacturer in Indiana. I work out of the Health and Safety Department.
THICKMAN: Good morning. I'm Stu Thickman from Northeast Utilities. I work in the

1 Licensing Group in Millstone Unit I, which is a unit that we are in the process of decommissioning.

2 ERICKSON: Good morning. I'm Kristin Erickson. I'm a Radiation Safety Officer at

3 Michigan State University, and I am probably the only one representing a bunch of academic and medical

4 RSOs where we have, for example, 2,000 people badged and 500 faculty and labs and big accelerators and

5 lots of things going on that are across the board in the industry, and also extremely difficult challenges with

6 our public labs and our turnover of people.

7 So this affects our program right across the board.

8 CROOKS: Good morning. I'm Kelly Crooks. I also work in the Army's Rad Waste

9 Disposal Office. We're located at the Rock Island Arsenal in Rock Island, Illinois.

10 We manage the disposal of the Army's rad waste, and we have generators in every state,

11 and virtually every continent, so we have a worldwide program.

12 LILLY: My name is Judd Lilly, and I'm with the United States Department of Energy.

13 I'm out of the headquarters office. I'm the staff person responsible for decommissioning work in the state of

14 Tennessee, specifically the Oak Ridge Reservation.

15 SZWED: My name is Dan Szwed. I'm Director of Environmental Affairs with AK Steel

16 Corporation, here representing the specialty steel industry of North America, the Metals Industry Recycling

17 Coalition, which consists of specialty steel producers, steel producers, nickel, copper, brass, and many other

18 metals producers.

19 We are potential customers for scrap metals and alloys that may come from these facilities.

20 DEVGUN: Good morning. My name is Jas Dergun. I'm representing Consumers Energy,

21 and I'm involved as a Senior Project Engineer and a Project Manager in the decommissioning team at Big

22 Rock Point, a restoration project.

23 I also am the Chairman of the American Nuclear Society's Special Committee on Cleanup

24 Standards.

25 ROGERS: Good morning. My name is Alice Rogers. I'm with the Texas Natural

Resources Conservation Commission, which is the Texas Agency responsible for air, water, and waste

management.

1 I also serve as Secretary-elect of the Organization of Agreement States, and also as a
2 Committee member on the CRCPD's E-5 Committee on Low Level Radioactive Waste Management.
3 HUFFERT: I'm Tony Huffert. I'm the Health Physicist in the Division of Waste
4 Management for NRC. I'm a member of the Working Group and I'm working on the technical basis
5 development for this initiative.
6 CARDILE: Good morning. I'm Frank Cardile. As Done mentioned, I'm part of the
7 Working Group team that's working on the technical basis and also developing the Commission paper.
8 HOLAHAN: Good morning. I'm Trish Holahan. I'm a Section Leader in the Division
9 of Industrial and Medical Nuclear Safety, responsible for this activity. Thank you.
10 STINSON: Dan, we're just taking a round of introductions, if you don't mind, just your
11 name and affiliation into the microphone.
12 GUTTMAN: Dan Guttman, with PACE.
13 GNUGNOLI: Georgio Gnugnoli, USNRC.
14 STINSON: Okay, that's the round of introductions from the table. These individuals
15 preregistered for this process, and that was -- we didn't have a sense of who else would be in the audience.
16 They have a variety of expertise, obviously, but so do you all. So we're going to structure
17 the agenda to give you all an opportunity to participate in the discussion as well, and I'll describe that in a
18 moment.
19 Maybe rather that using the microphone, we'll just ask all of you to shout our your name
20 and affiliation, and we'll start with Sarah.
21 STINSON: Okay, great, thanks. There are a couple of things. Let me just walk through
22 a few basic ground rules and describe the format for this meeting:
23 Many of you have asked questions about it, and the format has evolved over the course of
24 the four meetings.
25 For this discussion, what we hope to do is move through a series of topics in a different
way than we have in the past. We're going to talk material-by-material, largely. We'll have some
introductory comments from the NRC and walk through some basic background.

1 But the majority of the meeting will be spent, hopefully focusing on the activities
2 involved with specific materials for different licensees, and what the implications of control of those materials
3 might be, and the alternatives for control.
4 So, that's a little bit different focus than we've had, and that's an attempt to get a little
5 bit more in-depth discussion on each of these materials.
6 It will be largely a roundtable discussion, so we'll be focusing on the comments within this
7 group. But I think it would be helpful, after each section of the agenda, to offer the audience an
8 opportunity to make comments as well.
9 The way that we will recognize each of you as you'd like to speak is by using your name
10 cards, flipping them on the side, and what we'll do is, for a particular topic, we'll basically take the cards in
11 the order they go up, but we'll also try to focus the discussion on particular topics.
12 So if you have a comment to make that's very relevant to something you've just heard, if
13 you can be brief, we'll insert people into those comments in order to have, like I say, a more focused,
14 in-depth discussion.
15 So that's the way we'll run the discussion at the table. At the close of the session, we'll
16 turn to the audience and then go on to the next topic. We'll see how that works.
17 Let me just say a little bit about ground rules: The primary ground rule is going to be
18 speak into the microphone. And hopefully, if any of you can't hear in the back at any point during the
19 meeting, let us know, and that will be probably an indication it's not getting on the transcript either.
20 The primary thing that we ask you to observe as a ground rule for this discussion is to
21 respect the fact that there are going to be significant differences of viewpoint around this table and in the
22 audience. And by respecting that, we ask you to, a) try to avoid any personal attacks against the views
23 that you hear; to try to respect each other's time.
24 That means make your comments brief and to the point. And to take any specific
25 arguments that you may have with individuals to the side of the room during breaks, and not to act them
out here at the table.
We're going to try to stay very focused on the substance and the issues, and try to

1 understand what some of the reasons, as I think Don referred to, rationale and reasons are behind some of
2 the positions that people are assuming on these various issues.
3 We will ask you to use your cards and we'll ask that you give us license, Mike and I,
4 some license in directing this discussion. As I say, we're going to try to make sure that it's a balanced
5 discussion and that the variety of the views around the table do get an opportunity to come forward.
6 So, you may see us call on someone that you hadn't thought was in the queue for the
7 discussion, when, in fact, maybe we've heard from three steel representatives or three states representatives in
8 a row and we'd like to insert somebody else to get a mix of discussion going for the transcript and for the
9 health of the discussion, so please give us that license.
10 If there aren't any questions about any of that -- and I will refer to ground rules again
11 as necessary.
12 Every time you make a comment, you're going to have to mention your name and
13 affiliation, or at least your name so that it's accurately recorded in the transcript.
14 And if you haven't had the blessing of enjoying one of these transcripts, you, too, can
15 have your own stack of probably six to seven inches of paper at the close of this meeting, verbatim
16 transcript of everything that was said.
17 It makes for some interesting reading. You'll want to see how you really sound, how you
18 come across.
19 Let's just walk through the agenda quickly, and we'll give you a sense of how we hope to
20 conduct this discussion. Of course, we look forward to your comments as we go through.
21 What we've done is, if you've seen past agendas, we've compressed a lot of the introductory
22 material that was in eight sessions into two sessions, which we will move through rather quickly this
23 morning, basically.
24 So the Session 1 is now the first -- what as formerly the first two sessions, compressed into
25 an introductory material on how the issues that we're discussing fit into the overall regulatory picture.
We'll take a break this morning, and following some comments on all those introductory
remarks, largely from Trish Holahan, we'll take a break and then move on to Session 2, where we'll talk

1 about some of the technical bases for discussion.

2 Again, there will be opportunity for comment, et cetera. I'm thinking that at the close of

3 each session, we will spend at least five minutes just seeing if there are any audience comments on the topics

4 of that session.

5 We'll break for lunch, and lunch is on your own today. Of course, the beverages during

6 our breaks are complimentary, so help yourself. They come with the room.

7 During lunch, we'll take a break and send you off on your own. There are a number of

8 good restaurants in the area, and we can point you in various directions.

9 At 1:00 we'll come back and just see if there are any closing comments on the studies

10 that are currently underway or contemplated for this decisionmaking process, and at 2:00 talk about

11 alternatives on control of solid materials.

12 This is the point at which we will turn to the table of alternatives that you have been

13 sent in advance of this meeting, hopefully from Meridian, or have picked up off the table. Let me know if

14 you need a copy of it.

15 Just take a look at this table for a moment, and I'll come back and refer to it.

16 At 2:00 we'll have a round of presentations, brief presentations on the case-by-case

17 approach and some other alternatives that are contemplated.

18 We'll talk about how materials, control of materials can be assured under various

19 alternatives, and then I think what we'd like to do is brainstorm the material part of Column 1.

20 In terms of this table, the first column lists a range of materials that either are currently

21 under study, have been designated to be studied by the Commission to the NRC Staff, and are the subject of

22 current NUREG activity, or have been suggested during the course of the last three meetings.

23 This is not a comprehensive list, so the first thing we need to do is think about a

24 comprehensive list for Column 1. So we'll do that before our break at 3:00 today.

25 And then we'll come back and talk a little bit about the current methods of control for

each of the materials. What we'd like to ask the folks at the table is to please bring your real-world

experience forward as to what you see going on currently with the control of these various materials where

1 you have that experience.

2 We're going to have more experience for some materials than others, but again to try to

3 push the discussion to a little bit more depth.

4 By 4:00 today, we will turn to discussion of environmental -- well, alternatives for

5 control and environmental and cost impacts.

6 What I expect us to do is to focus first on aluminum. We haven't talked much about

7 aluminum in past meetings, past workshops, and we have talked a lot about ferrous metals, iron and steel.

8 So we'll draw on some of the knowledge that we have from that material, but try to focus on aluminum if

9 some of you have some experience to lend on that.

10 We'll move across the table for aluminum and talk about the potential alternatives for

11 control, the health and environmental impacts, and then the cost impacts. What kinds of studies are needed

12 to really understand what further control of those materials, other than the case-by-case method, would mean?

13 And then we'll talk about possible institutional and other kinds of controls to assure

14 control over the long term under those alternatives.

15 So, just to reiterate, our plan is at 2:00 to hear some presentations, then to bring -- and

16 have a little bit of discussion of the information on those materials in that presentation, and then secondly

17 to brainstorm the material and make sure we've got a comprehensive list, talk through the current methods

18 of control, and by 4:00 focus on aluminum for the other five columns of the matrix, of the table. Does that

19 make sense?

20 And then we'll start -- we'll see how that goes and evaluate that discussion format at the

21 end of the day, and then start on Wednesday, tomorrow, with copper, concrete, soil, et cetera, and then move

22 through some fairly quick discussions on each of those materials.

23 We may end up compressing some of these, and it may make sense to talk about materials

24 for reuse and trash at the same time, or something like that.

25 Take each of these in turn, and final comments, probably more by 2:30. I understand

some folks, several critical participants need to leave by 3:00, so be forewarned that we're going to end our

meeting tomorrow at least by 3:00, and we'll see how the discussion goes.

1 If it looks like it's going to be even earlier than that, we'll let you know. So that's
2 the plan for the discussion. I'd like to give anybody an opportunity to give us some input on the way that
3 we've structured the agenda and the table of alternatives.
4 GENOA: Paul Genoa with NEI. Just a comment.
5 STINSON: A little bit closer, I'm sorry.
6 GENOA: Just the comment that we have to be careful when we break down these
7 material by material. I mean I think it is appropriate, but the real world, we have to deal with items. A
8 welder contains copper wrappings, contains insulation, is made out of metal, has, you know, rubber leads.
9 You know, that is the real world. A computer screen, a terminal, you know, it is a whole composite of
10 materials. You don't separate them out and survey one at a time. So in the real world most materials are
11 complex mixtures of these things. And so I hope that we would spend a fair amount of time talking about
12 the release of reasonable materials or trash because they tend to more represent the real world.
13 STINSON: That's good. That's fine. Again, it is not meant to be artificial, it is meant
14 to try to get us to focus on some of these other materials and maybe it makes sense to talk about some
15 combinations of them as well.
16 Any other comments on the agenda? Okay. Yes, Dan.
17 GUTTMAN: Dan Guttman. I am disturbed there doesn't seem to be on a feedback on a
18 lot of the basic questions asked last session, particularly there is nothing here about the institutional
19 competence to do what is supposed to be done. At the last session there was a considerable presentation
20 about the evidence. We are not looking a question of the laws of nature, that is, is radiation or safe or not,
21 but the laws of human beings.
22 STINSON: And, unfortunately, Dan, we had -- I wanted to mention this to you directly.
23 We had an introductory, a set of fairly comprehensive introductory remarks from Don Cool and he did
24 address a number of those issues. So at the break, perhaps you can get a look.
25 GUTTMAN: I am not talking about conflict of interest. I am talking --
STINSON: No, I know. But there are a range of issues that he responded to that you
raised.

1 STINSON: Well, I would just like to know whether he can tell us about the evidence
2 that the AEC, the agency's predecessor, historically sponsored the release of materials that is already floating
3 around, nickel. And whether we are going to talk about the aluminum experience that is ongoing now at
4 BNFL. And, also, the whole essential prejudgment question, which appears to have been locked in now by
5 the SAIC contract. This is plainly a prejudged proceeding by contract.
6 And, also, finally, as a basic piece of information, we still don't even have the contract.
7 As far as I can tell, either the NRC has destroyed, or lost, or will not provide to the public the basic
8 contract document underlying the regulatory proceeding here. The statement of work for the 1992 SAIC
9 contract, you all know, because we have told the NRC General Counsel's Office for some time, is not a
10 matter of public record, and I am wondering why that is being kept secret.
11 The basic point here is it sounds like a lot of the people that have got questions are
12 talking to people who are appearing to be receptive, but are not providing any responsive information.
13 That is not acceptable in a public dialogue.
14 STINSON: And I said I think that a number of those issues, Dan, were specifically
15 addressed in the introductory comments. So we are going to ask you to hold, we are not going to revisit
16 that.
17 GUTTMAN: Okay. Fine.
18 STINSON: We are going to ask you to hold those questions until the break. You and
19 Don can talk.
20 GUTTMAN: Pursuant to the guidelines, it sounds passionate, but it is a friendly --
21 STINSON: No, I am saying you and Don can talk.
22 GUTTMAN: Thank you.
23 STINSON: You and Don can talk at the break and then if you have further questions,
24 you can raise them here.
25 Okay. Let's start then with our Session Number 1 presentation, and we are going to ask
you to be patient with this first session. It is fairly lengthy, but, again, we are trying to compress the
information together so we can get into the discussion. Trish.

1 HOLAHAN: Thank you, Barbara. Good morning, again. As I mentioned, I am Trish
2 Holahan with the NRC. I would like to, in particular for those of you that did not have the opportunity
3 of being at some of the earlier meetings, to walk through somewhat quickly as to why are we here today
4 and how does what we are trying to do today fit into the overall picture. So I am going to walk through
5 some slides. I will pause part way through to see if there are some questions of clarification before I
6 continue with the last. But, as Barbara mentioned, if you will please bear with me, I will try and be
7 relatively brief, so we can at least then get into the dialogue.
8 The basic premise for why we are here is it is to fulfill NRC's Congressional mandate and
9 responsibility to protect the public health and safety, and the environment. And I would like to start off
10 talking a little bit about why we are here. You have heard some general statements from Don Cool, and I
11 would like to build upon those.
12 As we know, there are solid materials currently at licensed facilities that will need some
13 form of disposition. These materials range from large amounts of radioactivity to no activity at all. All of
14 this material will ultimately need to be disposed of by some safe means. Therefore, the principal question
15 that we are asking is, how should these materials be handled? What should be done with them, in
16 particular, that material with small amounts of radioactivity?
17 Should it all be buried in a licensed low level waste disposal site? Or, alternatively, is
18 there a safe way to reuse or recycle some or all of these materials if the radioactivity levels are low enough?
19 Although there are currently standards for disposing of material with large amounts of radioactivity at
20 licensed burial sites, there are currently no generally applicable NRC regulations for control of most of these
21 materials with small amounts. We know that there is a growing interest in the country today in terms of
22 recycle or reuse for those materials, where possible, to conserve resources.
23 Licenses are still -- although there are no regulations specifically for this material,
24 licensees are still coming in and seeking to release materials when they are obsolete or when they are no
25 longer useful, or when the facility is being shut down or decommissioned.
In the absence of a standard, NRC has developed guidance as to acceptable levels that are
used by both the NRC and licensees. So, currently, decisions are being made on a case by case base.

1 Although the guidance is considered safe in and of itself, the lack of specific criteria causes inconsistent
2 release levels and, therefore, that results in non-uniform levels of protection. You will hear more about the
3 current case by case and the existing guidance that is out there is not based on doses, but was developed
4 based on detectability.
5 In order to address the limitations of this case by case approach, NRC wants to consider
6 all these issues in an open, public forum and that will include a full analysis of all the health and
7 environmental impacts involved with the situation, as well as evaluation of the related economic aspects.
8 Let me go on to the next slide. Why NRC? Not all the radioactive material is under
9 NRC jurisdiction, but only that material that is related to fuel cycle or that is made radioactive in a
10 reactor. The states regulate that material that is naturally occurring or accelerator produced.
11 What is NRC's role and authority in setting these standards? The NRC authority and
12 responsibilities was established in the Atomic Energy Act of 1954 and that was then amended in 1975.
13 And NRC issues regulations which provide for the protection of public health and safety from the use of
14 radioactive material by its licensees. NRC regulates and inspects the safe use of radioactive material by its
15 licensees to ensure that it is being used in a manner that is adequate to protect public health and safety.
16 How does NRC interact -- what is NRC's role in relation to where EPA, as Craig
17 Conklin mentioned, what EPA does, a little bit earlier, is that EPA does not regulate licensees directly, but
18 EPA sets generally applicable environmental standards that NRC implements for radioactive material under
19 the Atomic Energy Act. However, EPA is not currently considering rulemaking in this area, and in the
20 absence of an EPA standard, NRC has the authority to set radiation protection standards for its licensees in
21 this area.
22 One of the questions that is being posed is, has NRC made any decisions to date? Well,
23 with respect to that question, in terms of what we are going to do, the answer is no. However, there has
24 been some direction and some guidance from the Commission over the last 18 months. In June of 1998, the
25 Commission issued direction to consider rulemaking to establish a dose-based standard for clearance of
materials and equipment with residual radioactivity and provide for enhanced public participation.
Subsequently, in June of 1999, the Commission approved publication of an issues paper

1 that includes several alternative courses of action, which we will hear more about a little bit later, and
2 announced a scoping process in the Federal Register for public comment.
3 As part of that, the NRC is holding these public meetings, such as this one today, to
4 solicit early input from a variety of interested parties.
5 In September of 1999, the Commission directed the staff again to proceed with the
6 enhanced public process and hold public meetings to solicit early input from the interested parties in a
7 collective forum and come back to the Commission in March of 2000 on the results of the public meetings,
8 to include all the stakeholder reactions and concerns, the status of the ongoing technical analyses, and
9 recommendations on whether to proceed with rulemaking or other staff actions.
10 In addition, in that direction, the Commission said that if a decision is made to proceed
11 with rulemaking, that the staff will then hold additional informational stakeholder meetings on a
12 preliminary version of a Generic Environmental Impact Statement.
13 The one other question that we have raised, is NUREG-1640 a standard, a draft
14 NUREG-1640? And you will hear more about that later from Bob Meck, but I just wanted to pointed out
15 at this point that it is not a standard, but it is calculational tool and it is out as a draft currently for
16 public comment. And, as I say, you will hear more about that in more detail later.
17 What process are we going to be using for this decision-making? Well, let me compare a
18 little bit first with the steps in a typical rulemaking process. Typically, following -- we seek early and
19 substantive input from the agreement states by development of what we call a rulemaking plan, which sort of
20 lays out different options as to how one might proceed. Following Commission approval of the rulemaking
21 plan, we would develop a proposed rule, and as part of that proposed rule, we would look at the
22 environmental aspects in accordance with the National Environmental Policy Act, or NEPA, and also look
23 at cost benefits in accordance with a Presidential direction -- Presidential Order.
24 Following development of these documents, we would publish the proposed rule, the
25 environment analysis, or Environmental Impact Statement and the regulatory analysis, all for comment, and
then consider all the public comments, and we would prepare a final rule.
How does that differ in terms of what we are doing now for an enhanced present? What

1 additional steps for early and continuing input are we looking at? Well, as I mentioned earlier, we
2 published the issues paper in a Federal Register Notice. We have also put it up on the NRC web site with
3 the intention of providing an opportunity for dialogue on all the alternatives. We are holding these
4 facilitated public meetings to discuss that paper and to allow opportunity to share ideas and concerns
5 amongst all the interested parties.
6 We are going to be placing all the follow-on documents and we have been with the
7 transcripts, they are currently up on the web site. Any other documents associated with what we are doing
8 are all on the web site, and we have a web page for control of solid materials. And if you are interested, I
9 don't know if the web site is out there, but we will make sure that you have the web site address for that.
10 Also, there is public comment capability by e-mail, through the web posting. We now
11 have a dedicated list server for this effort and there are, again, specific instruments if you want to sign up
12 for the list server. And, again, that allows an opportunity for dialogue.
13 Also, we are going to be holding periodic open working group meetings. As Don Cool
14 already mentioned, from here we are going to be looking at summarizing and analyzing the public comments
15 and preparing the Commission paper that is due to the Commission in March. So some of the working
16 group meetings between now and the time that the paper will be going forward will be open to the public
17 and given opportunity to hear how the comments are being summarized and analyzed, and give additional
18 input, opportunity for input.
19 Also, there will be a Commission briefing in March of 2000 and that Commission
20 briefing is open to the public and, again, will allow an opportunity for individuals to provide input. One
21 of the things that we are doing is seeking other ways, if there are other suggestions that people may have to
22 enhance public input. We are open to hearing other possibilities.
23 At this point, I think I would like to just make sure, before I continue on, is if there is
24 any questions of clarification. You know, as I say, we would like to have more discussion later, but at this
25 point I am just looking for clarification.
STINSON: Yes. So, specifically, any questions or not getting into a lot of comments and
registering of your own views yet, but questions of clarification on either the history or the process that is

1 envisioned from this point forward.

2 Tony, and then Dan and Charles.

3 LAMASTRA: Tony Lamastra, AISI. Trish, is the NRC going to, or Meridian or

4 someone, make some of these public, like the Commissioners' briefing or some of the workshop dates known

5 ahead of time, as opposed to just putting it in the Federal Register? Because a lot of times when we finally

6 get the Federal Register, it is like one or two days before the meeting. Have you given any thought to how

7 you would publicize that perhaps by notifying the people that have been involved in these meetings?

8 HOLAHAN: Yeah, I think one of the ways that we could do that is through the list

9 server that we have got up. We could put on that, plus it would go onto the NRC's public meeting web

10 site to notice public meetings, that is 10 days before the meeting. And so as we are proceeding with those

11 specific meetings, again, the Commission briefings, once the date for that is set, that would also be put up on

12 the Commission web page.

13 Frank, did you have something?

14 CARDILE: I would only add that, also, and we will put the exact address, we have tried

15 to simplify the web site address, but we will try to keep that web site address, the one specifically related to

16 this effort, up to date and well ahead on when any actual activities will take place. We will put that

17 address up on the screen at the break.

18 STINSON: What we are hearing so far is that this web site is an improvement over

19 NRC's general web site, and it is a little quicker access, a little more accessible. But, generally, the

20 approach that is contemplated is to get information out through the list server so people can access it easily.

21 Now, you may want to make a recommendation of some specific milestones in which, you

22 know, a specific group of people, say, the database for this group, be notified of particular meetings. You

23 know, assuming it doesn't get into orders of, you know, 20-30 meetings that have to noticed, you know,

24 maybe NRC would entertain that kind of idea.

25 Dan.

GUTTMAN: Yeah. Following up on this transparency question.

STINSON: Dan, you are going to have to mention your name.

1 GUTTMAN: Dan Guttman from PACE, with PACE, on the transparency question, Trish.
2 First, as we understand --
3 STINSON: A little bit closer. I'm sorry.
4 GUTTMAN: As we understand it -- is that better?
5 STINSON: Yes.
6 GUTTMAN: God, it sounds like I am --
7 STINSON: I know. You have to echo or it is not working.
8 GUTTMAN: -- involved in some indecent action with this microphone.
9 GUTTMAN: As we understand it, in fact, the regulatory options paper and the issues
10 paper here were not prepared by you folks, but pursuant to the contract with SAIC, were prepared by a
11 private contractor, if they complied with their contract, and I assume that's the case.
12 Two, you mentioned last time that you had not prejudged this issue, but as you know, it
13 now turns out that the August, 1999, renewal of the SAIC contract locks in the June 30th staff
14 memorandum, and I want to know if you've changed that and when you've changed it.
15 Three, as you know, in October, you received a letter, the NRC did, from a number of
16 Congressmen, PACE, and the Natural Resources Defense Council wrote to the Tennessee Authority about
17 whether the ongoing recycling, your major, current recycling in Oak Ridge has any lawful basis.
18 This was two months ago, nine months after the license. As far as we know, there is no
19 response.
20 So in terms of the process, the basic question is, when are we going to get some
21 transparency as to what is -- who is doing the basic work here, and whether, in fact, the Commission has the
22 ability as a matter of competence, to construe its regulations so that we should know whether we've got and
23 what the playing field is.
24 CARDILE: Just for a point of clarification, I prepared the issues paper that you see in
25 the office, assisted by the Working Group members that you see here today, and then reviewed by the
Steering Group members.
GUTTMAN: Well, then, you have false claim because SAIC was paid, apparently, by

1 your contract office to prepare it, and I think that you should -- and I would like to ask that that be
2 added to the General Counsel's investigation, why they were contractually hired and presumably paid to do
3 it if they didn't do it.
4 STINSON: We may be talking about two different items here.
5 GUTTMAN: I'm talking about the issues paper underlying this whole NUREG business.
6 STINSON: Okay, Don, do you have some comments?
7 COOL: I think I have a couple points of quick clarification that are probably important.
8 Dan, I'd like to suggest we get together at the first break.
9 GUTTMAN: I'd be happy to.
10 COOL: There are maybe a couple things that we can sort out where we don't need to
11 involve a lot of other folks' time.
12 As I mentioned a little bit earlier, the Staff has prepared and the Commission is currently
13 reviewing, a response to Congressmen Dingell, Markey, and Klink, and I expect that that will be delivered
14 to the Congressmen and made public within the next couple of weeks.
15 STINSON: Okay, why don't we take a moment to allow Cliff Honnicker to introduce
16 himself. He has joined us, and then we're going to continue with the comments on the process.
17 Cliff? If you don't mind, Cliff, we're asking you to mention your name and your
18 affiliation.
19 HONNICKER: Sure. My name is Cliff Honnicker, and I'm the Director of the
20 American Environmental Health Studies Project, and we're based in Knoxville, Tennessee.
21 We work with a number of the workers in Oak Ridge who have worked around this
22 radioactive nickel powder that's part of the barrier recycling effort.
23 And we bring to this meeting, a firsthand knowledge of the human effect, not the
24 theoretical, not the proposed, not the future effect, but the actual ongoing effect to humans right now as a
25 result of these operations.
And it's not good, to tell you the truth. I also come representing Jeanine Honnicker, who
is my mom, who any of you old timers around here probably remember her from the 1970s when she fought

1 what was going to be the world's largest nuclear plant, and with a $50 calculator, pretty much brought it
2 down to a standstill.
3 But about 20 years ago, she was here with the Nuclear Regulatory Commission when you
4 had NUREG 518 in 1980, proposed recycling of the radioactive nickel. So I brought her comments from
5 1980 to share with you guys, a sort of Ghost of Christmas Past.
6 And then I brought my attempts, my futile attempts to get the information from you guys,
7 the very basic, simple information that goes into how these proposed regs were done. My request to you
8 guys that were like my mother's request, and the 5,000 other comments from 1980 that went un-responded
9 to, my requests for information have gone unanswered.
10 And I brought that, and then for the Ghost of Christmas Future, I'm going to give all
11 this to my kids, and so 20 years from now when you all bring this effort up again, they'll be able to have
12 the materials and say, hey, it looks like about every five or ten years, you guys keep trying to trot this dog
13 out, and this dog is just not going to hunt.
14 But anyway, that's what I bring.
15 STINSON: Okay, we are at the point of taking questions of clarification on the
16 introductory remarks made so far about history and process. It's Charles and then Mike Mattia, and then
17 Jas.
18 WILK: I'm Charles Wilk with the Portland Cement Association. This is probably a
19 very basic question.
20 Trish, you mentioned who are the licensees of the NRC. Could you repeat that? I
21 assumed it was power plants, but there are some other things including accelerators, or not including
22 accelerators, and how does that relate to the Department of Energy activities in taking apart their facilities?
23 HOLAHAN: Okay, well, if I can ask you to hold part of that question for actually my
24 next slide, I'll get more into the specifics of what the licensees are.
25 But NRC has specific licensees. We do not regulate DOE facilities. And then the
agreement states -- I'm sorry, all the states, regulate naturally-occurring and accelerator-produced materials.
NRC regulates reactor-produced material, and material regulated under the Atomic Energy

1 Act.

2 STINSON: Okay, quick questions, just the cards that are up. We're moving on in this

3 discussion. We've got more presentation and information to provide.

4 MATTIA: Just a quick clarification: I understand that this rulemaking was first in the

5 hands of the EPA who then declined, and then it passed on to the NRC.

6 The question is, what authority and responsibility in this process is retained by the EPA,

7 as well as the agreement states?

8 COOL: This Don Cool. Very briefly, the EPA continues to have its authority under the

9 Atomic Energy Act to promulgate what are referred to as generally applicable environmental standards.

10 If they went through a rulemaking process and did so, the NRC, as other federal agencies,

11 would be obligated to look at those.

12 With respect to the agreement states, the agreement states will be working with us, and

13 will have to look at corresponding regulations within their particular states, and part of the issues that are,

14 in fact, on the table, are what are referred to as adequacy and compatibility in terms of the designations of

15 how close, how similar to the NRC activities, and should a rulemaking be done, the states' individual

16 standards would need to be.

17 STINSON: Okay, Jas?

18 DEVGUN: Jas Devgun. I think my question is related to where the outcome of all this

19 exercise will show up. Would it be part of the 10 CFR 20, somewhere as a revision to that? For

20 example, as the license termination rule ended up as 1401 to 1406 in 10 CFR 20, so where would you see

21 it fitting in?

22 Ultimately, the criterion is going dose-based, whether it's going to be one millirem or

23 whatever you come up with. That's going to be a dose-based criteria.

24 ERICKSON: I think that at this point we're still not -- we're at the point where we're

25 trying to make the decision as to whether or not we would proceed with rulemaking.

So I think that in terms of saying that it would be a dose-based criterion is premature because at this point, we are still in the exploration stages of what we should be doing and whether or not

1 we would go.

2 If we did choose to proceed with rulemaking, most likely it would be in Part 20, but

3 that this point, that decision hasn't been made.

4 STINSON: Kristin?

5 ERICKSON: Kristin Erickson, Michigan State University.

6 First part, I have a comment on the input process itself, and I think that could be

7 enhanced by utilizing some of the groups that are already existing in the country, an example being the

8 academic and medical. It's a very informal group, and there are 150 of us all over the nation on that

9 focus.

10 And there are other groups in the Environmental Group Center. Utilizing those groups

11 via e-mail lists or through a representative who channels the information to that group, like I will do with

12 our group, that's one good way. It reaches a lot of people of the affected parties, in a very cheap, quick

13 manner.

14 My second comment has to do with comments that I have been making for years. In fact,

15 here in Chicago during the strategic initiatives, direction-setting issues a few years ago, I complained, as to

16 many of my peers, about two parts of the way that NRC rules typically take place.

17 We laugh and we call it the ready, fire, aim, approach, which means you make a rule,

18 you set it out there, and then let the chips fall where they may, and then fight through the problems.

19 And that has been difficult. I commend the NRC and the whole process this time, in

20 that it's not done that way. We're bringing all of the comment and the groups together before we actually

21 have made a rule and before you say, okay, this is out for comment now, and everybody just come in here

22 and tell us what you think of what we've already decided, without including the groups and the industries.

23 So we're very happy about that. Finally, related to that, the comment that I made back

24 then and that I see an improvement on already, is the mixed message issue where you say, for example, these

25 things are very safe at these very low levels, whether it be liquid, solid, or air.

And then at the same time, we have a huge knee jerk reaction at some small release of amounts that are even less than we naturally have in our own bodies, many times. So I think that this

1 whole process, in the direction that it's going, and if it's kept open and healthy like this, will ultimately
2 improve on some of those problems.
3 STINSON: Could we have a comment on the comment made on EPA authority?
4 CONKLIN: Yes, I just wanted to add that it's true that we got involved in this process
5 several years ago, and as going through some of the technical evaluations and the assessments that we did,
6 and in our working with the folks in the industry and the environment and other groups, other regulators
7 in DOE, it came to our attention that a lot of the risk associated with the recycling of metals and
8 reintroduction of materials into commerce, that one of the bigger risks was from materials coming from
9 overseas.
10 And what we've done is make basically sort of a risk management decision. We have
11 limited resources, limited people, limited funding to do contracts and to do these technical assessments, and
12 have decided to put our efforts towards that arena. That's why we're working with Gwendolyn Bauer and
13 the State Department on an international level and in the IAEA and others to take a look at the
14 international scene where we think more risk may be coming our way, if you will.
15 STINSON: Okay, thank you for that clarification.
16 Okay, let's move on and hear the rest of Session 1 presentation, and then we'll open it up
17 for further comments or questions that you may have, and then comments around the table.
18 HOLAHAN: Thank you. I'd like to now move into the question, actually, that Charles
19 raised? What NRC licensees and what types of solid materials are we talking about?
20 Most of NRC's licensees are users of sealed sources in which the radioactive material is
21 encapsulated. These licensees would typically have, or sources would typically have no radioactive
22 contamination associated with them.
23 This would include the small research and development facilities, industrial users such as
24 gauges, radiography sources, and so those sources would be disposed of appropriately, but the materials
25 around which they are used would not be contaminated with small amounts of radioactivity.
For other licensees such as reactors, research laboratories, hospitals, manufacturing facilities,
the materials would generally fall into three types of categories:

1 There will be areas that will have no contamination. This would include clean or
2 unaffected areas, equipment in clean warehouses, hospital waiting rooms, university office areas, metal
3 ventilation ducts in a control room in a reactor, for example.
4 Secondly, there would be process or storage areas that may have materials with small
5 amounts of radioactivity, and these would be low because of contamination control procedures, primarily, as
6 well as just the uses in those areas, and decontamination activities as well.
7 This would include certain lab areas in a university, for example, or a research facility;
8 certain reactor buildings.
9 Finally, in the third category that's not listed on the slide -- and I apologize, but it's
10 material that's used for radioactive service where there could generally be higher levels of radioactivity, and
11 these typically wouldn't be considered as candidates for release unless there is some significant
12 decontamination activities that would remove the bulk of the contamination.
13 The types of materials, and one of the questions we have been asked is what materials
14 should be considered and should they be considered now, or should we address certain materials now and
15 then continue to look at other materials later, such as wood, glass, sewage and sludge.
16 The amount of radioactivity that a material has -- let me go back a second. I'm jumping
17 ahead of myself. So far NRC has developed the technical background information for metals, specifically
18 steel, aluminum and copper, concrete as well as soils, and these seem to be the most likely to become
19 available and represent most of the volume of the slightly-contaminated materials that might be available for
20 release.
21 These materials would found on facility equipment, piping, furniture, buildings onsite, and
22 therefore that is currently what our focus is. As I mentioned when I jumped ahead of myself is should
23 there be other materials that we should be considering now or look at it later, such as glass, sewage, trash,
24 we have heard at several other meetings. What other materials are really out there? As Barbara
25 mentioned earlier, these are the types of questions that we really want to focus on and look at exactly what
materials should be looked at, what materials are out there and look at a variety of different materials.
The next slide tries to put in some context what types of doses we are talking about and

1 how it compares to the doses received from other sources. In the issues paper that I mentioned earlier that
2 was published in the Federal Register, one of the alternatives discusses potential dose criteria of zero, .1, 1 or
3 10 millirem per year.
4 How does this compare with other doses that are currently allowed or considered by
5 various agencies? NRC's public dose limit is 100 millirem per year, and that is a limit at which we
6 believe the public is adequately protected from licensed activities. In addition, EPA allows the use of coal
7 ash recycled into concrete blocks at 10 millirem per year. For a point of reference, NCRP -- or the
8 National Council on Radiation Protection and Measurements -- considers 1 millirem per year as a negligible
9 individual dose or a level below which the dose can be dismissed for consideration in risk calculations.
10 One millirem per year is also consistent with the international community -- that is, the
11 International Atomic Energy Agency as well as the European Commission, which established 1 millirem per
12 year as a criterion for exemptions and for release of limited quantities of material.
13 How does this compare -- we heard Kristin talk about some of the natural background
14 and what is in our bodies -- and other man-made sources, and in the next graph, as you can see, it is a
15 bargraph. The orange bars are what is naturally occurring and the blue bars are man-made background
16 radiation. What the bars don't show are the variability amongst each of these.
17 As you can see, the bulk of the background radiation does come from naturally occurring
18 and is on the order of about 300 millirem per year. Radon is a large component and varies greatly
19 depending on where you live and the type of building and things you live in. There is also an internal
20 dose received naturally from foods that we eat and drink, primarily due to potassium, and that is on the
21 order of about 40 millirem per year -- and that is pretty much a constant steady state.
22 There is also natural exposure from soil and building material which again varies greatly
23 on the type of house you live in, whether you live in a brick house -- because of the natural occurring
24 thorium and uranium -- and that is on the order of again about 30 millirem per year but will vary.
25 In addition, there is exposure to cosmic radiation, which again varies. It is much higher
in the Rockies, for example, rather than at sea level. On average across the country though it is on average
about 30 millirem per year.

1 For the man-made radioactivity, a large component results from x-rays and nuclear
2 medicine and depends on the type of medical studies that you may get. Again there is a range. The
3 average for all medical procedures is about 60 millirem per year, but depending on if you have a certain
4 procedure you will get a much higher dose. If you are just having a diagnostic x-ray the dose will be much
5 lower.
6 There are also a number of useful consumer products that we have in our homes -- smoke
7 detectors, watches, for the campers a thorium mantles and the Coleman lanterns that all are associated with
8 radiation and have small amounts of radiation -- so I just wanted to give you some idea of the other sources
9 of radiation that we are exposed to on an ongoing basis.
10 Some of the other questions that we have related to and we have touched a little bit on,
11 EPA and DOE, is what are other countries, agencies and our states doing with regard to the control of solid
12 materials? Well, as we have heard already, and I will just skim over this again quickly because we have
13 heard about this, is EPA is not currently considering rulemaking.
14 They have completed technical studies on the environmental impacts of recycling, but as
15 Craig Conklin mentioned they are working with the IAEA and the Department of State, the import/export
16 issues associated with materials coming in and out of the country.
17 NRC and EPA however do have coordinated efforts in this area and we are working
18 closely with them.
19 The Department of Energy operates facilities that are facing similar issues regarding the
20 disposition of solid materials and DOE has developed criteria that is in line with NRC's existing guidance.
21 Also, what is happening on the international front is also important as we go forward and
22 consider what we are doing because we need to consider the consistency with standards set by other nations
23 and international agencies because of the important export considerations, and that different standards could
24 create confusion and economic disparities in international trade.
25 As I mentioned, the IAEA and EC as well as individual nations are all considering
setting standards and the European Commission plans to implement a 1 millirem per year standard by May
of 2000 for clearance of metals.

1 The states, as Steve Collins and Cindy Cardwell and Alice Rogers, all representing
2 different states here, but individual states have responsibility for naturally occurring and
3 accelerator-produced material and there is an Organization of State Radiation Agencies that has established
4 a committee -- and I will just say CRCPD. Thanks to Steve -- he has already said what that is.
5 All states have the authority to release what we call NORM and NARM, Naturally
6 Occurring and Accelerator Produced, solid materials that are not regulated by NRC.
7 In addition, 31 states have assumed regulatory authority for Atomic Energy Act material
8 and NRC has relinquished their authority by agreement, and these states can also approve release of AEA
9 solid materials.
10 As we are looking at this issue, we need to consider what is the need for consistency
11 among state standards and the fact that there may be material that is available for use in one state other
12 than where it was actually released.
13 At this point now I would like to again see if there's any questions of clarification on
14 these last few slides that I have gone through and then maybe open it for dialogue amongst yourselves to
15 continue the discussion of some of these issues.
16 STINSON: Okay, Cliff?
17 HONNICKER: Yes. I brought with me the 1980 or 1981 comment by the EPA. I
18 wanted clarification. Are they not considering rulemaking or is it because in the past at least they have
19 soundly rejected the notion of recycling this radioactive metal, and they rejected it on the basic principle
20 that underlies the foundation of the nuclear industry in health physics, which is the principle of ALARA.
21 For all of you who are not nuclear people, ALARA means As Low As Reasonably
22 Achievable, and radiation exposures in the workplace, in the community should be as low as reasonably
23 achievable.
24 If you are disseminating any radioactive material, however slight, and it is preventable,
25 then that violates the principle of ALARA. That is one of about a dozen reasons why EPA rejected this
effort to release this material 20 years ago.
I am wondering, has EPA's position changed on this or when you said they are not

1 considering it, had they in fact rejected it?

2 STINSON: Let's let EPA answer to that question. Craig Conklin?

3 CONKLIN: We have not taken a position on this issue as of this time. We are sitting

4 here going through the public meetings and listening to the comments.

5 One of the other things I need to bring out is that I only joined the agency back in

6 1989 so what we did in 1980 I am not fully versed in, and in order to really answer that question I would

7 have to go back and look at the 1980 comments that we made and responses to that activity.

8 HONNICKER: I am going to pass that out later. I brought that with me.

9 CONKLIN: All right. I'll be glad to look at the history there and then make a

10 response after that, once I can take a look at that.

11 STINSON: Mike and then Paul.

12 MATTIA: Just a two-part clarification. How does what the NRC is proposing, a

13 rulemaking, how would that affect material that could be released under the control of the DOE and also

14 material that is under control of the Department of Defense or the military.

15 The second part is we have heard a great deal about what has happened in Tennessee and

16 their decisions. In theory, if a rule were to be passed tomorrow by the NRC on release, how would this

17 rule affect the decision of a state such as Tennessee or any other state that up until that rulemaking has

18 made a decision on release?

19 STINSON: Don?

20 COOL: To try and very quickly answer those questions, while we do not have direct

21 regulatory authority over the Department of Energy I would expect that they would look at this standard as

22 they look at EPA standards and what is going on internationally, otherwise -- in setting what would be

23 done within the Department of Energy, so there is clearly an influence although not a direct eight-chain

24 line that you could draw that says we'll do this, we'll do this, we'll do this.

25 For the Department of Defense there is actually a split answer. For some of their

materials, in the weapons programs and others, that would be worked with the Department of Energy for

those activities. A number of the activities within the Department of Defense, and I am sure our friends

1 from the Army would elaborate if you would like, are in fact licensed by the Commission and would
2 therefore be directly impacted by these regulatory activities.
3 The third -- the state of Tennessee and other Agreement States participating in this
4 process, if you move down to an endpoint, if you assumed for a moment a rulemaking activities that was
5 resulting, then each of the states would need to move to adopt adequate and compatible, comparable
6 regulations. At the completion of that process, that would then establish in regulation in Tennessee, in
7 Texas and Illinois, and each of the other states, the regulation which would then govern whatever licensing
8 action might take place.
9 STINSON: Okay. Paul and the -- Peter? Do you want to answer to the DOE question?
10 You are going to have to use your microphone though. Pull it a little closer to you and state your name.
11 LILLY: Yes, I am Jud Lilly, with the Department of Energy. I have two points that
12 can add to I think what Don was saying.
13 The first part is the DOE oftentimes releases materials to NRC licensees and then in those
14 instances -- or the licensees of Agreement States. In those instances the NRC requirements would be
15 directly applicable if title has transferred to the -- so if the material is owned by the licensees.
16 On the second point, I believe there is a commitment of the department if the NRC does
17 set a standard in this area the Department will adopt that within the Department's regulatory structure as
18 well, so those are the two points.
19 STINSON: We're going to take the cards that are up on this issue and then take our
20 break. That ought to take us well past our break time.
21 GENOA: Paul Genoa with NEI. I would ask for a perspective, to help us with a
22 perspective. I would ask what the agreement states allow, for instance, in the recycling of scrap pipe that
23 has NORM contamination from the oil and gas industry?
24 Are there standards -- and maybe Steve could address this -- are there standards today?
25 And of what magnitude are we talking about?
STINSON: Cindy?
CARDWELL: Many of the states have already addressed this issue in that as Patricia

1 said earlier, for NORM materials and accelerator-produced materials, the states have that jurisdiction in
2 terms of setting the standards for that.
3 And many, many of them have, and they do vary from state to state. So I can't give you
4 a blanket answer as to what levels those are.
5 I think there has been a table prepared, if I'm not incorrect here, by NRC, that sort of
6 shows a rough outline of what the different states have done in terms of setting those standards for those
7 materials for release.
8 And a lot of times the states don't really refer to them as recycling, but as release.
9 GENOA: That would be helpful if that was made available to us for perspective.
10 STINSON: Okay, Peter Hernandez?
11 HERNANDEZ: Thank you. I'm Peter Hernandez, AISI. Trish, I wanted to ask for a
12 clarification. You mentioned standards that are being set by a number of organizations. You mentioned
13 IAEA, you mentioned the EU, the European Union, individual countries.
14 Could you explain if those are legally binding standards, the way NRC's standards would
15 be legally binding?
16 HOLAHAN: The standards set by the EU are --
17 STINSON: Just say your name first, Trish.
18 HOLAHAN: I'm sorry, it's Trish Holahan.
19 -- are legally binding for the countries that are in the EU. The IAEA just sets
20 standards for consideration for adoption by the other countries. Maybe can Don can add to what the IAEA
21 standards are.
22 COOL: Very briefly, because we could spend a long time. This is Don Cool.
23 The International Atomic Energy Agency sets what they call their basic safety standards
24 and a number of safety guides which actually bear some similarity to NRC Regulatory Guides.
25 Those standards are generally available to all of the members of the IAEA. There are
some 161 countries. It's a UN organization.
For those countries referred to as member states that are receiving assistance from the

1 IAEA as part of those programs, their adoption of the basic safety standards pretty much becomes mandatory
2 for those countries.
3 Most of the large, developed nuclear program countries, the United States and many of the
4 countries in Europe, are not directly receiving assistance, so while those are out there as reference points,
5 they are not legally binding to the U.S.
6 The EU that we referred to just a minute ago, that is actually by treaty, and then each of
7 the countries by treaty adopt their national standards which have to be in conformance. And that is, in
8 fact, the treaty date in May of 2000 when each of the members of the EU have to move to adopt the new
9 set of European Commission standards.
10 HERNANDEZ: Thank you. I had just a quick followup. We have been participating
11 in the State Department IRSM as well. And at the last meeting, a representative from the IAEA indicated
12 that their governing board had decided not to move forward with any standard, if you will, but instead to
13 adopt simply a consensus type document that would be very voluntary.
14 That's why I was asking for the clarification. Does IAEA, in fact, set standards, or are
15 they simply recommendations? Thank you.
16 STINSON: Alice?
17 ROGERS: I'm not quite sure --
18 STINSON: Name and affiliation.
19 ROGERS: I'm Alice Rogers. I'm with the Texas Natural Resource Conservation
20 Commission, which is probably the agency with the longest name ever known.
21 I'm never quite sure when to make comments, so if I have already missed it or it's coming
22 up later, I do apologize for that.
23 But the tone of this conversation, this talks, seems, at least to me, with ten years
24 experience in hazardous and solid waste management, to have forgotten that when you release materials
25 under the NRC's jurisdiction, that they are still solid wastes and they are still subject to state and federal
solid industrial and/or hazardous waste planning and other regulatory concerns.
So I would urge you to continue to work closely with EPA, but also to bring the

1 Association of State and Territorial Solid Waste Management Officials, also known as ASTSWMO, to the
2 table.
3 There are some significant issues, especially in the municipal solid waste landfill business,
4 because those landfills are usually run by small local governments who have insufficient funding --
5 something they will always tell you -- to do put in radiation detection monitors and to know what to do
6 when they have incidents.
7 And also they would have to change the groundwater monitoring suites and would have to
8 do different kinds of groundwater monitoring.
9 And then I think that other states do this, but Texans believe that Texans should take
10 care of Texas, and so as part of that, we have significant solid waste planning to make sure that we have
11 the right number of landfills, not too many, not too little, to take care of Texas waste.
12 And so when you start releasing these materials from the NRC's jurisdiction, then one
13 could assume a good portion of that would be going to the solid waste management facilities, and/or
14 landfills, and so that would change our statewide solid waste planning.
15 And then lastly, I'd just like to say that I really do believe in rulemaking because that
16 gives you the opportunity to do the analyses, the very complicated analyses that you've asked all these
17 questions about in the Federal Register.
18 STINSON: Thank you, Alice. Let me say specifically that ASTSWMO has been -- that's
19 the acronym for the association that she mentioned -- has been actively engaged by Meridian to participate
20 in these processes. And they did have a representative from Colorado, Jeff Deckler, at the last meeting.
21 And we're so happy to hear that you're interested in the solid waste issues and can
22 represent those concerns for this meeting. That will be very helpful, and we can tell you who we've talked
23 to from ASTSWMO if you want to report back there.
24 Bill Lipton and the Kristin Erickson.
25 LIPTON: Okay, Bill Lipton, Detroit Edison.
The concept of ALARA has been invoked here, and I just wanted to clarify that that is
as low is reasonably achievable, and that is to prevent any radiation exposure that you possibly can; it

1 implies --

2 If you read the definition, it's economic and social factors that are taken into account, and

3 it implies reasonable risk versus benefit analysis, not just the prohibition of all radiation exposure.

4 STINSON: Thank you. Kristin?

5 ERICKSON: I second what Bill said. This is Kristin Erickson, Michigan State

6 University.

7 I would like to expand upon that just a little bit, because that was going to be my

8 comment, that ALARA, as applied, is actually a process. It's a professional standard of excellence, and it's

9 tied into our license. We committed to ten percent of any limit.

10 What this means, though, for those of you who are, I guess, not doing this every day, is

11 like on our campus where we have several thousand people and 800 or a thousand rooms.

12 Let me give you an example: We decommissioned an entire building, and in that

13 building, we found finally in one lab, underneath a refrigerator, a spot of Carbon-14 with about

14 1/10,000th of the amount that we find in any normal human body who has no uptake of manmade.

15 Under the preventable, we would have to secure that room, and not release it. As applied

16 in ALARA, we can, because we can look at the amount, we can look at the risk, and we can look at the

17 ultimate outcome.

18 Now, we didn't do that, in fact, in that case. It came out easier for us to chunk out that

19 tiny piece with a screwdriver. So we do ALARA, even when it's not necessary because we were concerned

20 about the contractors who were going to come in. And if they heard by the grapevine that anything was

21 there, they would be terrified, partly because of our message of any radiation is deadly, any radiation is

22 dangerous.

23 Part of what I think this whole process will achieve, if it's done right, is to come up with

24 some numbers that are reasonable risk, acceptable, and usable in a practical way by anybody, and also

25 understandable by the public. That's a critical factor.

Then, finally, my two short things I would like to add a couple of things to this list, and

I think we should add activation products, mixed waste and lead. Where's lead?

1 I spent two weeks in my waste building last month, literally surveying tons upon tons
2 upon tons of lead that has been stored and squirreled away there for 14 or 20 some years because nobody
3 knew what to do with it. And this is problematic.
4 STINSON: I think we've heard now the addition of nickel and lead to our potential list
5 of materials to explore.
6 I stated earlier that we would take the cards that were up, and I think Dan and Jim
7 were the ones left. We want to hear your comments, but maybe we'll go ahead and stick with the break
8 time, and then come back, if you still want to make your comments.
9 Dan?
10 GUTTMAN: Thank you. I'd like to follow up on what Kristin --
11 STINSON: Dan, just mention your affiliation, please.
12 GUTTMAN: Dan Guttman from PACE. First of all, PACE represents the workers, is
13 the primary representative of the hourly workers at the Department of Energy Nuclear Weapons Complex, as
14 well as many industrial sites where radioactive materials are used. It's probably true, and this isn't a boast,
15 but it's unfortunately reality, that PACE members work as near to all kinds of levels of radiation as any
16 population in this country, and probably any population outside of Russia.
17 So we're not talking about a group of people who have an innate hysteria about low-level
18 radiation. Having said that--
19 STINSON: Just stay close to the mike, if you can.
20 GUTTMAN: Having said that, my question is, it appears to me, Trish, with due respect,
21 the chart and graph you presented here are fallacious and really should be corrected promptly.
22 How does a potential radiation dose from a standard compared with the dose received
23 from other radiation sources, and then we have the bullet, comparison with natural background.
24 As you folks from the Academy presented correctly, of course, the point is that we all
25 experience natural radiation. The reality, as we have now heard, is one way or the other, by hook or by
crook, by laundering, as the BNFL folks did, or by actual lawful activity, the NRC rule is going to govern
the Department of Energy, which is the lion's share of all the junk we're talking about.

1 Secretary of Energy Richardson has courageously just announced repeatedly that after 50
2 years, our workers, as well as folks in the communities, have been misled, lied to, and have no clue as a
3 result of what doses they have been exposed to, and the exposures are pretty clearly above and beyond what
4 was said.
5 Mike Mobly, who many of you know from Tennessee, who just retired, repeatedly said, as
6 the person with the primary state oversight for Oak Ridge, that monstrous source of radioactive materials,
7 that letting stuff offsite, sure. The folks at DOE and the contractors, a little hot spot, that would pass
8 unnoticed, what's the big deal? It gets lost.
9 So here is my question, Trish, and I'd like you to think about this over lunch: Are you
10 going to retract the statement that how does a potential radiation dose from a standard assume that, in fact,
11 the standard will be honored and complied with?
12 We know for a fact, the Administration, the President of the United States' Secretary of
13 Energy has said you cannot make that assumption in the case of the waste we're talking about here.
14 The head of Tennessee has made that statement. We all know as common sense, he has
15 made that statement. It's really misleading to tell all these folks that a standard will equate to background
16 radiation when I could tell you it would be 50, 60, 100 times what the reality is, and we don't have a
17 clue.
18 So when you make this presentation in the future, can you say that at least I can't talk
19 about the fine folks who are running nuclear power plants at Detroit Edison or Consumers or whatever the
20 name is today --
21 STINSON: You've got to talk into that Mike, Dan.
22 GUTTMAN: It's still Detroit Edison or it used to be anyway. But it's clear that you
23 can't make that presentation for the bulk of the waste. We have no idea what the relation of a potential
24 standard to be the potential dose; isn't that correct, in reality?
25 STINSON: One of the things we are going to talk about --
GUTTMAN: Unless you've got some data that you can present, which you haven't.
STINSON: One of the things that we're going to do is talk later this afternoon about

1 control mechanisms for trying to assure that the controls are in place, and reduce the reasonable occurrence
2 of accidents and other kinds of activities, but maybe -- do you have anything specific you want to say?
3 I mean, we're going to get to the questions that you've raised, Dan, and maybe there will
4 be questions that you have after that, that will take the NRC towards further investigation.
5 GUTTMAN: I would just like to request that this be withdrawn and not used in further
6 presentations because it's extremely -- unless there is a footnote saying we have no clue as to most of the
7 waste.
8 STINSON: Jim Turner?
9 TURNER: Jim Turner, Ameristeel. I have a question that is probably pretty simple and
10 basic, and then I have a comment from my own experience.
11 The question is -- and you may have answered this before -- is there a direct relationship
12 between concentration and dose? And my comment is, I think the steel industry cleanups, at least the ones
13 I have been familiar with, are based on concentration.
14 And instead of ALARA, I'd say it's ALUHA, as in unreasonably achievable.
15 I'm familiar with incident-related material cleanups that are down to the two picocuries
16 per gram for concrete, soil, dust, and so forth.
17 So I just wanted to point that out. They've taken, the last one, five years and $15 million
18 to complete. I'm interested in the relationship between dose and concentration.
19 HUFFERT: That will be discussed in the next session with Dr. Mack.
20 STINSON: Okay, good. Steve, you're going to save your comment. Cliff, if you'd like to
21 do the same, we can come back. Is that okay?
22 COLLINS: Yes.
23 STINSON: Okay. We'll take our break now, and return for a little bit of further
24 discussion and the opening of Session Number 2.
25 [Recess.]
STINSON: Okay, let's get started, if we can, please. Let me just call your attention to
the slide here. It does contain the new modified, highly improved address for the Web site. You should be

1 able to download documents, even such as NUREG-1640, which is quite extensive, but a lot of historical
2 documents: all the meeting summaries from these meetings; all of the technical information submitted in
3 support of these meetings. If there were comments submitted electronically, they're posted. Obviously, those
4 in paper weren't posted and all the transcripts for the meeting, as well.
5 What we want to do now is take Steve's comment, see if there are any other very brief
6 final comments on session two, and then take any opportunity for members of the public or the observers in
7 the back of the room to offer some observations or ask any questions they might have. Steve?
8 COLLINS: Steve Collins, CRCPD. Actually, my comment was for Peter Hernandez. I
9 believe -- and he's out of the room -- he asked a question about norm criteria and stuff.
10 STINSON: That's right.
11 COLLINS: I was going to mention that there is a private consultant, Peter Gray of Peter
12 Gray and Associates, who puts out a little newsletter roughly quarterly, which actually has a listing of the
13 norm criteria for each one of the states and then every quarter, he kind of provides an update or summary
14 of the changes that are occurring or being proposed in each one of those states. So, if it's in the naturally
15 occurring way -- I mean, that's a good source of the information that he was asking about. I'll try to catch
16 him during a break and tell him that.
17 STINSON: Great. He'll probably appreciate that. Cliff? And then we're going to move
18 to the public comments and ask you all to move up to the microphone, if you'd like to offer any
19 observations or questions.
20 HONNICKER: Okay. I made that comment. First of all, you all don't jump on me. It
21 wasn't me that said the ALARA thing. It was the -- it was the director -- William Hinman, director,
22 Office of Environmental Review for EPA. So, don't slay the messenger, okay. That's a general request.
23 What he said was -- the following is a quote from summary section Chapter 8, NUREG
24 CR-1775, "In the case of both decorative glassware and glaze ceramic products, some exposures to the public
25 to ionized and radiation will result. In some instances, these exposures may be significant. The promulgated
philosophy is that all exposure should be kept to levels, which are as low as reasonably achievable and that
no exposure should be incurred without commensurate benefit, NCRP-75. Since the use of uranium in these

1 products result in little or no benefit, in terms of the health or well being of the public, and since suitable
2 substitutes for uranium exist for this application, it can be concluded that the exposures incurred, as a result
3 of product distribution and use, while low in most cases, are unnecessary and unwarranted."
4 And he was making that in response to the -- on page 415 of this earlier draft, that
5 while most of the doses listed for both individuals and populations are indeed extremely low, there are
6 individual cases which are not in keeping with as low as reasonably achievable philosophy. The worst case
7 scenario shown are for copper bracelets, 300 millirem a year, and bone prostheses, 200 millirem. These are
8 relatively high end, themselves, no matter how limited the area of exposure. So, that's what the EPA was
9 saying. That's not what I was saying, number one.
10 Number two, I just wanted to react real quickly to what Mr. Guttman was saying, which
11 is you have -- at least earlier in this earlier draft -- in this draft, the NUREG 518, the draft environmental
12 impact statement, at least you can read it and understand, okay. At least you can read it and read the
13 calculations and read the assumptions, read the scenarios, and understand it, and you have a basis for
14 making intelligent decision.
15 The material that you all sent me on this proposed regulation that's going on today, it's
16 incomprehensible. It's incomprehensive for the average public to make a public comment, because it is to
17 poorly written, the science is so poorly elucidated that how can anyone make a comment on is. And I --
18 you know, I read it -- frankly, Dan, I read it and I said, well, damn, I would write something like this, if
19 I didn't want the public to comment on it. I'd write something so obscure, so fuzzy, so inarticulate, that the
20 public would either be bamboozled and say, gosh, it is -- it's so -- wow, this is rocket science; it's way up
21 here and I'm way down here and I don't get it, so I'm not going to say anything.
22 Now, that's kind of a jaundiced kind of look at it. But, then, I read Dan's thing and it
23 said it was SAIC that wrote this thing and SAIC that has a direct economic impact or benefit from the
24 passing of this regulation. See, if it gets passed, they make millions of dollars off this BNFL contract going
25 on in Oak Ridge. So, hey, that would be a great idea, write something so obscure that nobody could -- a
human -- a regular human being walking off the street, a science teacher, I wouldn't take this to my kid's
high school science teacher, because I don't think they could get it.

1 And one last thing, the head of the nuclear program for the Nuclear Information
2 Resource Services, Di Derego, I asked her, I said, "Di, I've been out of analysis of this kind of stuff for a
3 couple of years" and you've gone to milli-sieverts and baccerals and microbaccerals -- and, by the way, you
4 all showed on your presentation earlier millirems, which is what I learned, rems, rankins, reps, and that's
5 what this earlier thing was in. This other thing that's in sieverts and baccerals, it's over my head. But, I
6 asked her -- she has a chemistry degree -- I asked her, I said, "could you sit down and with this proposed
7 rule and do the calculations? Could you do a critical dose response from any particular thing?" And she
8 said, no. And she said that she was laid over in an airport with a senior NRC scientist and they sat down
9 and tried to sit down and do the dose calculations on it and they couldn't do it. So, my first response --
10 and that's why I'm not going to respond today on anything in your proposed rule, because I don't get it.
11 STINSON: Well, and hopefully, two things: the next presentation in session two, Cliff
12 does walk through NUREG-1640, and I know Bob Meck is definitely willing and interested in having this
13 document addressed, be able to be absorbed and address concerns that the public might raise. So, I'm sure
14 he'll be open to your suggestions for making it more readable.
15 HONNICKER: Well, I am -- I mean, I'm probably the only Southerner here. I'm the
16 only -- I feel like I'm the only --
17 STINSON: No, there's more Southerners here.
18 HONNICKER: Okay. Well, thank God. Well, let's get together in a little bit.
19 [Laughter.]
20 HONNICKER: No offense, no offense to Northerners. I mean, this is -- you can take the
21 boy out of the country; you can't take the country out of the boy.
22 I would like to, also, see if we can make the issue a lot more fundamental to understand,
23 rather than getting lost in any minutia in the scientific analysis of this proposed rulemaking. It's probably
24 more important that we go back to the basic fundamental issues, which is -- the very easiest one to do is the
25 economic cost benefit analysis. And if the only -- there's 100 reasons -- at least 100 reasons why this is
not a good idea to put this stuff back into the community. But, there's only two reasons why it's good to
recycle this stuff and those two reasons are: it's economically beneficial to the corporation that has the

1 contract; and it's economically beneficial to the DOE and to the private nuclear concerns to get this stuff out
2 the door.
3 So, if you want to get it down to the economic benefit of getting this stuff out versus the
4 economic loss that the radioactive -- or the radioactive -- that the regular recycling metal industry has or
5 even the perception -- you know, if you look at the stock market, you look at how many hundreds and
6 billions of dollars are lost in a single moment on perception, that those are the things that I think that we
7 need really focus on and that will make this meeting and this rulemaking issue much more realistic.
8 STINSON: Okay, good; thank you. Kristin and then we're going to see if there are any
9 comments from the observers.
10 ERICKSON: I'd like to respond to Cliff. This is Kristin Erickson, Michigan State
11 University, and I want to agree with you about the way that this is communicated. I talked to people -- I
12 train thousands of people a year and they are most of them not radiation people. Many of them haven't a
13 clue; they don't know a rad from a rat. But, we have to communicate to them in plain language.
14 I would like to explain to you that I know this and I understand how difficult it is for
15 the person on the street to understand any of what we talk about. But, I want to, also, defend it, in some
16 justification, because if they didn't publish it that way, I could guarantee that the NRC would be throttled
17 by those in the industry -- of our industry, who would say, this wasn't right; you know, where's .4392 grams
18 of shielding, not .5; mia culpa. This kind of things goes on.
19 HONNICKER: No, I think it could have read -- you know, I've been reading science --
20 radiation-related documents for 20 years now and I have a fairly good grasp of these issues and I can tell
21 you that this one was not clearly written. It was not clearly written. And we can sit down all day and go
22 over the technical faults of it; but before we go down over the minutia, let's talk about the big picture.
23 STINSON: Good. Both points are well taken. You certainly need to be technically
24 accurate and you certainly need to have it be understandable to the public.
25 Speaking of the public, anybody from the observer area that would like to make a
comment? Yes, ma'am, please come forward to the microphone. Anybody else plan to make a comment?
Sir, you could step forward, as soon as she is done. Go ahead. Your name and affiliation again.

1 BAINUM: My name is Sydney Bainum. I'm part of the National Coalition of Organized
2 Women. I'm, also, part of NEIS, Nuclear Energy Information Service here in Chicago, Dave Craft's group.
3 STINSON: If you could speak directly into the microphone.
4 BAINUM: I would like to say that I am just completely in a state of shock that the
5 idea of releasing any more radiation into this already over-radioactive pollution; just appalls me that you
6 could even consider having a radioactive frying pan or a radioactive metal surrounding a window.
7 Now, on top of all the radiation that's come from the bombs, which are still pulling
8 around stransium 90, from all the releases of the 400 nuclear power plants, from all the waste, from all the
9 dumping -- and not only that, British Nuclear Fuels, one of the most polluted corrupt nuclear industry
10 companies, is in charge of doing this in Tennessee. It already has a contract sanctioned by Gore to take
11 100,000 tons -- yeah, 100,000 tons -- it's already been done and it's been reprocessed, going to Albionics.
12 There are already radioactive pots and pans out there. The Navy promised to take them, but the pots and
13 pans made all the instruments of the submarines go off the wall, so they said no, we don't want these pots
14 and pans. So, now, they're up in West Best -- I think they're in West Best, Wisconsin, because that's a pot
15 and pan factory place, and they're being sold now to consumers. Now, would you want to cook soup in a
16 radioactive frying pan? This is what's going to happen.
17 How can you measure this radiation? There are hot spots. It's never equal; we all know
18 that. If you have a rad alert and you take it in a room, over there, you'll find radiation; over there, you
19 might not find any. And that's going to be the same thing wit these metals. You might have five spoons
20 that are okay, then one spoon with an ounce of plutonium particle. You're not going to be able to measure
21 this stuff when it gets all mixed up into a potpourri.
22 Now, I would like to say what Carl Morgan has said. You know the famous Dr. Carl
23 Morgan, the father of health physics, who just died last year, who was deeply respected by everybody. He
24 was the one that said, no, you should not radiate children's feet. Remember when we all used to get x-rays?
25 Okay, he was one of those types, you know, concerned about health and safety, not profits, okay; not profits
-- for polluting for profits.
That's what this is all about, it's to save money. That's all it's about. Instead of spending

1 so much per cubic meter and shipping it out to Utah in a safe place with no radiation -- zero release of
2 radiation, you're going to mix it all up, so our grandchildren -- I'm worried now. I'm going out and
3 buying pots and pans for my grandchildren, because when they get married 20 years from now, there won't
4 be one pot out there that's clean. There will be nothing out there that's clean, if you let this happen.
5 STINSON: If you can, ma'am, can you please keep your voice down?
6 BAINUM: I'm sorry; I'm sorry.
7 STINSON: Stay calm with us. Thank you.
8 BAINUM: All right. Now, I want to just say what Carl Morgan said. You all know
9 that he is a Ph.D, he's a professional, and he has been nuclear peer -- he's been peer reviewed by all the
10 scientists. Okay, this is from -- I must say that the most -- the magazine that does anything on nuclear
11 issues is the Progressive Magazine. They're the only gutsy magazine and they put this out last October. It's
12 an article called Nuclear Spoons.
13 "Carl Morgan, known as the father of health physics, shutters at the idea of more and
14 more radioactive metal entering people's homes. He is particularly worried about dental fillings. You
15 certainly don't want people going around with radioactive teeth, he says. Some of the most dangerous
16 radioactivity around the homes, says Morgan, will be the metals people unintentionally ingest. Some of these
17 find their way directly into the human body, especially copper forks -- in forks, he says -- cooper knives
18 and so forth. It doesn't help any cell in the human body, if you send an alpha particle through it."
19 "Now, Richard Clapp, who is associated professor of the Department of Environmental
20 Health at the Boston University Schools of Public Health says you may soon need to fear household products
21 you have most contact with. If you're sitting on it or if it's part of your desk or in the frame of your bed,
22 where you have constant exposure and for several hours, you will be in most danger. Clapp, who published
23 the study on the increase in Leukemia and thyroid cancers associated with low-level radiation exposure
24 among people living near Massachusetts Nuclear Power Plant says radioactive metal recycling will raise over
25 all radiation levels."
So, we're going to add all radiation levels. It's going to affect everybody's health, right.
It's going to be out there.

1 STINSON: One minute, please.

2 BAINUM: Okay, fine. It says, "recycling will -- what is their right -- who is in the

3 right mind would want to do that," he asks. And then he says, "this is the legacy of an industry gone mad."

4 Now, I just want to bring one last thing -- I'm sorry I got a little excited. But, you

5 know, I've been doing this for 20 years and you feel like you're up a stone wall, okay. This already has

6 happened. This was radioactive scrap in building materials found in Northern Taiwan. Remember we had

7 the earthquake there? Well, it's the same town, Taipei -- yeah, Taipei, I can't pronounce it, in Taiwan.

8 They buy -- it's a very corrupt military government and they did -- they released contaminated materials in

9 the '80s. So, those apartments are all radioactive -- you know, the window frames, the cement, the roads,

10 everything. And this boy -- a boy's illness was the direct result of his sitting next to a heavily radioactive

11 window cage at his kindergarten and this boy got Leukemia. So, we're talking about inflicting more --

12 many, many more health problems.

13 Thank you, very much, for letting me talk.

14 STINSON: Thank you. Sir, your name and affiliation? You are limited to five minutes,

15 if you don't mind. We'll have other opportunities for input.

16 LOEB: Rob Loeb, First Energy. That was a hard act to follow. But, I want to try to

17 focus on the process. And one thing I would like to comment on, with regards to the process, is kind of an

18 expansion on what the NEI representative said, in the mixture of materials.

19 STINSON: Can you speak a little more directly into the microphone?

20 LOEB: Okay. It seemed to me that the intent was to try and decide what to do with all

21 these materials that are stored in various facilities. But, then, there's a statement that the proposal will be

22 comprehensive for materials and equipment. And to me, that means everything: the tools that we use

23 everyday; the trucks that we drive in and out of the radiologically controlled areas; the shipping containers

24 that are used to send for burial. And I found that there -- I felt that there need to be some clarification

25 with regards to exactly what would be covered by this rule. Because, when I look at the values, the

screening levels that are proposed, there just is no technology in existence for releasing a bulldozer from a

radiologically controlled area to those kind of levels. So, I'd really like clarification on that.

1 STINSON: Okay. Is that your question?

2 LOEB: Yes.

3 STINSON: Okay. Don or Trish? And this is a subject of one of our discussions after

4 sessions two, which materials should be considered versus which one are already definitely under

5 consideration by NRC.

6 COOL: This is Don Cool with NRC. I think there's two answers. The first, I hope we

7 will get to, as part of these discussions, in terms of whether or not there is technology, how you would go

8 about validating and verifying whatever kinds of criteria might be put in place.

9 Your first question, which is what is the scope of the rule or potential rule or guidance or

10 whatever action the Commission may further direct the staff to do, that is, in fact, a question, which is open

11 for discussion here. Certainly, there is a view that if the Commission moves forward, it would be nice to be

12 as encompassing as possible. Part of the issues, which we are laying on the table, is to what extent that is

13 reasonable; to what extent a single approach will work across a variety of materials; or whether there are

14 different approaches, which ought to be used. And so, I appreciate that statement and would, in fact, ask, as

15 we continue with this, that you come back and find -- provide some further reflection to us on that exact

16 scope question, as we proceed through this day.

17 LESNICK: Thank you, very much. Let's move on to session two. If you look at you

18 agenda and, also, some of the background slides, as we proceed. As you know, where we're heading later

19 this afternoon and tomorrow is to spend a great deal of time with this chart, to talk about particular

20 materials and to talk about different ways of managing solid materials and the implications therein. But,

21 before we get to that point, we want to make sure we've got some good solid discussion and grounding and

22 background.

23 This morning in this first session, we spent time on NRC's authority, why are they even

24 considering a possible rule, the time line they're looking at, and some of that kind of background

25 information. We'd like to proceed in session two, to give you a little bit idea of what kinds of studies the

NRC is currently pursuing, has pursued, and what it will be looking at in the future. This is going to

cover some about technical basis, about soil. It's going to, also, address issues of environmental and health

1 implications, as well as cost.

2 Similar to the session one, we're going to have some background presentations first and

3 slides. You can come along and look at your hard copy, if you can't see the projected image. And then,

4 we'll talk about this probably technical basis first and then environment and health and then cost issues.

5 We have three presenters: Tony, Bob, and Giorgio. Tony, you're going to start this off.

6 HUFFERT: Yes. Thank you, Mike. As Mike just mentioned, the purpose of this session

7 is to give you --

8 STINSON: Tony, mention your name.

9 HUFFERT: I'm Tony Huffert, NRC headquarters. The purpose of this session is to give

10 you an overview of the technical work that the NRC has been doing over the past several years and, also, to

11 summarize the current and future activities that we'll be working on under this clearance initiative.

12 The past several years, the staff has focused on developing a technical basis for estimating

13 the radiological dose that an individual may receive from the release of certain solid materials of low levels

14 of residual radioactivity that is either on or in the volume of the materials in the equipment. The staff

15 limits its analysis to only iron, copper, aluminum, and concrete, as these solid materials were considered the

16 most likely candidates for the release for unrestricted use.

17 The results of these staff efforts were published in a report in March of this year, which is

18 NUREG-1640, which has been discussed so far. Copies of this document are available and the public

19 comment period is still open until the end of the year, so we welcome your comments for that time. And

20 certainly after the beginning of the year, we'll consider your comments; but, we appreciate getting them as

21 soon as possible.

22 NUREG-1640 is limited in scope and is only one of several analyses that are needed to

23 support decision making. Additional analyses are needed for us to do any environmental impacts and the

24 costs and benefits of alternatives associated with solid material releases. The staff is currently developing a

25 more comprehensive inventory of materials that could be potentially released from nuclear power plants, as

well as materials facilities. We are, also, in the process of analyzing collective doses to populations and the

potential for radiological exposure to multiple items that may be released.

1 Another consideration is the ability and the cost to survey or measure low levels of
2 residual radioactivity that is on the surface or in the volume of material and equipment that can potentially
3 be released. Implementation considerations such as this will be addressed in the draft regulatory guide, if
4 we decide to go forth with the rulemaking.
5 One of the materials that was not included in NUREG-1640 analysis is soil. As part of
6 the technical basis development for soil, the staff is currently completing a literature search on the uses of
7 recycled soil, which I will discuss after Dr. Meck discusses NUREG-1640.
8 LESNICK: Tony, can you get that even closer? We're having people point to their ears.
9 HUFFERT: Okay. For now, I'd like to turn the session over to Dr. Meck, who is the
10 project head in the development of NUREG-1640, and will explain the technical approach of that report.
11 Bob?
12 MECK: Thank you, Tony, and good morning. I'm Bob Meck and I am with the Nuclear
13 Regulatory Commission, in the Office of Nuclear Regulatory Research. I'd like you to recognize that we
14 note the positions that we've heard already this morning and expect to hear more this afternoon and we will
15 certainly consider those positions.
16 But, for the moment, I'd like you to step back from your positions and put yourself in the
17 situation where the staff is, and that is, if the Commission were to set a standard for the release of solid
18 materials into the general commerce and equipment, what should be the approach to take to ensure adequate
19 protection of individuals and the environment? How would you go about that? That's the challenge that
20 we took on with the development of NUREG-1640 and it's only the first piece of the development of tools
21 to help the Commission make such decisions.
22 NUREG-1640 has two volumes and it's out on the table across the hall outside this room.
23 And just so that I know who my audience is, how many people have a copy of this?
24 [Show of hands.]
25 MECK: Lots of people have. How many people have tried to read it?
[Show of hands.]
MECK: All right. And how many people feel pretty familiar with it?

1 [Show of hands.]

2 MECK: Okay. People have tried to read it and that's where it ended. I hope that I
3 can give you some -- and I'm going to be very fast, so my colleagues, who are familiar with this, don't fret.
4 I'll go through it. But what I can tell you is that I will make myself available for one-on-one or however
5 many on one, over in the corner on breaks or at lunch time and so on, if you want some more details; I'd
6 be happy to go over that with you. But, I'll give you the general approach of what this tool is about.

7 Now, I want to emphasize that this is not a regulation, but rather it's a method to convert
8 a dose, and it could be any dose that the Commission might decide on, to an individual to the amount of
9 radioactivity that would be associated with that dose. But, that still doesn't get to the initial question that
10 is posed to the Commission: how -- what approach would you use to ensure that there would be adequate
11 protection of the individuals?

12 Well, the approach is that if we look at all the kinds of things that can reasonably be
13 expected to happen to such materials, if they were released, or equipment, if it was released, with associated
14 radioactivity, and we analyzed those situations and found which individuals were then likely to get the
15 highest dose, and if we protected those individuals to a set level, then the other situations that we would
16 look at would be -- have even less dose. And so by protecting the critical group, that is those individuals
17 most likely to get the highest dose, we're, also, protecting other individuals in the population.

18 That's what this document basically does, it provides a conversion factor to go from a dose
19 to the implementation, where people actually have to measure this and say, well, how much on -- how much
20 radioactivity on a particular gram of scrap or a particular square centimeter or scrap would be permitted
21 and still keep those to the individual less than that amount.

22 How did we actually go about it? What does this document actually do and why does it
23 take two volumes and why is it so thick? At the outset, we don't know who the critical group is. And so
24 what we had to do is to analyze for the four materials that were mentioned -- steel, aluminum, concrete, and
25 copper -- the reasonable scenarios or outcomes that would happen. And the total number of those scenarios
is quite complex, reflecting American society, and there were 79 of them that we analyzed. And the dose
differs for each radio nuclide that we have, because each radio nuclide has its own unique characteristic of

1 radiation that it emits, and so we had to go through all of those. And there were 85 of them that we could
2 reasonably expect to be released.
3 And so -- then, in addition to that, there's variability. How can we say that in these
4 scenarios, we have -- we know exactly what people are going to do with this material and we can calculate
5 it precisely? The answer is, of course, we don't know exactly. There's variability. The surface to mass
6 ratio, some pieces of scrap are thick; others are thin. It makes a difference of how much radioactivity could
7 be associated with that piece of scrap. And so, we used a probability approach. We take into account the
8 range of virtually all the parameters that go into these scenarios. How people behave -- a truck driver may
9 drive a hollow load two hours or six hours a day, and we take all of that into account, in a probablistic
10 way, and we sample that.
11 And so to get these conversion factors from concentration to dose or dose to concentration,
12 what we ended up with was some distributions. And what's reported in NUREG-1640 is the mean and the
13 uncertainty associated with how well we know those means for the situations. And from that, basically, what
14 we got, if we say this is the number of times that we got a particular value for the conversion factor and we
15 look at a particular scenario for a particular radio nuclide, it turns out, for example for Cobalt 60 in steel,
16 that the scenario that gave the highest mean dose was for the person who transports the scrap. Okay, so this
17 is a truck driver, right.
18 The other scenarios that we looked at, for example a small object worn next to the body,
19 like a belt buckle, or a person who, in turn, cuts the scrap, or somebody in the slag pile after the metal is
20 melted, then those conversion factors came out -- if this is actually zero down here, as it turns out for this
21 situation, all of these other scenarios were far, far below. And so going back to the philosophy on how do
22 you ensure protection at a certain dose, if you protect the truck driver, then all of the other scenarios would
23 indicate that the other groups associated with the release of that radio nuclide would be protected even
24 more. So, that's basically what NUREG-1640 does.
25 LESNICK: Thank you, Bob.
MECK: I can -- let me just add one more thing. There's ongoing work. This is the
protection of the individual. There is, also, the question, in terms of rulemaking, of what's the overall

1 societal effect, and that's what we look at when we accumulate doses for -- across the whole population.
2 That work is ongoing and we'll report on that when it's done. Thank you.
3 LESNICK: Let's keep going with some of the other background studies, then we'll come
4 back and we'll have discussion for the rest of the morning and the early part of the afternoon about this.
5 Tony?
6 HUFFERT: Sure. Thank you, Bob; thank you, Mike. As Bob pointed out, soil was not
7 one of the materials that were included in the NUREG-1640 analysis. Early this year, the NRC staff began
8 working on the technical basis of soils clearance, because it was identified as an additional solid material
9 that may need to be disposed of. Specifically, we're looking at the recycling or the reuse of soils that could
10 be released for unrestricted use.
11 The goal of this effort is to perform a dose assessment of potentially recycled soil, similar
12 to the dose assessment methodology that Bob just pointed out in NUREG-1640. And as part of this effort,
13 the staff is working with the National Agricultural Library of the U.S. Department of Agriculture,
14 Agricultural Research Service, to conduct a comprehensive literature search of recycled soil use in the
15 United States. The National Agricultural Library was chosen, because they possess the world's largest
16 collection of literature, data bases, and information sources on agriculture and have developed and
17 maintained the preeminent agricultural literature search system, called Avercula. And the objective of this
18 effort is to identify and to retrieve citable references for identifying and characterizing recycled soil usage
19 scenarios and for the parameter values for conducting dose assessments of the predominant scenarios, which,
20 in turn, will be used to identify the critical group and the potential doses. The comprehensive literature
21 search was completed last month and we're currently working to develop a condensed listing of the relevant
22 literature and supplemental information sources for retrieval and review.
23 Following our literature review, the NRC staff will identify and characterize recycled soil
24 usage scenarios and estimate the parameters for the dose assessments. We are requesting public input to
25 identify citable literature and data bases pertaining to the recycled soil use that is relevant to clearance.
We are planning to publish a draft report on this subject in the next month or two and to hold a public
workshop at NRC headquarters in March, to present not only the findings, but to obtain the public input

on soil uses.

At this point, I'd like to turn over the session to Giorgio, who will discuss the health, environmental, and economic impacts that should be considered for decision making. Giorgio?

GIORGIO: As many of you are experiencing, I'm having a little bit of trouble with my name today. Let's see if I can do this. Good morning, I'm Giorgio of the Special Project Section in the Decommissioning Branch, in the Division of Waste Management at the NRC. That's the long name. I'm, also, part of the working group that was mentioned earlier.

In this part of session two, I will be following the discussion on radiological evaluation of clearance pertaining to the potential health and environmental impacts associated with the various alternatives being considered for clearance. For those of you following the issues paper, this session relates to issue two, item (a).

What are the potential health and environmental impacts that should be considered? First and foremost, the basis for NRC's consideration of any action related to the release of control of solid radioactive material is protection of the public health, safety, and the environment. NRC will evaluate impacts of all the alternatives being considered. For each alternative, one of the attributes to be considered is the potential radiological impact, and the first step is to assess the potential dose to an individual. For each alternative, we consider the potential exposure for individual and multiple sources; so not just one thing: eyeglasses from recycled metals, steel girders in housing and office construction, etc.

We use a two-step process in picturing how this exposure can occur. First, we examine how the material is released and comes into contact with people. This is scenario analysis. And then we look at the ways in which the biological impact is delivered by inhaling, eating, etc., and this is called the pathway analysis. One can look at this whole process as part of the material flow, from the licensed activity to the generally affected environment. Much of this is explained in NUREG-1640, which was just discussed.

In order to better reflect the impacts of the various alternatives, we, also, perform a collective radiation dose estimate of population groups. Different scenarios may associate with different indicator individuals. The collective dose allows a more common denominator for comparison. In effect, we can better account for different materials having different pathways and resulting in different individual

1 doses to different people. Some age groups may be more radio sensitive than others to particular materials.
2 So, in order to smooth out, and we reflect the impact of these materials and the flow, we use a collective
3 dose.
4 Next slide. Other attributes for evaluating impacts to the environment, also, include those
5 to biota, that means other animals, and how land use is affected. This is required by the National
6 Environmental Policy Act. We would include assessing impacts to public use areas, swing sets and
7 playgrounds, wetlands, preserved habitats, endangered species that may be more radio sensitive, etc. Another
8 attribute to consider is the impact of mining and processing of new metals to replace recyclable metals that
9 are instead disposed of in a low level waste site. This involves the incremental contribution to pollution,
10 increase potential for occupational injuries. So, in effect, although it may seem that it wouldn't hurt
11 anybody to take this material and put it in a low level waste facility, the fact that you may have to indulge
12 in greater industrial effort to replace it may have its negative side. So, in effect, we have to consider all of
13 this when we look at the potential effects.
14 We continue with this listing of attributes for health and environmental impacts and point
15 out that the attributes are not cut and dried, because trying to minimize one impact could be offset by the
16 increased potential of another. Some of these impacts may be competing. The value of sending more
17 recyclable material again to a low level waste disposal site may be offset by the increased pollution. There
18 are issues of concern in trying to balance these choices.
19 One of the attributes that is very difficult to quantify, but places a strong role in decision
20 making, is the concept of environmental justice. We don't want to have one sector of society bearing a
21 disproportionate amount of the burden in the allocation of impact. By this, we mean children, who would
22 be more likely to have dental braces that may be made from recyclable material, or low income housing
23 being the recipient of recycled material more so than other houses -- housing. Some of this carries into the
24 reluctance to postpone to the future the difficult decisions for ultimate disposition -- bridge trusses,
25 reentering unrestricted commerce when future demolition terminates and authorized restricted use, for
instance.
There are, also, impacts we have in common with non-radiologically driven decisions:

1 occupational injury, transportation, noise, road construction; so, in effect, the radiation label doesn't make this
2 aspect of consideration unique. Part of what we're looking for today are other impacts that we should
3 consider and we encourage any comments from the public.
4 The other side of the equation that we need to balance for decision making relates to the
5 potential economic and cost benefit considerations associated with various alternatives. For those again who
6 are looking at the issues paper, this is issue two, item (b).
7 Why do we consider economics and cost benefit? Basically, the federal agencies must
8 consider cost benefit in their evaluations of alternatives for major rules. Executive Order 12291, which was
9 mentioned earlier, directs all executive agencies to prepare a regulatory impacts analysis for all major
10 regulatory actions. It should be noted that this executive order directs that action should not be undertaken,
11 unless they result in a positive net value to society.
12 NRC guidance for conducting this cost benefit analysis is documented in a document called
13 NUREG-BR-0058, Regulatory Analysis Guidelines of the NRC. This document goes into some detail
14 addressing the attributes and preparing environmental analyses. Basically, this provides a tool to help
15 balance health, safety, environmental impacts with cost required to achieve or preserve them.
16 We next address some of the economic impacts. I should point out that these items are an
17 aid to help focus our discussion today. They are not meant to be so exhaustive that we wouldn't consider
18 anything else; so, by no means is this all we look at.
19 Radiological surveys will play a role in verifying that permissible levels have been met.
20 The costs include instrumentation, labor, training, analysis of results, survey time. The lower the dose and
21 concentration number, the higher cost associated with the necessary accuracy for the readings. Many of the
22 alternatives will have an economic impact on certain commercial sectors. Scrap dealers and other industries
23 would need to tailor their operations accordingly. If the total prohibition were to take -- were to the
24 ultimate regulatory strategy, then scrap dealers and melters would need to strongly invest in detection
25 technology to preserve their radiological clean bill of health.
The cost impact may affect the manufacturing process, also. This is most keenly observed
in the potential to responding to false contamination alarms or for rejection of materials that melt through

1 scrap and scrap yards. This would entail costs for having the material sent back. In order to minimize
2 liability, scrap dealers, melting operations, and other types of operators and preprocessors will need to weigh
3 the cost associated with more precise and reliable monitoring for both incoming and outgoing portal monitor
4 stations. Again, the metal replacement reduction costs need to be addressed in this analysis.
5 We continue with a list of the potential cost impacts. Depending on the alternative, this
6 would impact the cost of disposal. The tradeoff is whether we send these materials to a public landfill or to
7 a low level waste disposal facility or neither; in effect, recycle it. There are, also, costs for other industries,
8 such as producers of film and certain electronic products, which might have to retool to avoid sensitivity
9 problems.
10 Another concern is the potential for buildup of radioactivity in commerce over time. It's
11 not -- it isn't clear to us, at this point, how we should estimate this. This is part of our study and research
12 effort to try to get a handle on this kind of problem. The socioeconomic impacts have to be weighed, as
13 well, as in any environmental impact statement analysis: jobs lost, created, quality of life in communities,
14 increased noise, traffic accidents, etc. There are the costs that should be considered. We expect to hear
15 suggestions today what they might be.
16 Okay. What is involved in a cost benefit analysis. Now, this is a fairly simple slide.
17 For each alternative, we evaluate potential health, safety, and environmental impacts against costs required to
18 achieve or preserve them; what benefits come from each alternative; what detriments result from each
19 alternative. Effectively, we need to select an alternative, which yields that net positive value to society. If
20 this indicates a rulemaking, what should the rule be: concentration limits, dose limits, etc.? If not, do we
21 go with clarifying or improving existing guidance and continue with the case-by-case approach?
22 This, in effect, ends the formal part of the presentations in session two. I'll turn over the
23 microphone back to the facilitators to begin the discussions of the subjects covered in this session.
24 LESNICK: Thank you, very much. Thank you, gentlemen, for those overview
25 presentations.
As I said at the beginning of this session, the intent here to provide some background, so
you have a sense of what's been studied, what's being studied, what's intended to be looked at. At this stage,

1 it would be very helpful to get some feedback from you all about what is being looked at, what should be
2 looked at. As the NRC goes forward to examine possible alternatives, we're going to look at different
3 implications and study different aspects of this. It would be very helpful to hear from you about, I've heard
4 you said in your environmental study, you're looking at these four things, have you thought about this fifth
5 kind of category, or make sure you look at this aspect, or in the cost analysis. So, that's what we'd like to
6 do for the remainder of this session until lunch and then we'll come back again after lunch, as well.
7 Given that we've had several presentations in a row, may I suggest we take this in maybe
8 three chunks: first, any comments, suggestions about the NUREG-1640 and the soil, first; and second, let's
9 talk about environmental and health; and then thirdly, let's move on to economic and cost and see if that
10 will work. So, let's open it up first for your comments about NUREG-1640 and about, also, the soil
11 analysis.
12 Dan?
13 GUTTMAN: Yeah, thank you.
14 LESNICK: And don't forget to introduce yourself, please, and get close to the microphone.
15 GUTTMAN: Dan Guttman from PEIS. Mr. Meck did a terrific job of explaining how
16 complex this is and why we all are pleased that multimillion dollar contracts are available. And I don't
17 even think that Cliff could have done a complex job like that with that money.
18 But, at the same point, the complexity highlights the essential role of all the judgmental
19 decisions. So, one can sit here and not require a great bit of imagination to know that someone like Mr.
20 Honnicker or the gentlewoman, who spoke out there so eloquently, might have a different view of the
21 judgment factors than someone that had a multimillion dollar interest in getting this as a done deal rule,
22 like SAIC does.
23 And so what would want to look at before one comments thoughtfully on this is what was
24 the scope of work that the NUREG-1640 contract had. And as I think we now know, that's a secret. And
25 I don't know whether it's -- that you're withholding information intentionally or somebody inadvertently
destroyed the document or what it is, but that's not available publicly. So, that's a secret, the scope of work
for the 1640. It's very interesting that we don't have that on the public record.

1 Now, we're told -- we keep on hearing from the staff that this is what staff is doing. But,
2 in fact, the contract -- the 1992 SAIC contract makes plain, it isn't staff. Staff is not the real party in
3 interest here. The terms of the 1992 contract, as we quote in our paper on the SAIC, say that it is SAIC
4 that will submit draft issues, papers, submit resolution of comments, and revise draft issues paper, submit
5 final issues paper, submit draft regulatory options paper, submit final regulatory options paper. So, if we
6 read what is in the public reading room and we assume that SAIC was doing what it was told and got paid
7 for it, and there is no false claim here that this was done, then it looks like that it's this contractor that is
8 doing that, which may have some interest.
9 And the question I have, then, is not so much what your general counsel will decide, as to
10 whether or not this contractor should be slapped on the wrist or perhaps debarred, but what possible reason
11 can you give the public here for withholding any scrap of paper that SAIC produced under this contract,
12 including, to start with, the scope of work, all the options papers and the regulatory papers, which make the
13 public perhaps believe that it's staff, not an interested party that is doing this, and everything else. Until
14 you give us -- is there any reason that you're withholding -- can you tell us now why you won't
15 immediately release this, other than you've lost it, which we can understand; or you can't get it from the
16 contractor, which we know it happens, because they take it and they say it's not the government's, it's not --
17 LESNICK: Dan, let's allow folks to respond.
18 GUTTMAN: Well, the question is: where is all the documentation? Why haven't you
19 put in the public reading room the basic contract that is supposed to, by your own regulations, be there?
20 Where is the options papers they've drafted? Why can't you make those public?
21 LESNICK: Don, did you want to comment?
22 COOL: Well, you've made a lot of statements there. Let me just answer is quickly, two
23 items. One, I have asked the folks in our Office of Research, who had that contract, to assure that those
24 documents are in the public document room. Statements of work are nominally made public and I quite
25 frankly do not know why that isn't already available to you.
LESNICK: Bob, do you have anything you want to add?
MECK: Yeah, just briefly. The short answer to your question is that the scope of work

1 is to provide technical assistance to the staff. The staff has to take responsibility and we're well aware that
2 we can't have contractors doing our work. And so the second part of the answer is that the entire files for
3 that contract have been turned over to OGC and I think your requests have already been forwarded to
4 them. And I've been out of the office; I don't personally know what the hold up is. But, the files are
5 complete and they should be -- you know, able to get to them, too.
6 GUTTMAN: Well, I'm entitled to respond. This is not --
7 LESNICK: Briefly, Dan.
8 GUTTMAN: This is not an ethical, legal matter. This is a public participation. You've
9 got people here. I understand that they did the draft and the final regulatory options paper. That's what it
10 says in the signed contract. That's what they get paid for. We're entitled, as taxpayers, to see it. It's not a
11 matter of turning it over to OGC. You are dealing with us here. They may or may not, OGC, want to
12 fine or sanction SAIC. But, we, in this process, are entitled to see that, irregardless of any conflict issue.
13 And what I want to know has that not been made public, the options papers they've drafted and the
14 regulatory issues papers, which were done by a company that apparently has --
15 LESNICK: Let's get another comment from Don and then I'm going to move on and take
16 other cards.
17 COOL: Mr. Guttman, as I indicated a minute ago, I have asked to make sure that that is
18 made public. However, the staff is ultimately responsible for preparing its recommendations to the
19 Commission. It uses contractors to provide input to those documents. That is the document you wish to see.
20 We will provide it for you. You may agree or not agree with the issues in the paper; however, those are
21 the issues that are on the table and the Commission is looking for the considered input on how to proceed
22 with those issues.
23 GUTTMAN: Is that the same, Mr. Cool, that we have now gotten the statement, you will
24 provide us with materials provided by SAIC? I understand that's what you said, is that correct, you will
25 provide us with the regulatory options and the issues paper?
LESNICK: Dan, I need to move on. I think you've got the answer --
GUTTMAN: No, I want to know.

1 LESNICK: -- twice.

2 GUTTMAN: What's the answer to the question? Will you make all of these things

3 public that SAIC provided, yes or no?

4 COOL: Yes.

5 GUTTMAN: Thank you.

6 LESNICK: Can we move on. Paul Genoa, please, and then we'll go to Mike Mattia, and

7 then to Cliff.

8 GENOA: Paul Genoa with NAI. And I wanted to add --

9 LESNICK: Can you get closer to the microphone, please?

10 GENOA: I wanted to add some perspective from the international community. As was

11 stated earlier, the IAEA, as well as the European Union and other individual countries, are all looking at

12 the same issue: what is an appropriate criteria to determine when materials from nuclear facilities can be

13 released and when do they need to be controlled. And each country has their radiation experts and their

14 economists and others developing similar models and regulatory technical basis documents; all have used the

15 same types of an approach, as in 1640. They all are very smart people, looking at complex problems, have

16 come up with very credible results. But, what is understood in international debate on this, in international

17 symposium, that when you get down to extremely low levels and you go below those levels, that the

18 uncertainty among these deliberations increases and that it is not unexpected, when you get down to levels

19 that are a small fraction of natural background, that the different assumptions put into the models will

20 change the results significantly, perhaps even an order of magnitude.

21 And so when you see criteria such as NUREG-1640 for a certain isotope under a certain

22 condition and you look at what the Germans do or you look at what the French do or you look at what

23 other countries do, you will see that there are some changes in the actual activity, but that those changes are

24 well within the range of uncertainty in those models. The bottom line is that it may not be so important as

25 to the exact concentration number you select, but it may be more important that within the range of

numbers found by international experts in studying this, that you select a reasonable implementable number

across the board, so that there is consistency with the international community. And I just wanted to offer

1 that perspective.

2 LESNICK: Thank you. Let's go to Mike Mattia. Mike, about 1640, technical basis,

3 soil.

4 MATTIA: There's a section in 1640, specifically 2-5 in the summary, a paragraph that

5 is a four-part paragraph and elicits four questions. The key sentence is residual radioactivity in consumer

6 products rarely yields any critical groups, such as were explained, and the four reasons why, according to this

7 paragraph, that consumer products rarely yield critical groups, one is because of radioactive decay over time.

8 And the question arises, when we're talking about isotopes that have a thousand plus years of decay, is this

9 a valid argument?

10 The second statement is that generally mixing, taking small quantities of release material

11 and mixing it with large quantities of uncontaminated material, will dilute what comes out of the mix.

12 And I guess my question is, I haven't heard of studies that have validated this, except for computer models.

13 The third is the issue of partitioning, since it's assumed that many of the isotopes will go

14 to the slag or the to the flue dust, then, we're not talking about consumer product exposure. My question is,

15 in today's scientific processing, slag and flue dust that comes from mill generally isn't considered an end

16 product. There is still some refining that is done to remove the material or the metals. Some of this

17 material, such as slag, can be used in road beds and for other processes. But, then, there's, also, the issue of

18 disposal, where if the slag or the flue dust does have a significant concentration, there's a disposal problem.

19 So, now, we have an exposure potential to individuals involved in the handling and the disposal.

20 And the final of the four I have to read. It says, "the relatively small size of consumer

21 products limits the amount of radioactivity to which any individual could be exposed in these scenarios."

22 Now, I absolutely do not understand the validation or the justification for that statement.

23 LESNICK: Bob, did you get all four?

24 MECK: I think so. The answers to your questions reflect the complexity of the issues.

25 Certainly for long lived radio nuclides, those with long half lives, decay is not an issue here. But --

STINSON: Bob, why don't you just stick to the question --

MECK: Okay. First of all, my name is Bob Meck -- the transcriber is over there

1 looking at me. The first question was, what about decay and why isn't -- or how does decay factor in to
2 low doses or low conversion factors for consumer products, and that statement applies only to those radio
3 nuclides that do have short half lives. For those that have long half lives, it -- that wasn't a factor.
4 The second question, Mike -- the second statement?
5 LESNICK: Mixing.
6 MECK: Mixing. The approach that we took was to model U.S. industry, as we
7 understand it and as it is in existence today. And this is reflects somewhat to Dan Guttman's previous
8 comment, and that is what -- when we had to make judgments about the processes that were going on and of
9 general commerce, we went to industry and if it took a personal communication, those are cited in the
10 document. So, that's where that information came from. And so, our understanding was that -- of the
11 general practice, if something goes to a scrap yard, it's likely to get mixed, depending upon the steel
12 manufacturer's specifications for that scrap yard and particular load. And so, we included mixing with
13 scrap, say, from other sources, and so, that, in itself, would tend to dilute the radio -- the concentration of
14 radioactivity.
15 The next are -- had to do with --
16 LESNICK: Partitioning, slags --
17 MECK: -- partitioning, thank you. The partitioning is a physical chemical reaction.
18 We follow the physics and chemistry of the form of the radioactivity and where would it likely go. And,
19 indeed, we did consider the dust, the slag, and so on, for byproducts that were, also, used, and followed
20 scenarios about what were the likely uses of those byproducts, the dust, and did follow those on out to, say,
21 road bed worker or a landfill disposal -- not a person. And so, we tried to chase those byproducts down, as
22 well.
23 And the fourth one --
24 LESNICK: The fourth one, you'll have to repeat.
25 MECK: -- was -- oh, the size. The consumer products, in general, are not large massive
objects, like a huge industrial lathe or a battleship or something like that. And if the criterion for release
is limiting the concentration in the first place, then the amount of radioactivity in any one item is -- has a

1 total limit. And if you have, you know, something that's really huge, tons -- you know, tons and tons, then
2 the total radioactivity in that is going to be greater, than if it were in an household appliance, for example.
3 Okay?
4 LESNICK: Thank you, very much. Cliff, I want to get to you, but I -- since the
5 microphone is already down at the end, Craig, did you put your card down or do you still have a comment?
6 CONKLIN: I put it down for now.
7 LESNICK: Okay; great. Let's come over to Cliff and then we'll come over to Jazz, on
8 this side of the room.
9 HONNICKER: Okay. You know, I really -- there are so many things going on inside
10 me right now. There's such a richness of issues right here, that it's very hard to untangle them all and
11 know exactly where to begin. But, I would assume that a scientist looking at all of this would say that we
12 have to go back to the very first variables, if you want, the variables that go into the equation. And if the
13 variables that go into the equation are incomplete or wrong, then you can sit here all day long talking
14 about models and theories and this number and that number -- but if the basic variables that went into the
15 equation are wrong, then the whole thing is moot. It doesn't mean anything.
16 Now, I have talked to Mr. Guttman maybe twice this year for about a total of five
17 minutes. I knew that he was involved in these issues, but, I -- basically, it was, you know, maybe two
18 minutes I've talked to him. I've not really talked to him at all about this whole process that's going on
19 right now. But, it's interesting, and I've got to say that I respect this man deeply. He was the executive
20 director, chosen by the President of the United States, to head a presidential advisory committee on human
21 radiation experiments a few years ago, and I deeply respect both his intellect and his tenacity.
22 GUTTMAN: See, that's what I told Cliff, in the two minutes, make sure he mentioned
23 that.
24 HONNICKER: No; no, you didn't. I've been invited to the San Francisco meeting, the
25 Atlanta meeting, and this meeting. I'm incredibly busy on trying to help the affected workers, who have
been poisoned in the ongoing process of what's going on right now, and so this is the only meeting that I
could come to. It's very important that I try to get back to the fundamental equation and the fundamental

1 equation is that you have to have all the information at the front end, in order to make a reasoned real
2 scientific judgment of whether or not that NUREG-1600 is a valid document.
3 Now, SAIC, there's a big building about a quarter mile from the DOE federal building
4 in Oak Ridge and about a five-minute drive to K-25. And my reading of NUREG-1640, I said, you
5 know, there's all these assumptions in here, but I don't think that the gentleman who wrote this took the
6 five-minute drive down to K-25, to look at the real working conditions that these folks are exposed to. I
7 don't think that they went down and they looked at the nuclear powder that we're talking about and made
8 any kind of judgment of the classified alloys that are in that material, of the classified chemicals that are in
9 that material, of the radio nuclides that are in that material, and looked at the synergistic affects. The
10 synergistic affects of that material is going to put it into a whole new ballpark. I don't think the people at
11 SAIC went down there and looked at what the real working conditions are that the people have to deal
12 with.
13 Now, our working with nuclear whistle blowers in those facilities, where a worker comes
14 across and says, hey, they're not following the EPA regs, or they're not following DOE regs and handling
15 materials safely, and that worker is taken out of his job, stripped of his job, taken and put in a toxic waste
16 room and made to sit there for six months in a toxic waste room, at a desk, no job, no telephone, no job
17 duties, and as punishment for bucking the system, when the system goes this way and he says we're not
18 complying with the regs. You know, that sounds kind of crazy, but that was actually the first environmental
19 whistle blower suit that we filed.
20 LESNICK: Cliff, let me make a suggestion.
21 HONNICKER: Now, let me finish; let me -- please, please, let me finish.
22 LESNICK: I'm going to let you finish. But, I urge you to think about, given your
23 experience and what you're doing on the ground, and given that they're taking comments on this --
24 HONNICKER: I would like to --
25 LESNICK: -- you are able to pursue that.
HONNICKER: -- make a -- I came ready to make a presentation. At some point later
in the day, I'd like to do that. But, that was the first environmental whistle blower lawsuit that was ever

1 filed in Oak Ridge, the scenario I just told you, and DOE fought it tooth and nail and it went for years
2 and I can tell you all about it. But, that's the context. That's the real political, sociological, scientific
3 context that we're working in.
4 Now, Mr. Guttman has asked you, I want the very beginning of the equation, which is:
5 what is it -- who is doing this and what are their motivations for doing the study in the particular way
6 that they've done it and what would be the pressures mitigating against those people from bringing in all of
7 the variables, okay? I had that same question and I wrote you guys on October 7th, to Chip Cameron. I
8 wrote him and I said, I don't --
9 LESNICK: Cliff, I need you to press on with the points on the table.
10 HONNICKER: Okay.
11 LESNICK: There are other folks that want to speak.
12 HONNICKER: I wrote Chip Cameron on October 7th and I said from my participation
13 in this process, I need the marching orders. I need to find out who wrote this report. I need to find out
14 what were the contracts that said why are they writing this report; what are their marching orders from the
15 NRC, in order to make a report clear for the public to understand. I would like those papers. And I said
16 for my participation, I have to have that. You guys have not responded with one single piece of paper.
17 So, is this process that we're sitting here right now, is this a legitimate process or is this a
18 pro forma process for which you guys march through your own regulatory process? Do you really want the
19 answer or are we just here to fulfill your obligation to say that you've had your public meetings; you've had
20 your public comment; thank you, let's move on?
21 LESNICK: Thanks, Cliff. Thanks for you comments. Jas, we're going to move to you
22 and to Susan.
23 DERGUN: Okay. This is Jas Dergun. I think my comments are probably not in the
24 same thread as Cliff, but more in line with Paul Genoa's thread. I have three brief comments on this; one
25 for Bob Meck and Giorgio, both. I have not so far seen ANSI standard mentioned. So, I'd like to hear
comments on that, because it's already out, ANSI and 13.12. As you know, Bill Kennedy made a very
strong case for it in the San Francisco meeting. And I'd like to say, as 1640 is still a draft document, are

1 you considering other input into it? I'd like to see your thoughts on that. Are you going to include
2 something, which is from a pretty -- organization out there.
3 Number two, I think the comment is related to something -- echoing what Paul Genoa
4 said, that when you talk about these type of levels, basic uncertainties in any model, it doesn't matter what
5 you use, whether it's res, rad, DOD, or any other pathways analysis models, when you talk about changing
6 some of the critical parameters, you can change these values quite substantially. So, that has to be
7 recognized and that has to be communicated, too. Then, maybe, I guess one other things that we have
8 difficulty in reaching a rapport with the public, that we don't seem to communicate that well; that when
9 we're talking about those type of levels, one really knows what they really mean.
10 The third comment is basically related to -- I've heard you mention in the presentation,
11 some of the European and international criteria. They all have -- pretty well a lot of the countries have
12 come out and fixed some kind of levels. I think we are still far removed from it. We are shying away
13 from it. 1640, for example, does that dose conversion factor, but doesn't give you any real dose value,
14 which we should have as a target. The European Community has already come out with 10 microsievert per
15 year, which is one millirem. But one thing, which I would, also, like to elaborate on, that they do make a
16 distinction between when it comes to recycling; they make a distinction between recycling in the nuclear
17 field -- in the nuclear industry and the general trade. So, that's maybe something to look into.
18 And, also, I have a report here from a German radiological commission, Commission on
19 Radiological Protection. The values they have given out, which are being applied, and I've seen in the
20 literature a couple of papers already applying this to nuclear science, they have distinguished, on the mass
21 based standards levels, four different scenarios: like unconditional values are different from the clearance for
22 disposal and they are different, also, from clearance for metal recycling.
23 I'll give you an example. For example, Cobalt 60, these are units now in bacarrels.
24 LESNICK: Briefly, please.
25 DERGUN: Yeah. Unconditional is .1 bacarrel per gram, but for disposal it is four
bacarrel per gram and it is .6 for the metal recycling. You may need to look into it, because, in some says,
it makes sense, because for disposal, obviously, you have an engineer facility or a closed cap on it and the

1 risk is going to be different.

2 LESNICK: Let me ask before anyone responds, Jas, some of the issues I think you've

3 raised, and correct me if I'm wrong NRC staff, some of them, I think, might relate to subsequent discussions

4 about alternatives; for example, ANSI and I think some of the international standards. There may have

5 been other components of your comments that do relate to some of the technical basis of the NUREG and I

6 guess I would ask Bob or Don to -- if they care to comment on that, if they saw that. Otherwise, some of

7 that, Jas, I think let's hold until we're getting into kind of preferred alternatives, people's suggested

8 alternatives.

9 Bob or Don, did you hear anything in there that you want to comment on, specifically to

10 1640 and the technical basis?

11 MECK: This is Bob Meck. I just have a brief comment about the sensitive of parameters

12 and the choices of that. I failed to mention that we've been working with EPA over the last five years and

13 comparison is their view of industry in the U.S., the same view that we have. And we've, also, included

14 DOE in these discussions. So, we've made quite an effort to be careful about those and make sure that they

15 were representing what we believed to be representing. I can add more to that one-on one.

16 LESNICK: Don, did you have anything you want to add or I'll move on?

17 [No response.]

18 LESNICK: Okay. Let's take a few more comments about NUREG and about soil and

19 then we're going to take our lunch break. And we're going to come back after lunch and continue our

20 conversation and move on to environmental health and cost considerations. Susan?

21 LANDAHL: Susan Landahl, Commonwealth Edison. Regarding the NUREG-1640, my

22 first issue is that the pathway analysis, as was pointed out, or the validity of the pathway analysis is, of

23 course, critical. And I understand the approach. I approve the approach, as far as being very conservative.

24 I want to make sure we don't lose sight of the fact that this approach does, also, mean that the vast

25 majority of the population is not in the critical group and gets a dose of zero. So, the entire approach is

very conservative.

My other issue is just that, while I appreciate that it's a reasonable approach, when I look

1 at all the data, my concern is that the end result could be something that would be too complicated to
2 practically implement, at least in my business, and one of the reasons that we are here today is the issue of
3 inconsistency in the application of what exists today for regulation. We spend a great deal of time
4 attempting to release material to prove that it has no licensable material; and as a result, we're putting
5 material into the waste stream just because we can't prove that it doesn't have any license material in it.
6 So, I would just offer that whatever rulemaking, if rulemaking does result from this, it needs to be in a
7 form that can be simply and consistently applied and evaluated, you know, by the licensees and by outside
8 agencies, in a consistent manner.
9 LESNICK: Thank you, Susan. Let's go to Tony, Peter, and if we can do this, Alice, and
10 then we'll take our break for lunch. So, you can move with some vigor.
11 LaMASTRA: Tony LaMastra. I have detailed comments that I'm going to submit on
12 NUREG-1640, where it looks at the facts that are presented and, also, some of the assumptions. But, one of
13 the things I'd like to make as a general comment is that the authors do not always use commonly used
14 terminology and when that happens, it makes it difficult for affected industries to really do a review of the
15 -- to determine what the impact is. So, I would recommend that when you come out with your final
16 document, that the authors essentially be asked to look at what the terminology that's used by the recycling
17 industry, by the metals industry is, and try to restrict their comments or to basically use that terminology, so
18 that we can do a better evaluation of it.
19 GIORGIO: Could you give us just an example?
20 LaMASTRA: Yeah. They use terms like "refiners" or a "refinery," and it's difficult to
21 tell whether that speaks of a single furnace or an entire plant. That's just one right now that comes off the
22 top of my head.
23 LESNICK: Let's move on. Bob, did you want to -- I'm sorry.
24 MECK: Yes. It would be very helpful in your formal comments to include as many
25 specific examples as you can and we very much appreciate getting that kind of comment.
LaMASTRA: Basically, I'll break it down by section and give you the section reference.
LESNICK: Obviously, everyone is encouraged to please not only comment publicly like

1 this, but to the extent you can, please put it down in writing, as well. I think that will be very helpful to
2 the agency. Peter, you've been waiting very patiently. Can we get a microphone to him and get close to
3 the mic, please.
4 HERNANDEZ: Peter Hernandez. I had a question about the impact analysis that was
5 done, health, societal, cost benefit, and I can save it for after lunch.
6 LESNICK: Yeah, can we do that, Peter, when we focus more in on that? From the
7 Republic of Texas?
8 [Laughter.]
9 ROGERS: With respect to NUREG-1640 and the fact that you have not yet looked at
10 soils, you might, also, want to consider looking at other demolition debris that are not suitable for recycling.
11 You should model low concentration, high volume in landfills, as at a very large commercial landfill that
12 receives high volumes of released material. You should consider modeling the long-term implications of the
13 hazardous and the non-hazardous landfills separately, because they have different liner requirements. You
14 should look at the formation and collection of leachate and, in particular, it's the effect it has on the
15 workers at these non-radiological facilities. You should look at the implications of land spreading, or some
16 people call it land farming. You might want to consider if this soil or other demolition debris meets these
17 very low release criteria, that they might want to be left in place, instead of being shipped across the
18 country. And then, lastly, you should consider defining clearly dilution in your rules and put a clear
19 prohibition, if you believe that to be appropriate in the rules.
20 LESNICK: Thanks, Alice. Mike Mattia, we'll hear from you and then we will take our
21 lunch break.
22 MATTIA: I'd like to go back to the comment that I made on that section in
23 NUREG-1640 that deals with the issue of consumer products. That doesn't mean that there is concern over
24 the exposure in steel mills and scrap recycling industries from this material coming in, you know, residual
25 exposure, exposure to equipment. But, the issue of consumer products literally is, I think, the driving factor,
because the material that is being proposed to be released has to go somewhere, if it's not going to landfill.
And it's going to go to companies, like scrap recyclers and steel mills, who are going to convert it into a

1 product that is going to become a consumer product. And by trying to address the issue in one paragraph
2 that I think has some flows -- some significant flaws, is walking away from the majority of the concerns that
3 we have heard over these meetings, from consumer groups, from the general public, from those individuals
4 who are saying I'm concerned about the frying pan and the dental filling. It's not addressing their concerns.
5 You know, I go back to the four points, the concept that it's not a problem, but that
6 doesn't address the long-term decay. So, we don't talk about the long-term decay and getting into consumer
7 products.
8 There is an issue of mixing, and, again, the question is: what kind of modeling was done.
9 If we're talking about a pound of this material going into 100 ton melt, mixing dilution might make
10 sense. But, what if we're talking about 10 tons of this material in 100 ton melt. Does that change the
11 equation of what's going to come out as a consumer product?
12 Again, the concept of partitioning, I don't think that the issue of this material, as it's
13 partitioned, if it truly becomes partitioned, has been addressed; nor has the concept that much of this
14 partitioned material, such as slag and flue dust, will continue to be reused and refined. And it definitely
15 doesn't raise the issue of the partitioning becoming a problem, such as flue dust not being able to be
16 landfill, because of the concentration of radioactive material is too high and it's a mixed waste and
17 prohibited for landfill by the EPA.
18 And the final sentence, the fact that consumer products are small; therefore, they don't pose
19 an issue skirts the concept of what if you do have 10 tons of contaminated nickel that goes into a 50 ton
20 melt. If we're only talking about a small -- does that dilution really matter, if we're talking about a small
21 consumer product that will have a high concentration.
22 I don't think that NUREG-1640 has addressed what is truly the most potent issue here,
23 and that is the consumer products, the consumer perception, what is the hazards that could occur, when this
24 material is released in larger quantities.
25 LESNICK: Thanks, Mike. I think Bob wanted to make a very quick comment before we
take our break.
MECK: Right. Remember NUREG-1640 is just a tool for conversation factor. But the

1 philosophy that we've talked about is whoever is in this critical group gets protected to some level; and if
2 that happens to be a consumer, then they get protected to that level. So, they would be protected, just like
3 the truck driver would be protected. And so, in that sense, you know, that's the philosophy of the
4 application of the results. But, that application of the results of NUREG-1640 is a Commission decision
5 and not the purpose of this document.
6 LESNICK: Okay. Cliff, quickly.
7 HONNICKER: I have 30 seconds and then -- now, thank you. Did you, in 1640, take
8 into consideration the other alloys that are mixed in with the nickel powder, the several million pounds of
9 nickel powder from K-25, the chemicals that are mixed in with it, and the other radio nuclides, besides the
10 ones that may be listed that have been recently uncovered in this billion dollar lawsuit down in Paducah,
11 that there are other contaminants in there that were not prior -- previously disclosed to people? Did you
12 take that into consideration, in looking at the effect on the first concentric circle of exposure, the workers?
13 MECK: NUREG-1640 analyzed steel, cooper, aluminum, and concrete, and in the context
14 of the processes that general commerce uses to process those. And to the extent that there are various
15 ferrous alloys, yes, that was taken into account. We did not analyze nickel. And I would just simply have
16 to look -- or look with you on the list of radio nuclides that we analyzed and see if those are included. So,
17 that's the short answer.
18 HONNICKER: Well, that -- I didn't mean to give you a trick question, but that is --
19 you can't, unless you have a Q clearance, because that material is -- millions and millions of pounds of that
20 material is in the hopper to be recycled, if they're not melting it already down, and the substances that are
21 contained within in are classified. So for you guys to do an assessment of what the health impact is, you've
22 got to know. And we don't know and the workers don't know.
23 LESNICK: It sounds like you've got a recommendation, maybe.
24 MECK: Yeah, I want to clarify that this is an NRC rulemaking, okay, and --
25 GUTTMAN: But, actually, Cliff has an excellent point. How are you doing deal with
the classified nature of a lot -- as an NRC rulemaking --
LESNICK: Can you get closer to the mic for a second, Dan, and then we're --

1 GUTTMAN: Dan Guttman. It's an NRC rulemaking; but it's been pointed out one way
2 or the other, we're talking DOE waste and it is pretty well known that a lot -- the nickel, in particular, is
3 highly classified. And as I said, BNFL, which is theoretically going to dump it into the public's, you know,
4 frying pans, doesn't know what's in it. That's what they testified. Do you guys know what is in it; and, if
5 not, how -- you know, I mean, how do we know that everything is covered? And I understand you didn't
6 study nickel, but all the other stuff that is classified.
7 LESNICK: Let me -- Barb is going to make a comment about this, because this is an
8 important issue, about the relationship with DOE, NRC, and these activities. Barb, before I go to that, I
9 want to just say, as we break for lunch, folks, we're going to come back. Thank you for the conversation
10 about NUREG-1640 and all. This has been extremely helpful, I think, to the agency.
11 Barb is going to talk a little bit about NRC, DOE interface here. But, when we come
12 back, we're going to continue on our discussion about health and environment and about economic costs, as
13 well. So, we're going to continue this session two for a while longer, when you come back from lunch; so,
14 keep that in mind. Barb?
15 STINSON: Yeah. And on the continuation of this discussion, keep in mind we're talking
16 about future analysis and, so, there will be recommendations that you all can make to the NRC that they
17 can factor in to the development of their future analysis; not that they can't take a lot of that information
18 in constructing, you know, future analysis with gaps, as you're making recommendations on the
19 NUREG-1640 analysis.
20 I just wanted to lay something clearly on the table, that I think we've circled around so
21 many times in these discussions, from the past workshops, and we're there again for this workshop, and that
22 is the relationship between DOE material and NRC licensees. And it's a bit of a perspective on it and
23 then a question for all of you all.
24 I mean, I think what we're hearing is: (a) you hear from DOE, they are going to either
25 use as guidance or adopt whatever the NRC does with regard to rulemaking on this issue. So, they're
paying a lot of attention. It's clearly going to have impact at DOE facilities. That's on the table.
On the one hand, you have, I think, the environmental community and the worker

1 community, the unions, very concerned about protection of the workers in the environment. And they are
2 going to be looking to the NRC -- they're going to be looking for any avenue they can find to increase the
3 protection for workers in the environment, and that includes placing pressure on NRC to be protective and
4 to influence the future DOE process. I think that's one force that we're seeing.
5 On the other hand, you have NRC, who has NRC licensed facilities. They're not
6 responsible directly for DOE facilities and the material that is utilized at DOE and you're not going to see
7 the NRC taking responsibility for DOE past actions and problems that have occurred. I mean, I'm trying
8 to just kind of clearly articulate some of the differences here, so -- and maybe it's not very clear.
9 So, these two forces are at play at the table every time we get into the discussion. And,
10 you know, really both forces and both perspectives are reasonable. And the challenge I put to you all
11 around this table is to try to find, if you can, comments and questions that both provide the kind of
12 protection that people are seeking and fall into the jurisdiction of the NRC and to -- I just want to lay
13 this question out, Dan. I don't want --
14 GUTTMAN: Yeah, but I think you just contradicted the --
15 STINSON: -- I don't want to have further conversations --
16 GUTTMAN: -- you contradicted the NRC's statement.
17 STINSON: Dan --
18 GUTTMAN: You contradicted directly --
19 STINSON: That's fine, and we'll hear -- we should hear from you and hear from others.
20 I just want to put that question on the table for consideration.
21 GUTTMAN: Excuse me --
22 STINSON: And we're going to take our lunch break -- Dan, we're going to take our
23 lunch break --
24 GUTTMAN: No, wait a second, Barbara.
25 STINSON: -- and allow people to --
GUTTMAN: The NRC has told Congressman -- and this is Dan Guttman. The NRC has
told everybody --

1 STINSON: No, Dan, I'm going to cut you off, because --

2 GUTTMAN: Barbara, you're making a statement that is a directly contradictory

3 statement. If the NRC has no jurisdiction, then that Tennessee license is unlawful.

4 STINSON: Well, that's a question that is up for debate.

5 GUTTMAN: That's an unlawful license and that's what I will take back.

6 STINSON: At this time -- at this time, we're going to --

7 GUTTMAN: We will take back that you have just declared the Tennessee license

8 unlawful and you can think about it over lunch.

9 STINSON: Okay. We will think about it over lunch.

10 [Whereupon, at 12:13 p.m., the workshop was recessed, to reconvene later, this same day.]

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

2 [1:24 p.m.]

3 LESNICK: Gentlemen, let's continue our discussion about studies. We are going to move
4 on to a discussion about environmental and health assessments and studies.

5 Giorgio provided an overview of the kinds of categories of topics that NRC would intend
6 to pursue. We want to make sure that you have some input into particular areas you think that they might
7 want to emphasize or things that weren't mentioned that you think they ought to take under consideration of
8 evaluating.

9 And let's just talk about environment and health now for the moment. Then later on we
10 will move on to economics, Peter. Okay. Or do you have something on environment, Peter? Okay. Let's
11 go to Peter Hernandez.

12 HERNANDEZ: Peter Hernandez. I was curious if the analysis that NRC is doing on
13 potential impact relating to -- and it was broader than just health and safety, but the economics and that,
14 including the potentially adverse impact on affected recycling industries, or industries, metals industries that
15 recycle metals, including potential job loss within those industries. And, if not, why not?

16 GNUGNOLI: We basically have not begun doing the cost benefit analysis. Part of our
17 efforts right now in the studies is to pull together what we would need to do, what kind of information
18 would need to be gathered. A lot of it, a lot of information we are not sure is really collated and
19 available, easily available at this moment. So we have a number of folks helping us try to go out and
20 query and find that kind of information.

21 It would be an initial blush that we would try to look at benefits and costs of any nature
22 resulting from these decisions, whether it would be a direct impact on a recycler or a melter, or people who
23 might be exposed to materials coming from them, as well as the sort of once removed kind of impact, like
24 the film industry, how it might affect them. At first blush, you wouldn't think -- they wouldn't feel that
25 they were being treated fairly. We had nothing to do with it. All of a sudden we have to retool our film
production and stuff.

So we don't, at this point, where to draw the boundaries and constraints on it. But we

1 are trying to keep an open mind about what to do with that.

2 HERNANDEZ: Peter Hernandez. Thank you. The reason I asked is, of course, we

3 would appreciate you considering those factors on affected industries. And the steel industry in the United

4 States, sales are about $40 billion a year. If just 1 percent of the public decides it is going to deselect our

5 material because of a perceived concern about radiation, that would translate to 1 percent of sales, which is

6 a significant amount and should be part of the cost benefit equation we believe.

7 LESNICK: Thank you, Peter. I see a card. Mike Mattia.

8 MATTIA: Just a basic question on Reg. Guide -- I mean NUREG-1640 that I have

9 asked in the past, and that is, is there the potential of equating dose for release, a dose, to what the material

10 may measure if you were to put a detector to it? This is an issue that has come up in the last several

11 sessions, that if you release material based on a dose and that material, when it got to a detector, would set

12 the detector off, it might bring up a whole new school of problems where it would be rejected. Is there a

13 way, in this document, or does the document exist that equate a dose of released material to what that

14 material would read if you put a detector to it?

15 HUFFERT: Tony Huffert, NRC. We are working on that right now, and this is

16 implementation consideration that would go into a Regulatory Guide if we were to do a rulemaking. We

17 are working with two contractors to help answer this question. NUREG-1640 does not answer your

18 question, it simply gives the concentration of the radioactive in and around the material and translating it

19 to dose.

20 You are asking a question about measurability, and that is independent of 1640, so we

21 are currently looking at that. And we are looking at the impact that might occur if materials were released

22 at the NUREG-1640 levels and would they set off alarms at scrap yards or landfills? And that is a

23 practicality that we have to consider.

24 LESNICK: So it sounds like that will be forthcoming.

25 Let me open it for your comments and observations, not just about environment and

health, but also the economic and cost considerations, George, if you don't mind, because it sounds like some

people want to go back and forth between them. Kristen.

1 ERICKSON: Well, I would like to address the combination of these issues in a sort of
2 bigger picture way. First of all, looking at the capabilities we have, and I know this jumps ahead into
3 surveys and measurements, but it is all related, the capability we have to determine the amount, first of all,
4 of the isotope, its energy, the amount right down to 10 to the minus 10th, 12, 15th, microcuries per gram
5 levels, we do this in our institution, we do it routinely.
6 Then to be able -- there is technology that is done and has been used for many, many
7 years, very well, to actually do in situ measurements of radioactivity, either in soil, water or a big piece of
8 equipment. We have sophisticated dose calculation equations and abilities that we can take, and we have
9 done this, again, a very complex arrangement of metal and parts.
10 For example, our cyclotron has detectors that are bigger than a train engine, four stories
11 tall. To be able to take an instrument and evaluate what is in there, and calculate them, what isotopes,
12 what levels, you are able to translate that to doses. That is part of what -- how physics does on the higher
13 end. It is so accurate that you can look inside, like we have done, a big drum full of heavy lead and
14 metal, and all kinds of metals, and determined what elements are there, what ones are activated into
15 radiation, how much of each kind. Well, does that translate into DPMs and microcuries, not just what I
16 count?
17 And then you can take that and translate it over to risk. This is science that is there,
18 science that has been used. And taking that one step further, I recommend and suggest that this whole
19 process needs to go and use a lot of data that we already have. We have been using for many, many years,
20 limits for air and limits for water, and we have 30, 40, 50 years' worth of data for those releases. Many
21 populations of people over many years, many scenarios, many uses, many chemical forms and many pathways.
22 That data is already there. That can be used to start determining the risk and applying
23 that towards a solid. There is very little difference if I put this liquid into the water and it goes to the
24 sewer, and, ultimately, is in soil, which is ultimately in a plant or an animal, and then finally in us. This
25 is the same kind of scenario that we do and know how to do in radiation safety and health physics,
environmental risk, biological effects, that is what our jobs are really about. And this is certainly able to
be done and can be done.

1 So I think that, as I say, in the bigger picture, people need to keep that in mind and
2 also use that data that is already there.
3 LESNICK: That is helpful, Kristen. And, also, I guess, as you and others leave this
4 meeting, and you might reflect upon what else you think would be helpful for the NRC to look into, further
5 studies, analyses, I think they would probably welcome as specific recommendations as you would like to
6 offer, either about categories or past and existing studies that exist. I think that would be helpful to the
7 agency.
8 Can we move on? Paul, particular suggestions about studies, either environment and
9 health or economics, cost side of this?
10 GENOA: Paul Genoa, NEI. I think what I was trying to capture, actually, --
11 LESNICK: Can you get closer to the mike, please?
12 GENOA: Yes. Paul Genoa with NEI. And my comment has to do with -- in response
13 to some of the issues brought by Peter regarding impacts on not just the environment, but on businesses,
14 companies and so forth. And I am trying to differentiate between a real measurable impact such as setting
15 off a false positive at a landfill or a metal detector at a scrap metal dealer, and the impact of a perceived
16 stigma associated with a product that would cause harm to an industry. Both are real, and I think how one
17 deals with them maybe different.
18 In a real, measurable impact, if the NRC were to move forward in the rulemaking and
19 were aware that there would be a real impact on an industry such as the sensitive film industry or whatever,
20 those impacts I believe have to be avoided or mitigated.
21 When we talk about perception of the public, that is a difficult challenge that you are
22 faced with, and I am a little empathetic, and I am empathetic with the industries that could be affected
23 because I am one. But I think that the NRC has huge potential to influence that perception by the way it
24 conducts the rulemaking process and in its activities in advocating, unequivocally, the safety of an
25 determination they ultimately make.
It is absolutely critical that if you move forward with any standard for the release of this
material that it is then communicated to the public in terms with there is no uncertainty that that standard

1 is protective and that you are absolutely behind that, and are willing to say so every time it is questioned.
2 Without having that type of unequivocal support for the standards you set, the public can reasonably be
3 concerned, and the public trust and confidence can be undermined and industries can be harmed. And I
4 think you need to be very serious about the soft side of the science when you proceed with your technical
5 regulatory evaluations. Thank you.
6 LESNICK: Thanks, Paul. Jim, I know your card has been up, but I would like to try
7 and get in Charles Wilk from Portland Cement Association, an industry that hasn't, I don't think,
8 participated as of yet. Maybe you have some concrete suggestions about impact?
9 [Laughter.]
10 LESNICK: I couldn't resist that, I apologize.
11 WILK: Yes, I am Charles Wilk with the Portland Cement Association. What I am
12 about to say is probably really an echoing of what Mr. Hernandez had to say, but to really add our voice
13 to this. What the NRC does could have a profound effect on a number of different industries, and one of
14 those is the economic impact it might have, these rules might have on the recipients of this material comes
15 from decommissioning of various facilities.
16 I think it would be important for the NRC to conduct some sort of economic impact on
17 the market, detriment to the market of what people -- of the people who would receive this material. It is
18 somewhat obvious what the economic benefits are to people who have this material to put back into
19 commerce, and it obvious they are going to offset some disposal costs. But you should be looking also at the
20 injury or the costs to another industry of having to receive this material.
21 It is clear from today's earlier discussions, that it is quite an emotional topic and that
22 emotion actually may transfer into a real effect, that people may not be inclined, whether it is based in
23 science or emotion, they may not be inclined to want to use these materials in their everyday lives. And
24 the NRC should include really a cost and benefit -- include that under cost and benefit work.
25 I am just looking through my notes here. I understand what Mr. Genoa said about it is
important for the NRC to somehow reassure the public of the safety of their standards, that this is not going
to cause them endangerment. Having worked as a U.S. federal employee with the U.S. EPA, I have been on

1 the receiving end of the public's distrust of different rules, and I don't really see the federal government, or
2 most agencies within the federal government being very successful in gaining the trust of the public any
3 time soon, certainly not in the timeframe that it would take for the market to feel -- for certain industries
4 to feel the effects, detrimental effects of what happen as a result of the rulemaking.
5 The thing is there are emotions and there is since and the science may be with the NRC
6 as far as what the health effects might be, but what will happen in reality is economics, in economics, where
7 the market forces are the equalizers, really, in U.S. life, and it would be very -- I think it would be very
8 important, really, for the NRC to factor in what the negative perception is of people and how that will
9 affect the market for these different materials that are the recipients of this waste material from
10 decommissioning. Thank you.
11 LESNICK: Thanks, Charles. Let me continue on. Jim Turner, thank you for waiting.
12 TURNER: Jim Turner from U.S. Steel, Steel Manufacturers Association. I have been to
13 all four of these meetings, and I have got a couple of questions which I am looking at. I probably should
14 have asked them at the first meeting, not that I wasn't paying attention. But I think my concern all the
15 way through has been the perception by our customers of our product, or the stigma that it might have, all
16 of these recycled products, business interruption, health and safety and so forth. Job loss, as Peter said.
17 LESNICK: Can you get a little closer, Jim? I'm sorry. So we can hear you.
18 TURNER: I can't see around it. All right.
19 My first question is this regulation, to whom will it apply? Is it just going to apply to
20 "official nuclear facilities" or will apply to industrial facilities, recycling facilities that handle this released
21 material to them, or will it apply to industrial facilities that inadvertently process a radioactive source and
22 become a nuclear facility, although they don't want to? That is the first question.
23 And the second question has to do with economics.
24 LESNICK: There we go.
25 TURNER: And just on a rough calculation, I have heard numbers of 300,000 to a
million tons of steel scrap, and if you assume $100 a ton of scrap, that is $30 million to $100 million in
benefit to somebody. And my question here is, the economics, who are they -- who is going to benefit from

1 them? In other words, is it the nuclear facilities, that they are going to sell the recyclable materials to the
2 recyclers? Or is it the recycling industry and the public? Are they going to discount the materials? Are
3 they going to be free? And I would just like to hear how that is going to be addressed.
4 LESNICK: Is that it?
5 TURNER: That's it.
6 LESNICK: Thank you, Jim. I don't know, on the first matter, who would this apply to,
7 if there were such a rule? Trish, did you want to comment on that?
8 HOLAHAN: I think, as we discussed a little bit earlier, this would apply to NRC
9 licensees, and then in those states that are agreement states, for the agreement state facilities. Now, one of
10 the issues that we have discussed at some of the other meetings, and we will probably get more into this as
11 we get into the alternatives, is depending on -- if we proceed with rulemaking, and what alternative is
12 selected, for example, there is a restricted release, the question is, is how do you restrict that, and would
13 there be a need for some type of license or something for ongoing work? So in that case, then you might
14 have other impacts down the line that would have to be considered.
15 Did that answer your question? In terms of the -- you asked the question I think, also --
16 I'm sorry.
17 LESNICK: Does that help clarify that?
18 TURNER: I am not sure. I guess my real basic question would be, if a company
19 processes a source and irradiates some of its materials, say a steel company processes a radioactive source,
20 now they have to hire a remediation company who is a licensed contractor, and becomes a licensee of the
21 material possibly, will these regulations apply to that release of those materials? Even though it wasn't a
22 nuclear facility previously.
23 HOLAHAN: You are asking the question that if the facility becomes contaminated and
24 you clean it up and what you are doing with the material that is then going to be taken offsite.
25 TURNER: Do these regulations apply to that?
HOLAHAN: I would think that it terms of trying to find out where it would be going,
yes, those limits could be used to dispose of that material.

1 TURNER: Thank you.

2 LESNICK: On the second question, Paul did you want to --

3 GENOA: To ask a clarifying question.

4 LESNICK: Yes, if you would pull the mike --

5 GENOA: I have talked with the good-looking Turner before.

6 LESNICK: Even closer.

7 GENOA: Paul Genoa, NEI. I think what they are saying is in the past there have been
8 orphan sources that have been melted down. That has caused a harm to the industry and they were held to
9 certain standards when they wanted to release the fly ash or whatever else, so NRC regulations were imposed
10 on a non-NRC licensee.

11 The question is, looking to the future, if there was a standard in place and one of these
12 unfortunate events occurred, would in fact the standard provide at least a decision point for the release of
13 materials from such an incident?

14 HOLAHAN: Yes.

15 LESNICK: Thank you for clarifying that. The other question, if I understood it, you
16 said there are some assumptions about tons of steel and who might benefit from that activity. Georgio, I
17 don't know if that kind of analysis has been done or not yet.

18 GNUGNOLI: At this point I would say that there's a number of benefits. One benefit
19 would be to the company if they had the option of disposing of it at a solid waste disposal site instead of
20 having to pay for the higher disposal costs at the low level waste disposal site. There would be an economic
21 benefit there.

22 If the material could be recycled, perhaps steel is highly desired in terms of recycling, but
23 other metals that may be more valuable like titanium, there would be an economic benefit to be able to
24 recycle that if it were possible so it's both in effect cost avoidance as well as cost benefits or taking
25 advantage of it costwise at this point.

There are a lot of tendrils in terms of who benefits from a decision on that. The question was both is it a cost avoidance the benefit, or actually cost acquisition the benefit and the answer is "yes."

1 LESNICK: Okay. Let's move along here. I would like to try and stay as close as we
2 can to the original agenda so as close to "2" as we can. I think we ought to be moving on to Session 3, so
3 let's try and move with some vigor through these cards.
4 Bill, let's go to you for other issues you want to make sure the agency looks into.
5 LIPTON: Bill Lipton, Detroit Edison.
6 The NRC already sanctions the distribution of radioactive materials without control, things
7 like self-luminous devices, smoke detectors, and I don't think it's a NRC licensing issue, but people talked
8 about radioactive material in dental work. The industry already adds uranium to false teeth -- otherwise
9 they would be discolored and people accept this. These are all legal and people accept them.
10 You know, the lady who was concerned about radioactivity in the window frame didn't
11 express any concern about radioactivity in the exit sign next to the window frame, and these all can lead to
12 a public dose if there is a mishap.
13 Has anybody looked into benchmarking these already established practices and using that
14 as the basis for extending rulemaking to other recycling or other distribution of radioactive material?
15 LESNICK: In terms of the health and safety issue?
16 LIPTON: Yes. These are risks which are accepted by the public and the benefits are
17 clear and the risks are clear and they are acceptable.
18 HOLAHAN: Yes. There will be further discussion on this in Session 3 if I can just ask
19 to --
20 LESNICK: Yes, that would be great. Jud?
21 LILLY: I have --
22 LESNICK: Get close to the mike, please.
23 LILLY: Okay. My name is Jud Lilly, and I am with the Department of Energy. I have
24 two recommendations for both your health effects study and your economic analysis.
25 You have included the impacts of mining replacement metals in both the health issue and
the economic issue. I would encourage you to also include the energy requirements of converting native ores
into valuable metals and also the increased land that would be taken out of production if all the material

1 that we are talking about is disposed of as low-level waste, the environmental and economic impacts of
2 removing that land from the economy should be included in the analysis.
3 It is expanding upon your already broad-based examination of those two issues.
4 The other point I wanted to make was I wanted to go back to a point that Mr. Cliff I
5 believe was wondering if the analysis that had been done of the classification issues of the nickel would
6 make the limits that have been proposed, if that would skew that.
7 I have talked with Bob Meck. I don't think the classification issues will have any effect
8 on the ability to apply these limits to the nuclides that are in the nickel for free release, so I don't think
9 that is an issue.
10 LESNICK: Thank's for clarifying that.
11 HONNICKER: If I could respond just for one second to that, I think that would be fine,
12 I would accept your answer 100 percent if you would tell me exactly what was in that nickel, if you would
13 tell the workers exactly what was in that nickel and if you would explain to them right now, people who
14 are suffering from chronic fatigue, who are suffering neurologic problems, brain lesions, a whole host of
15 health problems right now from exposure to that nickel, to which Secretary Richardson has already
16 apologized for, to what we are meeting with the Secretary of Health, Environment & Safety tomorrow in
17 Oak Ridge to deal with these issues.
18 I don't accept it when you say this pro forma "I don't think there's a problem." There is
19 a problem.
20 LESNICK: Okay, gentlemen, this is an issue that sounds like for you all to talk about in
21 Tennessee between DOE and the folks there.
22 HONNICKER: No, it is a bigger, it is a much bigger issue and I hope -- I mean you
23 all paid a thousand dollars for me to come up, to fly, to be here at this meeting, and I hope that I can
24 have maybe 10 minutes of your time to give a real overview of the nuts and bolts of what is going on right
25 now, because what is going on right now, the reality affects the theoretical.
What you guys have right now -- theoretical, hypothetical. We are dealing with reality
and I hope that we can make a presentation and inject the difficulties of what we have to deal with right

1 now that will shed maybe a little bit of wisdom on your rulemaking.

2 LESNICK: Thanks, Cliff.

3 GUTTMAN: -- Is Mr. Lilly making a statement on behalf of the Department of Energy,

4 in which case we will follow it up vigorously, because we understand you are basically clueless as to what is

5 in nickel at Oak Ridge, and if you are telling us now it doesn't matter what is in there, that is a very

6 interesting statement -- are you speaking personally or on behalf of the Department?

7 LILLY: No, I am speaking on behalf of the Department and I was not saying that we

8 are clueless as to what is in the nickel.

9 GUTTMAN: Then I would like to know right now when you are going to give us the

10 data on what is in that nickel.

11 LESNICK: Gentlemen, you might want to get together during the breaks and -- again,

12 this is something between you all that is different from what is at this table at this moment.

13 GUTTMAN: No, it is not different. This is most of the metal in this -- it is an issue --

14 LESNICK: Let me move on.

15 GUTTMAN: I don't mind if you are shutting us off. You can't shut us off by saying

16 things that are directly at odds with the realities -- we are talking about most of the metal here is DOE

17 metal is not true.

18 LESNICK: I am suggesting that the issue that you all have been going back and forth

19 on is something that is extremely important to both sides and you ought to pursue it. I am not saying

20 not --

21 GUTTMAN: -- very important to the country if you are going to get the benefit of

22 having your [inaudible] come from this material.

23 LESNICK: Thank you. Dan

24 SZWED: Dan Szwed for AK Steel and the special steel industry of North America. Just

25 a couple of comments to follow up on the economic issues.

I've heard a lot of commentary about how our scientific procedures are very wonderful and we can analyze things down to minute details with limited or no uncertainties.

1 I think we need to apply the same kind of detailed analysis on the economics but
2 recognize we have to deal with the uncertainties on the economics. We are dealing with the perception of
3 the consumer here, and it is going to go from the consumer that says I want to buy a new car to the car
4 company that says I don't want radioactive steel or radioactive metal in my car, and it is going to come
5 back to the main producers of those products. It's going to deal with product deselection. It's going to
6 mean retooling for many major industries and there's three other things we need to consider here that we
7 have learned from the environmental protection regulations that have been out for the last 30 years now.
8 One is you can't transfer the problem. Two, dilution is not the solution -- and the way to
9 deal with it is through pollution prevention at the source.
10 LESNICK: Tony, you have been waiting for awhile.
11 LAMASTRA: Tony Lamastra. The slides seem to give me an impression that the NRC
12 is only intending to factor in the economic costs to the regulated industry and I am really hoping that that
13 is not true.
14 GNUGNOLI: Not at all. I mean we were talking about the costs that may not be
15 reflected in dollars, like construction of roads, noise. I mean we are not looking just at what it costs the
16 industry but what it can cost the community and what benefits could come to a community.
17 In effect, we have to look -- if we are going to get the net positive value to society we
18 can't take that limited point of view.
19 LAMASTRA: Tony Lamastra again. Over and above the net or the general society, are
20 you also going to take into consideration what Dan just brought out and what the steel industry has been
21 saying all along and the metals industry, that essentially will you try to work up some way of evaluating
22 the public perception of risk and how that affects the potential for deselection, and then what that means to
23 the industry, because I think if you don't do that you are really -- I can't see how you are doing a real
24 economic impact.
25 GNUGNOLI: Georgio Gnugnoli, NRC. That may have to fall into a qualitative
assessment. It may be difficult to put numbers on that kind of thing and if we do it might be somewhat
suspect.

1 I mean if in our development of the methodology of doing the cost benefit analysis we can
2 quantify, we will try to do so because it makes the decision more logical, more approachable, but in those
3 cases where things like environmental justice is involved it is just very difficult to quantity, we will still try
4 to factor in a qualitative fashion those factors that will affect the decision of whether it is of positive net or
5 not.
6 I can't be that specific at this point because I am not exactly sure at this point how that
7 cost benefit analysis is going to function, but that comment as well as a number of other ones we have heard
8 we will have to look at. we are very aware of the perception as well as the reality that the perception
9 can't drive decisions, so yes, that is something we are going to try to effect -- to include in our evaluation,
10 but at this point I don't know if we can do it quantitatively.
11 That is the problem I am having at this point. It may be that we can do that but right
12 now I really don't have the vision of that.
13 LESNICK: I have seen several cards go up there so let's take the remaining cards before
14 we move on to Session 3, okay?
15 Steve, I am going to get you in here because we haven't heard from you during this
16 session.
17 COLLINS: Steve Collins, the Illinois Department of Nuclear Safety.
18 Two items. One of them is if you back off and look at this as a regulator you have got
19 to say why am I subjecting myself to this? I mean the metals industries don't seem to want to have any
20 part of it. It is a few years before there's too many utilities that are going to have a great need for it.
21 The regulators have been doing these kinds of approvals or granting on a case by case basis for decades with
22 small amounts occasionally going out there.
23 There is nothing in this world that is not radioactive. Every frying pan and every brace
24 is currently -- and every hip replacement is currently slightly radioactive, so someone, and I think it is the
25 Nuclear Regulatory Commission's responsibility along with the EPA to initiate a process, which you are
doing.
Someone needs to come up with is there a level below which we don't need to regulate it,

1 and hopefully we are collecting data to get to that point. I know that also from the State of Illinois
2 perspective, no matter what level you come up with, Illinois and a lot of the other states that we have
3 talked to want to have the authority to continue, regardless of what the NRC puts in its regulations to
4 continue case by case evaluations and to be more restrictive if we so choose.
5 It would be nice if we could address this on two different levels, which I think we have
6 been, but we have kind of been ignoring one of them, and it is the primary authority in the Atomic Energy
7 Act and most state statutes to address radiation protection issues as one of health and safety.
8 The independent scientific organizations that all make recommendations, whether it is
9 international or national, even U.S. EPA -- U.S. EPA calls 1 millirem a year a trivial dose; NCRP calls it
10 a negligible individual dose; and ICRP and IAEA basically I think use the same negligible individual
11 dose, so scientific bodies have given the regulators some guidance.
12 Some people still do not find that level or that number, if it would be chosen to be
13 acceptable, so from our perspective I am glad the NRC chose to come up and take all the heat from
14 proposing something, but some kind of a scientifically-based number is needed to be used by the regulatory
15 agencies that all of the different parties, whether they are current licensees or somebody that might get this
16 stuff dumped onto them, can be aware of upfront and it is not set by policy but that it goes through a
17 formal rulemaking and administrative procedure process to be developed.
18 LESNICK: Some of those conversations, maybe as we talk about alternatives and your
19 sense and your colleagues about what you think is appropriate.
20 Let's just go down this side and finish up Session 2 here. We'll go Tom Civic and then
21 Mike, Pete, and who else have we got, down here, Charles and Don.
22 CIVIC: Tom Civic from the American Iron and Steel Institute. And perhaps after I
23 talk, maybe the next person who would add to my comments would be Pete Hernandez on the issues
24 regarding public perception.
25 However, I'd just like to make a comment regarding the NRC's statement about coming up
with only qualitative economic impacts of the effects on the industries that are going to be affected from the
use of this material.

1 It seems to me inconsistent that we can make all kinds of assessments and assumptions for
2 risks that we can't measure, come up with that say one millirem is insignificant, based on data.
3 We can make all kinds of assumptions on how a pound of this material was going to flow
4 through the process, and how many people are going to be exposed to this with different risks, and we can't
5 come up with some reasonable assumptions that will be made and from studies that can be done to determine
6 the economic impact of this releasing of this material.
7 It seems to me that if the NRC does not have that information, perhaps they do have the
8 wrong consultants advising them, and they may need to get some people that have some expertise in
9 developing economic impacts.
10 LESNICK: Thanks, Tom. Also, I think we'll hope that different industries might provide
11 information, the best that you've got available as well in this kind of circumstance.
12 Mike?
13 MATTIA: The one word we've heard a lot over the last at least hour, is the concept of
14 perception. In a consumer-driven market, perception is reality.
15 A steel mill won't buy scrap if they perceive it's a problem. An automaker won't buy
16 steel if they perceive it's a problem.
17 That's because a buyer won't buy the auto if he perceives it's a problem. Consumers,
18 whether it's in the United States or abroad, they buy based on emotion and perception and rarely on fact.
19 And that's been one of the problems because this material, if it's going to be released, is
20 going out into the marketplace, and the marketplace has been saying for a long time, we have a problem
21 because of consumer perception.
22 We can -- we'll listen to individuals who will cry about frying pans and dental fillings,
23 and those of us who may be in the know will say, well, that's not going to happen. But they don't know
24 that's not going to happen. Consumers don't know that's not going to happen.
25 The problem is that you, meaning the NRC, meaning the DOE, or meaning anyone who is
sitting on this material, want to release it, but you want to release it into industry, and industry is saying,
but I'm not comfortable with that.

1 However, there are some facts that we know are there. We know there's material there
2 that isn't contaminated, that's never been near contamination. How do we know that's what we're getting?
3 How do we know that we can assure ourselves of what we're getting?
4 There is material that might be decontaminated that some consumer would be willing to
5 accept because he has a market for it. And there is material that no one would accept, and how do we
6 know that that's not going to get into streams that are unacceptable?
7 But that's the bottom line. We do not understand what the facts are, because they're
8 garbled or they're not there, and you're thinking about making a rulemaking that will affect stakeholdres,
9 without the stakeholders having an initial buy-in to accept the premise.
10 So, before you can even think of having a rulemaking -- and we've said this time and
11 again -- you need to allow the stakeholders, the steel industry, the recycling industry, the consumers, the
12 special interest groups, those that will be releasing the material, whether it be the power industry or
13 medical, to be able to agree on what the facts are, to agree on what the parameters of dealing with this
14 material is, how much is it?
15 What does it look like? How do I know what it is when I see it or measure it? What
16 industries will accept what material? What consumers will tolerate what?
17 And then when you have that consensus, then you can make a rulemaking to enable that
18 to happen. But in essence, you're putting the cart before the horse, you're trying to make the rulemaking to
19 issue the material out, and then we've got to figure out what are we going to do with it once it gets out
20 there.
21 Let the stakeholders, the consuming public, the industries, agree on what they will do with
22 the material, what they will accept, what parameters they can agree with, and what parameters they cannot.
23 And once that is achieved, then you do a rulemaking to make sure that those wishes
24 happen.
25 And that's why we've said that there needs to be convened, an interest group that studies
that problem, gathers the facts, and issues recommendations so that all the groups that will be affected will
have some agreement on what is tolerable, what is acceptable, and what isn't.

1 LESNICK: Thank you, Mike. Let's move on to Pete Hernandez, and then Charles and
2 then Dan.
3 HERNANDEZ: Peter Hernandez. I want to bring up some material information that
4 might be useful to the participants, and also I have a question, a followup question.
5 We asked the Worthland Group to poll four focus groups regarding the free release of
6 metals. Participants were told that several facilities that previously used to produce nuclear material or
7 generate nuclear power were being decommissioned.
8 It was explained that these facilities were very carefully regulated by the NRC, which
9 ensured the safe handling and disposition of any unsafe radioactive materials.
10 Considerable effort was taken in the description to avoid prejudicing responses. For
11 example, the word, contaminated, was never used. Words like safe and negligible were used to describe the
12 materials.
13 Reaction to this concept nevertheless was overwhelmingly negative. Over 80 percent of
14 the respondents felt that it was a bad idea.
15 Uncertainty, risk aversion, and skepticism of government oversight all underlie the strong
16 negative reaction to releasing and recycling any materials previously used at nuclear facilities, regardless of
17 how safe the Nuclear Regulatory Commission or the Department of Energy deem the material to be.
18 Perceptions of all steel would be negatively impacted, and consumers would actively
19 de-select products made with steel, according to Worthland.
20 I wanted to just communicate those findings to you.
21 Secondly, as a followup to a point that Paul made, which I think was a valid point, that
22 if you're going to set a clearance limit, the public has to be assured that it is absolutely safe.
23 But my question is, what role does ALARA or would ALARA play if you set such a
24 standard? I see this is as if you say that one millirem is absolutely safe, and you also say something about
25 ALARA, you're sending a mixed signal.
LESNICK: Some of the most recent comments have almost moved us into this third
session, so I want to ask NRC, do you want to answer this ALARA question or issue now, or do you want

1 to wait till we move into further analysis?

2 Can you hold off with that, Pete, because I think that's an important ingredient of having

3 that discussion. So let's quickly move on and see if we have other things about studies so we can jump into

4 the stuff that you all seem to want to talk about in more detail.

5 WILK: My comment is not that different than Mr. Lamastra's or Mr. Hernandez.

6 I think I would still like to reiterate that it's important to do a cost/benefit study,

7 factoring in the effect on the market for the recipients of this material.

8 The gentleman from DOE stated that it's difficult to measure perception. At the Portland

9 Cement Association, we measure perception for a number of things, including concrete for residential homes.

10 And either our market research department and their contractors are bamboozling us, or,

11 indeed, you can do perception studies, and quantify those perceptions.

12 LESNICK: Let's move on. The last word on Session 2?

13 GUTTMAN: Dan Guttman from PACE. I think this is actually a followup. I think it's

14 germane, and it's instructive, so therefore it may not be relevant.

15 The question is, on the question of quantifying perceptions, if I may, I've been here now

16 --

17 LESNICK: Get closer to that microphone or you're not going to be on the record.

18 GUTTMAN: There was something that was screwed up in the last transcript to my

19 betterment, not to my detriment, so I'm not upset about not being correctly quoted.

20 LESNICK: Maybe it will cut the same way this time.

21 GUTTMAN: On the public perception issue, as I understand it, we sat here through this

22 session and the last session, and a number of people remarked the last session that there didn't seem to be

23 anybody at the table that was a proponent of let's make it simple without the metal industries being

24 offended by volumetric recycling. Let's make it simple.

25 I think the utilities folks, Mr. Genoa, said that you've got no interest in making money

from volumetric recycling. Obviously you have a very legitimate interest in dealing with your waste

problem, and you don't want to have it cost money.

1 But you're not in the business, at least at present, of volumetric recycling. The state
2 people have said you've got the responsibilities of regulators. You want to assure health and safety, and
3 part of it is having the best, most expert, well founded standards.
4 The steel people, the environmentalists, the special interests, have made their positions
5 clear. The scrap folks, I think their position is, look, you know, if it's ethical and legal we'll do it, but it
6 ain't obvious.
7 My question is, on the quantifying of perceptions, can you please tell us, since I know that
8 Mike and everybody else, Barbara, did their best to get representative groups here, where is there anyone in
9 this room -- let's make it simple -- is happy to get up here and say why they think there should be
10 volumetric recycling for unrestricted use, not simply for a labeled watchband or an exit sign, with
11 unrestricted reuse, and without recall. We don't know what it's in, so you can't recall the exit sign.
12 Is there anybody in this room in favor of that? I mean, that would be a nice, simple,
13 quantitative measure.
14 Was there anybody in the room last time? Not to my knowledge. And if there is
15 nobody in the room, isn't that a measure of public perception?
16 LESNICK: I think that's an important point.
17 GUTTMAN: And if there is nobody in the room, can you tell us what comments, because
18 we all want to be educated. What comments have been filed before you folks saying, gee, what a great idea.
19 We've been sitting here for the whole two millennia waiting for the opportunity to recycle volumetric
20 material. If there's some way to sneak it in before Y2K, you know, is there anybody we can look to? Who
21 do we look to to find out why this is a publicly good idea?
22 LILLY: Dan, if you recycle surface material, the first thing you do is melt it, and as
23 soon as you melt it, you have volumetric contamination, so all you have is the difference between surface
24 releases and volumetric releases, and that's one step.
25 GUTTMAN: I'm not asking -- okay, if that's an answer, my question is, so Secretary
Richardson, as I understand you, is in favor, he is an advocate of the recycling for unrestricted reuse in
consumer products of any kind, without any recall mechanism. Is that what you're telling me, so we can

1 convey that back to Washington?

2 Are you speaking for Secretary Richardson now?

3 LILLY: That's the policy that we have, the policy that we had when we awarded the

4 BNFL project has not changed. We think this makes sense. We think it is safe, it is regulated, and that's

5 why we're pursuing it.

6 GUTTMAN: And do you know of anyone else that likes that policy except for the BNFL

7 SAAC folks who get a quarter of a billion dollars for it? Anybody else you've got that can support that?

8 LILLY: Anybody who has a surface release process is eventually going to get into a

9 volumetric issue.

10 LESNICK: Gentlemen, actually, Dan, this is a good segue, because I think you raise the

11 point that we want to get to, which is what -- given what people now know and understand and have heard,

12 to have some discussion about thoughts about alternatives.

13 What are some ways of managing and controlling solid materials? And that's, as you

14 heard from the Agency at the beginning, it's a topic they're going to want to talk about for the rest of this

15 afternoon and tomorrow.

16 We've got to get into understanding some of these alternatives first. Barb, we have an

17 obligation for quick public comment availability, and then we can move on to our session.

18 Is there anyone who would like to make a quick comment or ask a question that's not

19 around the table before we jump into talking about some of the alternatives?

20 Sir, if you would move to the mike and identify yourself.

21 VOICE: From the Illinois EPA. The other constituent group that doesn't seem to be

22 here is the people who run the solid waste landfills. In Illinois, unlike Texas, almost all or our landfills

23 are run by private companies.

24 I don't know if you've ever been to one of their siting hearings where local government

25 and local people get to comment on whether this is a good thing or not. But when they're told they can't

put their grass clippings in the landfill, but radioactive waste can go there, that might not go over too good.

I have a feeling it's going to have a big impact on the siting of new landfills, at least in this state.

1 I recommend that somebody from the waste industry be involved with this.

2 LESNICK: Just so you know, the Solid Waste Association of North America has been

3 monitoring, and they had an individual come to one of the meetings, and I know they have an interest, and

4 the Environmental Industries Association, I think, which is the private sector version is monitoring as well.

5 I think they intend to write comments. But the point is that they're not here today,

6 necessarily, those organizations as organizations.

7 Can we move on to Session 3? I think people are keen to start getting into this.

8 Who are the folks who are going to be doing the presentations on Session 3?

9 BARNETT: Could I make a comment? I missed my chance.

10 LESNICK: Certainly. Would you introduce yourself?

11 BARNETT: Jack Barnett, Radiation Chief for Region V.

12 About a month ago, DOE was planning to send about four ounces of mixed MOX fuel,

13 plutonium/uranium fuel from their facility in New Mexico up to the Chalk River reactor up in Ontario.

14 And the route would have taken it through the south side of Chicago, through the state of

15 Michigan, and then across the Mackinaw Bridge up into Ontario. And the Mayor of Mackinaw City

16 wanted to lay down on Mackinaw Bridge to stop this from going across, four ounces.

17 So I guess my point is that we're talking about perception here, and there are very few

18 things in this earth that are more provocative than the idea of radioactive waste, radioactive materials, or

19 radioactive substances.

20 And the perception, as somebody said earlier, can be reality. And I think that if we're

21 really thinking about releasing these things, we better make sure that we have the right stakeholders at these

22 meetings.

23 As I look around this room, you know, one of the strengths of our country is our cultural

24 and racial diversity, and, frankly, with very few exceptions, I don't see too much of that here at this

25 meeting.

EPA, Region V, which is very similar to NRC Region 3, has 29 recognized federal

tribal groups, many of whom would be impacted by this, certainly Prairie Island, which is up in Minnesota,

1 which is a power plant on an Indian Reservation on the same island. Those folks aren't represented.
2 And I think the gentleman from the Illinois EPA mentioned, too, I don't see the
3 municipalities, the great cities of Chicago, Detroit, Cleveland, et cetera, represented.
4 So is this a workshop or is this a public meeting? I just don't think we're really
5 reaching the full breadth of the stakeholders that should be here.
6 LESNICK: Thank you very much. Okay, folks, let's move on here.
7 CARDILE: Okay, I want to introduce Steve. There are several of us who are going to
8 be making this presentation, myself, Tony Huffert, Steve Clemenowitz from the Office of Nuclear Reactor
9 Regulation at NRC who has joined us at the head table.
10 What we're going to try to do in this session is to try to take the rest of today and
11 tomorrow to try to focus our discussion on alternatives for control of the various materials and the costs and
12 impacts and benefits associated with each of the alternatives that you're probably thinking of.
13 We've talked a lot about various things we can do, what we should do, and we'd like to
14 try to at least focus that a little bit.
15 What should we do to control these materials? We could continue our current
16 case-by-case approach, or we could establish criteria for control of solid material so a formal rulemaking
17 process with analysis of health and environmental impacts and cost impacts --
18 Specifically, we could do several things: We could not permit release of materials from
19 radioactive areas, or we could establish restrictions limiting release of solid materials to certain authorized
20 uses, or we could set acceptable dose levels which must be met before materials could be cleared for
21 unrestricted use.
22 As I will describe in some more detail later, and we have this on the flow chart, these
23 alternatives differ in how much they tighten the controls on release of solid materials from licensed facilities.
24 We will also consider other possibilities. There are other alternatives, some of which have
25 been suggested here today, and some of which have been suggested in earlier meetings. Tony will discuss the
first alternative, which is to consider our current case by case approach.
HUFFERT: Thank you, Frank. The current NRC case by case approach, as pointed out

1 earlier in Trish's session, the NRC does have regulations for the disposal of solid materials containing
2 relatively large amounts of radioactivity. But the current NRC regulations do not contain generally
3 applicable dose criteria for the control of solid material with relatively small amounts of radioactivity that
4 is either on or in the material and equipment.
5 Even though we do have such criteria in place to cover the release of solid materials, it is
6 likely that licensees will continue to seek to release solid materials for small amounts of radioactivity, when
7 that solid material becomes obsolete or otherwise unusable during operations or when their facility is being
8 decommissioned.
9 We do have regulations that require licensees to survey materials to evaluate their
10 radiological hazard. One set of criteria licensees use to evaluate solid materials before they are released is
11 Regulatory Guide Number 1.86. This is entitled "Termination of Operating Licenses for Nuclear Reactors."
12 A similar guidance document is Fuel Cycle Policy and Guidance Directive Number FC-8323. This is
13 called, "Guidelines for Decontamination of Facilities and Equipment Prior to Release, for Unrestricted Use,
14 or Termination of Byproduct Source or Special Nuclear Materials Licenses."
15 Both documents contain a table of acceptable surface contamination criteria. The tables of
16 surface contamination criteria do not apply to solid materials with contamination spread throughout its
17 volume, such as soil.
18 For some situations, NRC allows releases of volumetrically contaminated solid material, if
19 the survey does not detect radioactivity levels above background radiation levels, and this is sometimes
20 referred to as a "no detectable" policy. This does not mean that material is released without any radioactive
21 material on or in it. It simply means that the material may be released with very low levels of
22 radioactivity that is not detectable with radiation monitoring instruments, and detection sensitivity levels
23 under this policy are consistent with those of the average values given in Regulatory Guide 1.86.
24 The NRC also evaluates specific requests for the release of solid materials on a case by
25 case basis, which is discussed further on the next slide.
First, I would like to discuss Regulatory Guide 1.86 and its equivalent, Fuel Cycle 8323,
further. In 1974, the AEC published Reg. Guide 1.86 and in 1982, the NRC published Fuel Cycle

1 Directive 8323. The Table of Acceptable Surface Contamination Levels are applicable to various
2 radionuclides and surface contamination levels are stated in terms of measurable radioactivity levels and
3 were based principally on the detection capability of readily available survey instruments at the time the
4 guide was developed about 25 years ago.
5 Some of the limitations of this guidance are that it is only -- it only contains numerical
6 limits for the amount of radioactivity that can be present on the surface of solid materials, and it, therefore,
7 does not apply to solid materials with volumetric contamination. Also, these surface contamination levels
8 were not based on the potential dose to an individual that could come in contact with the release of
9 materials, rather, they were developed primarily based on detectability. In addition, both documents were
10 not established under a rulemaking process, which would be conducted under the Administrative Procedures
11 Act.
12 Another limitation of this guidance is that, although surveys provide licensees with
13 reasonable assurance that elevated levels of licensed radioactive material is not being released from their
14 control, not all licensees survey materials with the detection sensitivity. This can lead to differences in the
15 amounts of licensed material that is released and non-uniform levels of protection.
16 One regulatory option that is available to licensees is to request approval of alternate
17 disposal procedures. Under this regulation, licensees are allowed to seek NRC authorization to dispose of
18 material with low levels of volumetric contamination. These requests typically involve the burial of solid
19 material on a licensee's site or disposal at a nearby landfill. Examples of these materials could be soil,
20 sludge, roofing materials. Licensees are required to identify and describe the waste, the disposal site, the
21 pathways of exposure and calculate dose to members of the public and to workers.
22 The guideline that is typically used is that annual doses should not exceed a small fraction
23 of the annual public dose limit, which is currently set at about 100 millirem per year.
24 And to illustrate this, I would like to discuss two examples of solid material releases that
25 will clarify our current case by case approach. The first example is a case of a licensee requesting approval
of an alternate disposal procedure involving the offsite disposal of septic tank waste from a power plant.
In 1990, the Yankee Rowe Power Plant requested NRC approval to dispose of septic

1 tank waste which contained very low levels of licensed radioactive material at a local public sanitary
2 wastewater treatment facility. The total amount of radioactivity in this septic tank waste was about 2
3 microcuries, or 2 millionths of a curie, and it included cobalt, cesium and manganese radionuclides. The
4 calculated dose from this disposal was about one-tenth of 1 millirem year to a person exposed to the waste
5 during transportation or by burial.
6 The NRC staff coordinated this review with the Massachusetts -- the Rural Massachusetts
7 Board of Health, and based on the projected radiological doses, and the controls for surveying the material
8 prior to its release, this disposal request was approved.
9 A second example is a case of a license requesting solid material releases during
10 decommissioning. For nearly 30 years SentaChem, Incorporated in Tuxedo, New York, produced
11 radionuclides for medical, research and educational uses. After radionuclide production operations stopped,
12 the licensee conducted a comprehensive characterization of the residual radioactivity that remained in
13 building structures, in the materials appropriation system, laboratory equipment, buried pipes and also soils.
14 Radiological surveys and process knowledge were used to document the radiological status of the facility
15 and to develop a plan for dispositioning the structures and the materials.
16 During the decommissioning of this facility, solid materials containing low levels of surface
17 contamination were surveyed and released for unrestricted use. The criteria that were used for releasing
18 these materials was the more stringent of NRC or New York State criteria, and in this case the NRC
19 criteria was a "no detectable" policy and Reg. Guide 1.86, and New York State criterion was its own version
20 of Regulatory Guide 1.86.
21 Solid materials that exceeded the site-specific release criteria for unrestricted use were
22 either disposed of as radioactive waste in a licensed low level radioactive waste disposal facility, or was
23 transferred to a licensed radioactive waste processing firm.
24 So, as you can see from these examples, solid materials are being released in the absence
25 of NRC regulations in this area, which, in turn, raises the question, how much of this material has been
released so far?
As I noted earlier, licensees are currently required by our regulations to perform a

1 radiation survey and to keep records of those survey results. However, these survey records are not required
2 to be submitted to the NRC. Therefore, the NRC does not track the amount of solid material that is
3 released from all of its licensees, which makes it difficult, if not impossible, to estimate how much solid
4 material has been released so far.
5 The NRC does not currently track these releases for several reasons. NRC inspects
6 licensees' radiation protection program and the survey records. The solid material releases that are made by
7 licensees are in compliance with licensee programs, which, in turn, are consistent with existing NRC regs,
8 and the exposures that are associated with the release of solid materials are estimated to be low. In general,
9 it is projected that the amount of solid materials, such as metal and concrete, that have been released to date
10 are small compared to the amount available in future decommissionings.
11 This graph is based on data contained in an EPA report from 1997. It is a technical
12 support document entitled, "Evaluation of the Potential for Recycling of Scrap Materials From Nuclear
13 Facilities." According to the EPA's estimate, the total amount of recyclable steel from nuclear power plants
14 is right about 600,000 tons. That is assuming a 15 millirem per year dose level. The graph also
15 illustrates EPA's projection of when the steel may be potentially released as the nuclear power plants
16 undergo decommissioning over the next 50 years.
17 It should be noted, however, that the 600,000 tons of steel potentially available from
18 nuclear power plants is a very small fraction of the total amount of scrap that is recycled by the steel
19 industry. Over 50 years, the steel industry could recycle hundreds of millions of tons of scrap steel and, as
20 indicated in this graph, the amount of potentially available steel from the nuclear power plants ranges from
21 less than one-tenth of 1 percent to 1 percent of the steel industry's annual use of scrap.
22 Currently, NRC is researching the total amount of materials that could be surveyed and
23 released under a potential clearance rule at various dose levels. The amount that could be released depends
24 on the radiation dose level and associated radionuclide concentrations that would be established.
25 This concludes my presentation on the current practice alternatives, and Frank will
continue this session with a discussion of other alternatives for addressing the control of solid materials.
Frank.

1 STINSON: We are going to move through each of the slides that you have left in front
2 of you, three more, and then comments and questions and discussion following that.
3 CARDILE: The best way to discuss the alternative is to use -- the various alternatives is
4 to use this diagram. To start the discussion, -- am I talking into this? To start the discussion, as noted this
5 morning, materials are generated at licensed facilities, that would be over here.
6 The solid materials are generated the whole range of NRC licensed facilities, at reactors,
7 at university laboratories, at hospitals. These materials can be in radioactive areas, for example, pipes or
8 tanks, and plant process systems, or in lab equipment, or chairs or furniture at a hospital or university
9 laboratory. The material can also be in unaffected or clean areas that are unaffected by contact with
10 radiation. These might be, for example, administrative offices, ventilation ducts in control buildings, or site
11 fences, which are nowhere near any of the radioactive materials.
12 So the question we are addressing, we are trying to address, is what should be done with
13 these various materials when it is no longer needed or is obsolete? The diagram also shows that any
14 materials leaving a facility would be subject to some form of a survey. Either the radioactivity level would
15 be monitored using a detector, or a decision could be made about what to do with this material based on
16 some administrative knowledge of its history, that is, where it had been in the facility, what it had been
17 used for, and if it had contact with radioactivity.
18 So the question we continue to pose is, what should be done with the various materials
19 after they received some survey?
20 One alternative is to establish in the regulation that solid materials from areas in a
21 licensed facility where radioactive material was used or stored would not have to be monitored, but would
22 rather, based on knowledge of its location in the facility, be sent for disposal at a licensed low level waste
23 site.
24 This is what we have referred to a few times today as prohibition. And, basically, what
25 that is is that material goes from here to survey, based on knowledge of its previous use, and then sent to
licensed low level waste disposal. The rationale for this alternative is that there would not be release of
certain solid materials, thus, removing concerns associated with allowing solid materials into products for

1 public use.

2 The question open for discussion is how and whether such a limitation would apply to

3 unaffected or clean areas of the facility, for example, items in the administration building or site fences, or

4 similar types of materials.

5 A second alternative is to set a dose level in the regulation below which materials would

6 be surveyed and then cleared for unrestricted use by the public. The rationale for this alternative is that it

7 would allow some productive use to be made of these materials rather than simply throwing them away.

8 Before any material is released from the licensed facility, it would be monitored to assure that it met

9 acceptable levels. Material that was above the acceptable level would also find it way to low level waste.

10 Material, however, below the acceptable level would no longer be subject to NRC

11 licensing and could go to any unrestricted public use. This could include a recycle process and then into

12 consumer products. It could also be reused in its current form. I think someone mentioned today use of

13 trucks or bulldozers and what to do with them. Or the material could simply be thrown away in a public

14 landfill rather than licensed low level disposal, assuming that it met these acceptable levels.

15 None of the members of the public in this box, or using the material in this area, would

16 have an NRC license, of course, not the scrap dealer using the material, not the steel manufacturer, and not

17 the end user, and not the landfill operator.

18 Well, what would be an acceptable level to send the material on this path? The purpose

19 of a rulemaking would be to try to set an acceptable level which could be agreed upon, at which all of

20 these members of the public would be protected, including the worker handling the scrap, the worker in the

21 steel mill or concrete facility, the truck driver transporting the material, the person working in

22 manufacturing, and, of course, and certainly not least, the consumers of the end products.

23 The purpose of a regulation would be to ensure that none of these members of the public

24 got more than the limit from the material. And as Bob Meck noted earlier today, the results of the studies

25 of the 79 potential scenarios indicate that if the scrap worker is protected to a level, for example, like a

millirem, then a consumer would get well less than that, potentially well less than that level. To assure that

no member of the public got more than an acceptable level, the material would be monitored before it left

1 the facility.

2 A compromise between these two alternatives is that shown in the middle, in which we
3 could set a dose limit in the regulation allowing some material to be surveyed and released, but restricting
4 where this material went to only certain restricted uses. These restricted uses have been referred to several
5 times as authorized uses. An advantage of this alternative would be that it would make some productive
6 use of the materials, but would limit uses to those which were less likely to cause public exposure.

7 Now, this seems like a good idea, but we have heard discussions at earlier meetings that to
8 make this alternative work, by which I mean to ensure that the material only goes to the restricted use, that
9 is that is definitely goes here and not here, a question for discussion is, is it necessary for NRC to license
10 some part of the process taking the material to its restricted use? And a further question for discussion is,
11 who, if anyone, in this box, and along this path, taking the material to a restricted use, should be licensed
12 by NRC and whether a licensing scheme would work to assure that this process was followed?

13 For example, one possible restricted use of this material is to use the material in an
14 already licensed facility. For example, using it as shielding blocks in a nuclear facility or as shipping
15 drums. But a question is, should the people who make these shielding blocks or make these shipping drums
16 be licensed by the NRC?

17 Other possible uses of the material are in some use that would normally be licensed by
18 NRC. These could include, for example, girders in a bridge, or they could include another possible
19 unlicensed use where the material would be restricted to only going to a certain place, would be if you said
20 this could only go to a landfill. It would not be recycled into any public consumer use.

21 Here again the question is should the people who collect the scrap metal and transport it
22 to these locations be licensed by NRC and even whether the bridge owner or the bridge manufacturer should
23 be licensed by the NRC and perhaps whether the person running that public landfill should somehow be
24 licensed by the NRC to assure that the material wasn't scooped up out of that landfill and sent back into
25 some public use which would jump across this line here, and back down in this direction.

Of course a bridge with girders in it only lasts so long and eventually the lifetime of this restricted use will end, and the material will then become available for unrestricted use. Thus, what

1 restricted use essentially does is defer the ultimate decision about what should be done with these materials
2 while allowing radioactive decay to occur over the lifetime of the restricted use.
3 For some radionuclides like Cobalt-60, which is a prime radionuclide at power reactors
4 and at a number of university facilities, this decay could cause substantial reduction in the radiation levels.
5 For example, if the Cobalt-60 levels at this point are about a millirem, then after the
6 lifetime of the restricted use, perhaps 30 or 40 years, the dose level when the material left it might be less
7 than that, probably a hundredth or a thousandth of a millirem.
8 Now in earlier meetings and today people have suggested other alternatives, all of which
9 we are open to and all of which we will consider. One of these alternatives is recapture of the materials
10 that have previously been released. This alternative deserves to be evaluated on its merit. However, it is
11 not an option by itself because it does not address what to do with the materials that are over in the
12 generated facility.
13 Another alternative that has been mentioned is the use of ANSI N13.12. This is an
14 industry standard that we could discuss some more that has been developed and which sets an acceptable
15 level for release of material into an unrestricted usage.
16 Another alternative that has been suggested is to segregate different requirements for
17 different material types, possibly using different alternatives for different materials.
18 Another alternative that has been suggested is use of a dedicated licensed recycler to
19 ensure material only went to its authorized use, so you would insert a licensed recycler or smelter into this
20 process to assure the material went to where you intended it to go.
21 Another alternative that has been suggested is use of a specific licensed disposal facility
22 like this. However, it would be one that only handles material with small amounts of radioactivity.
23 Each of these alternatives has its pluses and minuses. For purposes of our efforts and for
24 the purpose of why we are here today and listing to your comments is to evaluate all health and
25 environmental impacts and economic impacts and evaluate the tradeoffs between the alternatives.
In summary, we would like you to provide us with input on the table that we are I guess
going to move into shortly as to what should be done with the materials at this point and specifically

1 whether it should go on this pathway, on this pathway, on this pathway, and of course in discussing those
2 alternatives and what you think about them, we would like your further ideas as to why you think this
3 alternative is the best approach or an approach that could work. We have heard some of that already.
4 As you discuss an alternative, you don't need to give, say for example an environmental
5 and economic reason. Someone else can follow that up with another rationale.
6 In addition, as we talk through those boxes about different potential alternatives, the idea
7 is not to narrow in on an alternative that we all agree upon, but to put down what some of the different
8 alternatives that people think of might be useful for the different materials, and we would like to focus, as
9 Barbara mentioned, on each of the different materials. Thank you.
10 STINSON: Before we get into an exploration of some of the alternatives, the ones up
11 there and the other ones that Frank mentioned, would it be okay if we heard just a brief presentation?
12 This will conclude all of the presentations for our two days together on assuring controls and some of the
13 methodologies that NRC has in mind if they pursued this. Would that be okay?
14 Dan says what is the alternative, if the answer is no?
15 [Laughter.]
16 STINSON: Tony, then do you just want to cover those last two slides?
17 HUFFERT: Yes. How should controls be assured under various alternatives?
18 STINSON: Can you speak up just a little bit? If you are not hearing an echo of
19 yourself, you are probably not being heard.
20 HUFFERT: Okay. Earlier NRC regulations require licensees to make surveys of solid
21 material to evaluate the potential radiological hazard that could be present and is part of the licensee's
22 Radiation Safety Program. They develop procedures for controlling solid material at their facilities. This
23 includes radiation monitoring procedures to evaluate any solid materials before they could be released.
24 Presently there are some issues with existing survey programs at licensed facilities. Not
25 all licensees use the same survey instruments and procedures to monitor materials, which can lead to
variations in detection sensitivities and equipment. Another issue is that existing guidance on conducting
surveys is geared toward the release of solid material with surface contamination -- for example, the use of

1 Regulatory Guide 1.86.

2 There is not an established procedure for controlling the release of solid materials

3 containing volumetric contamination.

4 There are also physical limitations for measuring volumetric contamination because it is

5 difficult to measure radioactivity contained in a solid object using the typical hand-held survey instruments

6 that are used at most facilities.

7 An overall consideration in controlling solid materials of volumetric contamination is how

8 to measure radioactivity in the material itself and then compare the results to a predetermined release level.

9 It is likely that the survey method that is chosen for controlling solid materials will

10 depend on the alternative chosen for regulating these materials. Currently we are considering a range of

11 alternatives which in turn requires the technical evaluation of a variety of survey approaches because the

12 alternative chosen determines that survey method that should be used to control the solid material release.

13 It follows that if a dose criterion is chosen that is very low or zero above background,

14 very sensitive survey methods and equipment would be needed. There are associated measurement costs and

15 practicalities for each alternative.

16 Another consideration in controlling solid materials is restricting the release to only

17 certain authorized use. For the restricted use alternative, what other controls are needed?

18 Some of the options for restricted use have already been discussed by Frank in this

19 session or I'll bring it back to you. What other options for restricted use should be considered?

20 STINSON: Okay, good. Thank you. So let me kind of go over the things that are on

21 our agenda for this afternoon. First, we have already heard, and let me just tell you there is a giant party

22 going on next door beginning at 4 o'clock, so if you are at all bored, just feel free to join Bank 1 because

23 at 4 o'clock they are going to unleash music and all kinds of stuff. We may want to strategically have a

24 break then. We are doing what we can to modify the sound.

25 Two materials have already been mentioned to add to the list, nickel and lead. What we

want to do first is see if there are -- these cards that are up probably relate to questions or comments

related to the presentation. Then we want to be sure that we have all the right materials in mind that we

1 need to cover for the rest of this meeting and begin to talk a little bit about the current methods of control.
2 At that point in the meeting what we would like to hear from you all are some real
3 world experiences of some of the issues, problems and ideas around the current methods of control and I am
4 sure there is a lot of good experience to relate on that. You know, that takes us up to 4 o'clock and at 4
5 o'clock we would like to -- well, what we are going to do is just before 4 o'clock Cliff is going to make a
6 short presentation that he referred to earlier, some discussion, ten minutes or so, on some of the history and
7 issues he is most concerned about. He can only be here today, so we will give him that opportunity before
8 the close of today, and by 4 o'clock talk about aluminum specifically and the alternatives for control of
9 aluminum -- what makes the most sense under the potential control items and then specifically look at what
10 might be some of the health and environmental impacts as well as economic impacts that would be specific
11 to that industry and move across the table, if you will.
12 So everybody is going to have to speak up a lot as these guys get started and we will just
13 ask your patience and tolerance about that. Tony, do you have a suggestion? Can you use the microphone?
14 I'm sorry --
15 LAMASTRA: Tony Lamastra. Could you please explain what you mean by current
16 methods of control?
17 STINSON: Sure. I mean how is the material handled currently, today? You know,
18 within NRC licensed facilities what is the method of release, the criteria for release? I am looking at the
19 explanation that is written here for that specific material and there may not be real significant differences
20 between the materials but for some of them, there are.
21 Are there any other questions? Let's go ahead and take the cards that are up regarding
22 questions, comments, et cetera, around the information that has been relayed kicking off Session Number 3.
23 I think that if my notes are right Jim has been waiting and Paul Genoa. Hand him that
24 mike.
25 TURNER: Jim Turner, SMA. I think Paul just is going to clarify what I say.
I guess the question of what are the alternatives is a very good question, because I don't
think, I haven't seen where you have any alternatives for restricted release or otherwise because you don't

1 have -- what you need to do is a market survey of some sort and see who wants this material, different types
2 of material. I haven't seen or heard anybody that does want it, so that might be the first step.
3 The second has to do with protocol for methodology. Again I think you are maybe
4 jumping the gun in looking at a release level and should look more at the method of release. Like I say, I
5 think the protocol and the release methodology used by the licensee is critical and they must be uniform and
6 consistent across different entities. I don't think that the NRC or the DOE can assume that those protocols
7 or their licensees are going to follow those protocols. The licensees are human, after all.
8 In particular my company in the last year has had actual experience with actually two
9 issues. We received material at one of our facilities from a nuclear facility and it was three loads. One or
10 two came directly from the facility and -- or one or two came through a scrap dealer. They set off alarms.
11 They were rejected and we cut off the supplier.
12 Another example is more recently, during our remediation efforts with the insulated
13 material, material that was sent to the disposal facility -- well, with material that was sent to the disposal
14 facility in Texas they located a radioactive source. It turned out that the source was put there improperly
15 by the licensee that was doing the remediation. It was taken care of, but I just wanted to point out that
16 these things can happen and I think that it is premature to look for a level that can be released until you
17 find out or determine how it is going to be released and to whom. That's all.
18 STINSON: With that you really hit on, you know, a number of the columns for your
19 industry in particular -- controls and in the cases you brought up where they have failed, and the concern
20 that you have around any alternatives and what level of materials, so this is going to be a little hard to
21 sort of push into the boxes, if you will, or direct in a particular direction, but at this point if you don't
22 mind let's talk a little bit about any general comments that you have and hold yourself back from getting
23 into the specifics of your particular industry until we can talk a little bit about current methods of control.
24 We will see if this is working. Paul? I like totally confused you now.
25 GENOA: You have. I wanted to address a comment on the presentation on the boxes.
STINSON: Good. That is what you should do now.
GENOA: That is what I want to do now. Okay. The slide, if you could put it back up.

1 it has the pretty colors.

2 Paul Genoa, representing NEI, and I would --

3 STINSON: Just pull the mike a little bit closer. It is just going to get harder and

4 harder to hear.

5 GENOA: I would offer a recommendation that the agency pursue unrestricted release at

6 this time, that it is premature to address restricted release criteria. The reasoning is as follows.

7 Fundamentally, no matter how many cycles of restriction you apply, and I can think of

8 many, you ultimately have to come to a decision or you have to have the decision criteria in place before

9 you allow a restricted release scenario. That ultimate decision is when is this material safe and acceptable

10 for release to the public without conditions.

11 If you don't have that answer in front of you, you can't make reasonable decisions about

12 how to restrict release criteria.

13 Now I believe that restricted release scenarios do make sense. The French are proposing a

14 fixed-space facility that will receive all of the metal from all of their facilities in France, mix it with

15 material from non-nuclear facilities, and manufacture industrial springs. That works in France. That is a

16 pseudo-socialistic system.

17 We in this country cannot dictate where companies send their material or how they

18 control their material in such a fashion. However, the free market does control those things, and if after

19 you set a health and safety based limit that is acceptable for the unrestricted release of material, if the

20 market forces show that there is a market, then someone will step forward and you could postulate a

21 fixed-space facility that might even be regulated in its operation that would receive material from these

22 facilities under certain conditions and will manufacture a certain product that would be used in the future,

23 whether it is industrial springs or whether it is pipes for oil and gas or whatever.

24 But for you to sit back today and try to envision that I believe is an impossibility. I

25 just don't think you can do it.

STINSON: You are saying set a level low enough to end restricted release, and then work towards or understand what's necessary to conduct a market for restricted release.

1 GENOA: Yes.

2 STINSON: And do a fixed-based -- explore the use of a fixed-based facility. I don't

3 want to extend your comments, I just wanted to make sure we had it.

4 GENOA: I think I just said that it's premature to try to do both steps at the same time.

5 It is a sequential activity. I suppose you could do it in one rulemaking, but it may take forever.

6 You need to get to the first step first. And then I would offer that in the United States

7 it will be impossible for you to try to try to dictate what will be acceptable by the economy, by the market.

8 Rather, you set the criteria and allow the market to come to you with suggestions for

9 approval, for a restricted scenario.

10 STINSON: How many people -- of the cards that are up, how many people want to

11 comment on what their favorite alternative for control is?

12 Honestly, I mean, is that what your comment is about? Okay, because what we're trying

13 to do is hold you back from commenting on which alternative you prefer at this point, and structure it by

14 material a little bit.

15 GENOA: My comment was basically on the presentation in this section. Aren't we

16 commenting on the presentation?

17 STINSON: Right, right, but you were commenting on unrestricted release versus restricted

18 release, et cetera, and I'm just wondering if this is going to be --

19 DEVGUN: That's part of the presentation. I'll take my card down here. I think that on

20 restricted release, my comment is to Frank, similar or on the same basis that in the first place, you're trying

21 to -- what is it that requires us to go through this exercise?

22 If I am a licensee, I'm required under 10 CFR, Subpart K, to show the absence of

23 licensed material. That's what forces me to go through this route or any other route.

24 So, because of that, if you go restricted use scenario, you are going to create, continue

25 creating further licenses. If you've got 20,000, you're going to have 50,000, 100,000, and so it's a -- I

would say it's a contradictory in itself.

What we are trying to do is actually a licensee is trying to release this material because

1 even if he had the equipment, you know, you don't have the lab analysis, when you're talking about 50
2 million pounds of concrete material. You don't have the lab analysis methodology available to you.
3 You're trying to process this on a bulk assay system, and you cannot show the absence of
4 licensed material. That's why you need to do that in the first place.
5 So if you go ahead and use the restricted use type of pathway, you are going to continue
6 on. It doesn't matter where this material is used or reused, if you're going to control each end use, you're
7 going to have a whole slew of licenses.
8 Before you know, everybody in the room may have a license, and it doesn't matter whether
9 you have anything to do with it or not.
10 STINSON: Mike?
11 MATTIA: A quick question and a quick comment: The question goes back to one that
12 I have asked in previous sessions, and that is, looking back at Reg Guide 186, can we obtain an
13 understanding of what would the levels that are mentioned in 186, how do those convert to milli or micro
14 roentkins, which is the standard, at least here in the U.S. that we use for measuring material?
15 And the second is a comment that goes back to the fundamental of error, I think, in these
16 presentations.
17 And to use an example, the Environmental Protection Agency regulates the amount of
18 hydrocarbons that the public can be exposed to from internal combustion engines, meaning automobiles.
19 That level is not zero, and the reason it's not zero is because the public wouldn't tolerate
20 removal of all automobiles, even though anything above zero is hazardous.
21 If you were to ask industry and the general public how much exposure to materials to be
22 released from nuclear facilities they are willing to tolerate, you may find across the board, the answer is
23 zero.
24 Understanding that, that means none of this material gets released. So before you can
25 consider making any type of rulemaking, you need to work on what is acceptable to the public, because
right now that acceptance level, almost across the board, is zero.
And we may even go so far as to say that acceptance level also applies to

1 non-contaminated material because it's contaminated by association.

2 And let's not take the chance. So you have a perception by industry and the public that

3 you can keep the stuff because nobody wants it because there has not been a buy-in, there has not been an

4 acceptance or an understanding of fact, there hasn't been an agreement as to what the stakeholders outside of

5 the government are willing to understand or willing to accept or willing to deal with.

6 And before that can happen, you don't have a reasonable chance at a rulemaking.

7 STINSON: Peter?

8 HERNANDEZ: Peter Hernandez. In the discussion in the simplified diagram of

9 alternatives, you have the arrow that contemplates going from restricted use ultimately then cleared material

10 for unrestricted use.

11 We've encouraged the NRC to take the material from this contaminated material and

12 limit it to restricted use applications. Part of the reason for that recommendation -- and we really didn't

13 contemplate it going into free release.

14 The magic of recycling is that the material objects going in to be recycled completely lose

15 their identity, and so a steel plate, a bridge girder, a pipeline, can become a car, an appliance, the steel

16 frame in the chair you're sitting in, a child's toy.

17 CARDILE: Can you clarify the question? All this chart is trying to say is that you can

18 develop a restricted use, you can put this material into a bridge.

19 Eventually, presumably, the bridge comes down. Now, two things will happen: If it's

20 Cobalt 60, you will have 30-40 -- I don't know how long the bridge will last -- years of decay.

21 The material will go very low. In addition to that, as you say, the material can go

22 anywhere at that time, and that's the point of the slide, is that once the material comes down, especially if

23 this is an unlicensed bridge, we don't know where it's going, but nevertheless, as you point out, between

24 decay and between mixing, any further exposure will be very, very low.

25 So, I'm not sure what the question was, or if there was a question.

HERNANDEZ: My point was that a suggested alternative would be not to permit material that is restricted use, to be ever rereleased, because not everything is going to be contaminated only

with Cobalt-60. You may have contamination from Plutonium or some other material that have extremely long half lives.

CARDILE: And that's a good point, and what you're advocating or what you're talking about perhaps is a licensed form of the material, because if it was in some unlicensed form, some unlicensed use, then NRC unlicensed means NRC is out of the ball game.

And if it's an unlicensed bridge, NRC only knows that it went to the bridge to made and that's it. We're done. NRC is done with that material.

Once 30, 40 years later, somebody tears that bridge down, what happens to it later, especially, as you say, if it's a long-lived nuclide, if that's where it was, then it can go anywhere.

So perhaps what you're talking about is some licensed use where, as you say, especially for long-lived material, it never goes out of licensed use. This perhaps might be different than something with short-lived nuclides that, you know, perhaps would decay away.

So you're perhaps talking about combining two different types of alternatives here.

HERNANDEZ: That's correct. Again, I understand that your diagram is a simplified diagram and doesn't necessarily reflect all the options that you're considering. I just wanted to make that point.

CARDILE: Okay.

STINSON: Kristin, did you still want to speak?

ERICKSON: The first one, I want to comment again on the diagram. I think that what you've done by putting the restricted concept in there, you have completely muddied the issue.

What we're trying to achieve here is a limit beneath we say it's safe, it's not governed, regulated, monitored, surveyed, the risk is not there anymore in any substantive form, and that we have lots of science and good communications to show that.

And then you don't have this continuing licensing, because that's not unrestricted. The other comment has to do with the commenting and the working on the public, and communication with the public and public acceptance.

Being in this business every day, and dealing with people from every walk of life, every

1 culture all over the world, I run into people, of course, who have, just you name the word, radiation, the
2 outrage factor is monstrous. That's what we're talking about here, outrage factor.
3 There is a whole profession that works on communicating risk, all kinds of risk, including
4 radiation being one of them. It can happen, it does happen, and it could with this also, that people
5 communicate with the public about this risk in such a way that they not only understand it, but they accept
6 it.
7 And, in fact, they do. Everyone accepts that my t.v. may give me some small amount of
8 ionizing radiation. I may receive two or three or five millirem flying across the country on a jet.
9 I may receive some dose from the background, and, in fact, why did they deregulate
10 graveyards, cemeteries, crematoria? They had to because the amounts in our bodies are above the limits.
11 Now, if you communicate in these kinds of ways about plain, everyday things such as
12 eating a banana with Potassium-40 gives you as much dose as some things we release, a handful of Brazil
13 Nuts can give you your public dose limit in one handful, those are the kinds of things you can do to
14 communicate with the public.
15 And that's what needs to be done. You look at the perception, the public perception has
16 to be at least half of the effort here if this is to be achieved. A well-done campaign, a well-done
17 communication, well-done assessments, well-disseminated information, that's what needs to happen.
18 STINSON: Craig, and the Dan Guttman.
19 CONKLIN: I had a question about the chart in relationship to the NUREG document
20 here. The restricted use scenario or line there, was that modeled in the NUREG here? Were there any
21 dose assessments done or economic assessments done for that particular one?
22 CARDILE: The NUREG did not do economic assessments, and I don't believe that the
23 NUREG looked at restricted uses. The NUREG focused on unrestricted uses, various unrestricted scenarios.
24 The NUREG focused on this box here, recycle, reuse, and landfill.
25 CONKLIN: Do you have any plans for doing a similar type analysis for the green box?
CARDILE: Well, if we proceeded to do that type of regulation, we would have to.
CONKLIN: I will just make one last comment. It would appear that if you're going to

1 go with any sort of restricted use, whether it ended up with licensed or unlicensed types of activity, would
2 have a pretty significant regulatory role at the federal and state levels.
3 And that would have an economic impact and a cost to it that would need to be really
4 analyzed closely. If you're going to do a cost/benefit, it's not only to the end users and the suppliers, but
5 it's also going to be to the state and local governments and the Federal Government that are going to have
6 to implement it.
7 CARDILE: All right. I was just going to say that I hear a couple of the participants
8 talking about moving towards an unrestricted scenario or an unrestricted alternative, and trying to develop
9 what is an acceptable level. That is the type of thing we talked about in the presentations. We also hear
10 Mr. Mattia talking about that the public will only accept zero.
11 I guess that presents a real conflict and two difficult things that don't seem to want to
12 mesh. I guess the question I would ask Mr. Mattia is, in listening to what other people are saying and in
13 talking about the types of dose levels that we're potentially considering, like one millirem, which is, as is
14 mentioned here, is a fraction of what you would get in flying back and forth across the United States, or a
15 fraction of what -- a small fraction of the difference between the dose that a person in Colorado gets, for
16 example, compared to the person at sea level.
17 What is the -- and as someone else mentioned, what the National Council on Radiation
18 Protection calls a trivial or negligible dose. What is the science or perception that needs to be developed
19 to get away from -- not get away from, but to discuss that in public perception?
20 STINSON: Steve was in the queue. I'm sorry, Dan, I will ask you -- I apologize for
21 skipping over you.
22 But, Mike, do you want to respond to the question?
23 MATTIA: Yeah. Not only would I like to respond to that, but to your assertion, and
24 you raise some valid issues. I think that when we look at the consuming public, we are looking at a
25 perception of risk versus benefit and risk versus alternative. You know, the risk of getting an X-ray is
there, but the alternative is you don't get your broken leg set. The risk of flying in an airplane is you get
exposure, but the alternative is you walk.

1 The problem with this material is the risk is exposure, and what is the alternative?
2 Well, the alternative to the public would be you don't release it. What is the benefit to the general public
3 if you release this material for reuse? Do we get cheaper products? Does our life improve? Does the
4 recycling industry benefit? Do we get cheaper cars or better bridges?
5 That is the problem. You have a public that says I will accept a risk if there is an
6 alternate benefit. If I have --
7 CARDILE: I am sorry, go ahead.
8 MATTIA: The question is, if you cannot provide an alternative benefit, if the public is
9 willing to do without to eliminate the risk, to make it zero, then you have to start at square one to be able
10 to get public acceptance of what they will accept, in what parameter, before you can release it. No one is
11 going to turn down an X-ray or a cross-continental flight, or even chemo radiation, given the alternatives.
12 But if the benefit for us is nothing over and above what I am getting now, and the risk
13 is additional radiation, you are going to have the public saying, where is my benefit? I would just as soon
14 take zero exposure additional there, because I am not getting anything for it.
15 CARDILE: Perhaps we could ask the generators, the utilities, the nuclear industry
16 representatives to elaborate on that benefit. I have heard some of that elaboration being, well, if the
17 material goes here rather than there, then, you know, the cost of a product, the cost of -- I think at the last
18 public meeting, one of the gentlemen talked about the cost of medical procedures being higher because it
19 cost more to dispose of the waste here versus there. So it is not that there is no benefit, it is just that
20 perhaps it is harder to see.
21 Obviously, you know, the public may not see that, oh, I am getting a benefit from this
22 piece of stuff. On the other hand, what we heard at the last meeting, or perhaps some of the utility or
23 medical people can expand upon, is what this impact is on their cost of doing business, which cost is then
24 passed on to the public.
25 STINSON: Let's continue on this particular vein, because I saw a few kind of heads
nodding and people curious about this issue perhaps having some comments. Steve, did you have something
on this?

1 COLLINS: Yes. With regard to the restricted use category, I am one of the people a few
2 months ago that suggested to NRC that that should be one of the items to be discussed, not in any way
3 because I am in favor of it necessarily, but because we needed all this input and comment to know what
4 problems it might create and that sort of thing.
5 One possible restricted use that could be made of some stuff that certainly you would
6 accept maybe a higher contamination level than for a lot of other uses would be for construction of a high
7 level waste disposal facility and the waste containers that would go into such a facility, as well as a WIPP
8 site. I mean you are planning to put stuff there forever and leave it. Why shouldn't you use contaminated
9 materials to build the waste containers? You wouldn't care how much radioactivity was fixed in those as
10 long as it didn't cause an exposure concern for the workers handling those containers or transporting them,
11 and so the level could be low enough so there is no exposure concern from that, but still use the material.
12 Even though I am a regulator, I do not have a trust -- faith, if you want to call it that,
13 in some of the institutional controls I have seen in the past with regard to restricted use. So, in that sense,
14 I am pretty much against what we would call most of the restricted use, because I don't believe that it can
15 be controlled. Like the steel people said, once it gets to that first user, it is gone, no one is going to be
16 able to track it after that, and not even for what happens to it in that first user's facility.
17 So, those are -- that is two of the things, but I am glad that we are getting all the input
18 on it.
19 CARDILE: You are leaning more towards a licensed type of restricted use, where the
20 material never leaves a licensed use, is that what you are saying?
21 COLLINS: I am sorry, the background noise level --
22 CARDILE: So you are leaning towards a licensed type of restricted use, where the
23 material never leaves a licensed environment?
24 COLLINS: It would either be a licensed type use or it would be a container that, even
25 though the container was not licensed itself, all of the people that use it would be. It would be a specially
designed container only for one use and no one else would use it. All the users would be licensed, you
know, like waste containers, they have a certificate of compliance from NRC. The container itself it not

1 licensed, but all of the users of it would be. Does that answer your question?

2 CARDILE: Yes.

3 COLLINS: Okay.

4 STINSON: I know it is only getting harder and harder to hear. We are going to have

5 this noise level until 4:00, when it is going to get louder. Anybody who would like to sign my petition

6 for getting a refund on this room?

7 Let's try to keep going if we can and we will still plan to give Cliff an opportunity, 10

8 minutes or so, and take our break well before 4:00, and maybe we will miss the big noise in here.

9 Anybody else have a comment on this risk versus benefit, versus what alternatives are

10 there? Okay. We have got four hands up. Dan, you were next in the queue.

11 GUTTMAN: Yeah. I would like to pick up on what I thought Paul said, which I

12 thought was quite elegant. He gave us -- obviously, he will tell me whether I misconstrued him -- a

13 thought experiment. What he is saying is in the real world we know none of this stuff is going to be

14 restricted forever, it is all going to end up --

15 STINSON: Pull the mike a little closer, we really can't hear you.

16 GUTTMAN: Dan Guttman. It is all going to end up somehow, out there somewhere, and

17 the ultimate question is how the market will adjust, and that is an elegant way of looking at it. And let

18 me just play that through.

19 What is different about the situation we are talking about here than, you know, bedspring

20 sales or, you know, hula-hoops, is, one, there is a special feedback problem of several sorts, which also

21 addresses what Kristen has pointed out. We are talking about substances whose affect is (a) latent and (b)

22 long-term latent. You don't get cancer till 30 or 40 years, and (b) it isn't directly traceable. You get

23 cancer, who knows what it is from?

24 So, to respond pretty bluntly to the science folks here who say, what is the big deal, it is

25 no problem, I agree with you. I have been tutored by the country's leading nuclear medicine people. They,

some of them say, those people who were injected, the American citizens, in secret, with plutonium, it was no

big technical deal.

1 Two problems, nobody told them they were injected with plutonium and, therefore, we had
2 to pay them, as a country, money and the President of the United States had to personally apologize. Two,
3 it turns out, as Cliff knows well, some of those moms who in their childbirth stages were given, quote, "tracer
4 amounts" of radioisotopic iron, which technically, according to standards were "no big deal," it turns out that
5 20 or 30 years later, a couple of them get cancer, or their kids get cancer, and we can't find out who those
6 folks are.
7 Those are instances where there were actual people with name tags, experimental subjects,
8 workers. Secretary Richardson says we have no idea how much they were exposed to. We don't --
9 STINSON: Get to your point, Dan.
10 GUTTMAN: So the first point is, what do you all think the feedback mechanism is going
11 to be if you are thinking about a rule? The second related point is we have the liability concern. Who is
12 going to be stuck, when that mom has a child who gets cancer, on the other end of the litigation? What is
13 unique about the industry we are talking about, as opposed to the steel industry, or any legitimate industry
14 in this country, including tobacco, is the Department of Energy can't get sued. And those people who are
15 under it in the nuclear biz have Price Anderson. To follow through, I assume, in your rulemaking, if you
16 are thinking of one, you are going to think about feedback and who is going to have the liability at the
17 other end.
18 And when you begin to think about it, the third thing that comes immediately to mind,
19 from Paul's elegant thought experiment, is, gee, when the public sees that the people who are thinking about
20 it have a grotesque conflict of interest, I would like formally to add to the letter that we made about
21 conflict of interest, and punctuate it, it isn't BNFL that is the only problem, we now find out that the real
22 driver here may be the Department of Energy. The only publicly stated promoter in this proceeding of
23 recycling is SAIC, I am told tens of millions under untold contracts, and probably didn't even go tell its
24 sister agency, you have got our man, or our guy, or our girl hustling this advice.
25 So the question is, where is it in all of your studies and analysis on the risk analysis?
You are looking at the feedback mechanism.
STINSON: Right. I think we got the three, and the liability.

1 GUTTMAN: Legal liability, and you are looking at 20 years from now people are going
2 to say, well, it was just Mr. Lilly and SAIC promoting it, and they were in bed with the NRC.
3 STINSON: Okay. Who else just raised their hands? Susan, Cindy. Okay. Cindy, why
4 don't you go, and then Susan and then Paul.
5 CARDWELL: Cindy Cardwell, State of Texas. And speaking as a regulator now, I just
6 want to reiterate what Kristen had said earlier, and both -- Mike had mentioned the same thing, too. And
7 it is on the issue of restricted use again, and the benefit perception -- perceived benefit with that. I agree,
8 as a regulator, it has muddied the waters, to the extent that in the State of Texas we are right now
9 proposing our decommissioning rules and are not proposing the alternative for restricted release or whatever
10 it is with the institutional controls. That is because we don't trust the institutional controls.
11 An analogy that Steve pointed out just this morning is the GL devices. Those are out
12 there as GL devices, supposedly being controlled by institutional controls. That has failed. And we have a
13 committee -- CRCPD has a committee right now working on it. Several point around here are involved on
14 it, trying to somehow fix that problem.
15 Therefore, as a regulator, we don't trust that issue. And one of the reasons why is, as one
16 of the people who has to develop our rules, I can't really attach a cost to the benefit because I don't see the
17 benefit, as Mike pointed out. There is that alternative, we can do this, but what is the alternative? The
18 alternative is unrestricted use. That is what people have bought into over the years. It is either licensed or
19 it is unrestricted.
20 STINSON: Or they haven't bought into unrestricted release.
21 CARDWELL: Have not bought into the restricted release.
22 STINSON: But I get your point. Susan, and then I think Kristen and Paul.
23 LANDAHL: Susan Landahl, ComEd. In response to the question about the benefits from,
24 you know, that the upside, if you will, of going with unrestricted release, there is no doubt that there is a
25 money savings, and there is a money savings to the nuclear power plants because they don't have to pay to
survey to the same level of extent. We don't have to pay to dispose of the waste.
But that is not my platform. My issue is that there are millions and millions of pounds

1 of material going to rad waste disposal facilities right now that has minimal risk and, as a result, on the
2 other end, there is an environmental impact because we have to recreate more steel, more plastic, more
3 chemicals, to take the place of that material, which, in my mind, is completely useable, and that is the
4 upside. That is the benefit that I see to going to an unrestricted released. Thanks.
5 THICKMAN: There is a low level radwaste facility but the issue here in terms of
6 benefit, as Mike was trying to say, is the fact that there is no societal risk essentially in material that has
7 this low a level of radiation. If there is no societal risk, then the societal benefit for recycling this material
8 is essentially the same as the societal benefit for recycling any material, right? So if the recycling system
9 itself has a societal benefit, then this would share in it, and that is the point that we are trying to make
10 here is that we ought to be able to put our material into the same process with the societal gain that
11 everybody else is using.
12 STINSON: Kristin?
13 ERICKSON: Kristin Erickson, Michigan State University, and I want to address the
14 benefits from a completely different angle than anyone has here, maybe because what we do is different,
15 being a research and educational, biological research and development institution.
16 I am going to name some benefits that none of you have heard of, and which are falling
17 away and being lost because of the over-regulation, the cost of regulation, the cost of disposal. We are
18 seeing businesses, researchers, uses, all kinds of things, stopping because of this kind of problem and that is
19 my interest. It is not money.
20 Our waste program only costs us $20,000 a year at Michigan State. That is because we
21 decay in storage. We do everything we can ourself down to nothing, and it is a good program, so it is not
22 money.
23 Think of pharmacology and toxicology. What do they do? They develop new drugs for
24 the benefit of people. What does civil environmental engineering do? They develop and they have done
25 and in fact we just finished a project using bio-remediation for destruction of methanol in an isotope, which
made it a safe waste when previously it was a mixed radioactive waste which couldn't be disposed.
They also develop biological organisms that go and clean up your monster oil spills. That

1 is being done now all over the world due to that kind of technology and we are a leader in that.
2 How about the medical cyclotrons? How many of you know of those? Those were
3 developed at our institution. They are now built and used all over the world to treat cancer. We all know
4 all of the other medical uses.
5 How about biochemistry? Finding the genes that cause Alzheimer's, and I could on with
6 a whole list of things.
7 How about plant biology, botany, pesticide research? I could go on and on and on with
8 this list of departments -- microbiology, virology. We have about 70 departments at our university which
9 utilize radioisotopes in peaceful ways in research.
10 Now what about the students? Over 70 percent of the degrees we confer, both
11 undergraduate and graduate, entail some use of radiation to get that degree. Either they are using directly
12 or collaborating with someone who does. These are our future people. There is no dollar value you can put
13 on that. If we lose people, if we lose research, if we lose students who will not come to our university to
14 get the degree because we can't do the technique, and I have begun to see some of this.
15 If we make it so difficult for them to dispose of their waste or do their research due to
16 regulations or whatever have you, it impacts and it spreads fast. It only takes one angry PI hopping
17 around the department, kind of, you know, swearing and yipping about the zealous regulators, which they
18 consider me -- that affects. It affects now and, worst of all, it affects the long-term future. This is our
19 future.
20 I have difficulty right now because we have high school students who come from all over
21 the nation doing a national program in the summer, and they do real science in real labs. They use a little
22 radiation sometimes or chemicals. We have to go through massive training, massive parental consents.
23 There are so many ways that it impacts that no one really sees directly when we sit in a meeting like this.
24 You can't put a dollar value on that. It is monstrous the cost -- to lose any of those
25 researchers, any of those research applications, any of that future science, much less our students and our
future citizens of the world today. With the problems they will encounter, it is going to make our life look
like duck soup in comparison -- easy -- and we have to remember that aspect.

1 STINSON: Thank you. Bill, you have been waiting -- if you don't mind -- Paul.

2 LIPTON: You have been talking about a restricted alternative involving staying within

3 the licensing system. I am a little confused because why do we need rulemaking on that? That is already

4 allowed. I mean if I want to transfer something to another licensee, that is allowed right now so I am not

5 sure why that is a rulemaking alternative.

6 STINSON: Frank, you have an immediate thought on that?

7 CARDILE: That is a very good point.

8 [Laughter.]

9 STINSON: Paul?

10 GENOA: Paul Genoa, representing the Nuclear Energy Institute.

11 I want to take just a minute to acknowledge that we haven't done the job we need to do

12 in talking about benefits and I wish I had Kathleen on our staff, but let me give you some comments that

13 we will submit in writing to the NRC.

14 Nuclear technologies provide significant economic and employment benefits for the United

15 States. An economic study conducted in 1995 by the Management Information Services, Incorporated, found

16 that these benefits nationally produced 4.4 million jobs, 421 billion dollars in sales, gross national product,

17 and 79 billion dollars in tax revenues to Federal, State and local governments.

18 In addition to these significant economic benefits, nuclear energy provides 20 percent of

19 our electricity without producing SOX, NOX or carbon dioxide and other chemical compounds that could

20 contribute to acid rain, ozone, haze, greenhouse effects, and other current environmental concerns.

21 On a more personal note, medical diagnosis and treatment using radioactive materials is

22 used annually to help 10 million Americans. Researchers also use radioactive materials to find cures for

23 debilitating diseases such as AIDS and cancer. This is factual. These are the significant benefits that our

24 society gains from the use of these technologies.

25 I recognize that there is a perception gap. We need to do a better job, but fundamentally

avoiding an appropriate regulatory response or taking the wrong regulatory response doesn't help address the

concerns. Fundamentally we can survive with the status quo, but if you establish a regulatory regime that is

1 more restricted, significant portions of these benefits will be lost.

2 STINSON: Mike, we will give you a chance to add to that and then, Cliff, if you are

3 ready we will turn to you.

4 MATTIA: Again -- and the reason why I argue the way I do is because we are an

5 industry. We are an industry that, much like the steel industry, has to sell its materials, and there is no

6 argument, there is no argument at all that the nuclear industry has provided a great deal of benefit and

7 service. There is no question on that to anyone.

8 Again, look at the public perception. Nuclear industry -- you have done a great service.

9 You have provided us power. Now the question is you want to do what with your contaminated material?

10 No, we really don't want -- thanks for the power, but we don't want the radioactive material coming out

11 into commerce because you provided us the power. The power wasn't radioactive when you gave it to us,

12 but the scrap material that you want to release is and the consumer is thinking I don't want it. If I

13 wanted radioactive material I would go buy it, but I don't want it if I don't have to have it.

14 The same applies to any industry, whether it is university or whether it is medical. The

15 benefits there are tremendous, but again the general public would ask do I want something that I don't

16 need, that I am not asking for, meaning radioactive material, regardless of how low level. If you never

17 released an ounce of radioactive material from a power facility, who would it hurt? You could indirectly

18 say that the consumer would be hurt, but the consumer doesn't see that. He has gotten the benefit. You

19 have to dismantle and, quite honestly, what the general public is going to say -- "that's your problem" -- we

20 have probably paid for the power facilities to begin with.

21 Same thing with waste that is from a research facility or material. You want to dispose

22 of it? Fine. You want to sit on it? That's fine. You want to put it out for general use? That is not

23 fine, because the public would feel what benefit am I getting from adding that amount of radioactive

24 material to my environment when the alternative is "don't."

25 I am not necessarily arguing that that is a valid perception, but that is a perception, and

for those of us in industry who are being looked to to take material, whether primarily a metal, and to use

it to recycle into another product, we have to look at our consumer in the eye and say it's okay, you can

1 take this little bit of additional radioactive material and use it, and the consumer will inevitably say "But
2 if I don't want it, I don't want it and can you not put it in there?"
3 That is what we have had to face. An auto industry would say I don't care how many
4 nanoroentgens are in there. If someone gets out and says, hey, you know, Ford made a bunch of Tauruses
5 from radioactive materials, Ford Taurus's sales will go right into the toilet and Ford will stop buying from
6 that steel mill, who will stop buying from that scrapyard. That is public perception which is a reality and
7 if we don't address that upfront then the material that wants to be released ain't gonna go anywhere.
8 I would venture one more comment is that the material -- yes, I know material has been
9 released, and it is being released under Reg Guide 1.86, which is still potentially able of setting off a
10 detector, which answers the question for the last few years why all this radioactive metal has been showing
11 up in scrapyards that has nothing to do with the source. It is all this stuff being released under Reg Guide
12 1.86.
13 Again, the question is it is out there but it is not wanted because the perception is if it
14 sets off the detector, if it has a radioactive designation, it is deemed as hazardous, as dangerous, and we have
15 to address that first because unless you want to put it all into a landfill, you have to accept that the
16 steelmakers and the recyclers and the consumers need to be able to tell you what they are tolerant with,
17 what they will accept, how they will accept it, and who will accept it.
18 STINSON: Thank you.
19 MATTIA: And then you can have a rulemaking as to how to get it into that form.
20 STINSON: Okay. Do you have just quick comments? Charles and Steve, Cindy. Do
21 you have just quick comments? Charles, go ahead.
22 WILK: It's basically a question. Doesn't the permit or the license granted by the NRC
23 include a closure plan and don't those closure plans include financial assurance that should cover the
24 disposal costs of this material?
25 STINSON: Go ahead, Tony.
HUFFERT: I'll try to answer your question. What you are talking about is
decommissioning and I think what we are talking about is something a little bit different.

1 This proposal would not necessarily be limited to decommissioning. It would be included
2 with normal operations.
3 STINSON: The release of material would be included with normal operations, not just
4 decommissioning. What you are talking about, those kind of parameters I guess are spelled out in
5 decommissioning or licensees under decommissioning.
6 HUFFERT: 10 CFR, Part 20.
7 WILK: So the license is never -- did not cover financial assurance for disposal of normal
8 production, waste from normal production.
9 STINSON: In the interim --
10 HUFFERT: It is my understanding the answer is no.
11 STINSON: Okay. Steve?
12 COLLINS: Steve Collins of the State of Illinois and the CRCPD.
13 The actual evidence from the states responding to the monitor trips is that most all of
14 those responses are not the result of releases under Reg Guide 1.86 criteria. There are a few, but across the
15 nation about half of those are due to naturally occurring radioactive materials that are and always have
16 been totally unregulated.
17 Another one of the high percentages comes from those generally licensed devices where
18 institutional controls have broken down. Whoever the general licensee is did not keep track of it the way
19 they were supposed to, and send it back to the manufacturer for disposal. Basically all they had to do was
20 keep track of it and when you are through with it, send it back, but their controls did not work and so it
21 shows up at a scrap dealer. That's the majority, not Reg Guide 1.86 releases.
22 STINSON: Thanks for the clarification.
23 CARDILE: Could I just follow up? I just want to clarify one thing. We talked a
24 little bit, and I don't know the gentleman's name, but we mentioned about the restricted use, the license
25 restricted use, that maybe you should just take it off the table as far as any rulemaking.
I guess before we take it off we want to at least think about and make sure we are doing
the right thing because I guess you mentioned about transferring material within the license and that is

1 already okay, and so there's no need for rulemaking, but as we talked about earlier, the material we are
2 talking about is potentially a tank or a pipe or some piece of equipment. If what you are talking about at
3 this end for restricted use is a drum or a shield block, well some process has to take that material and
4 convert it from the tank to the shield block or the drum, and I guess the question I would have is is that
5 process licensed? Does it need to be licensed? How would we get the material from here to here?
6 LIPTON: There are licensed facilities that do that.
7 CARDILE: I was just going to say -- you may talk later or even in your comments you
8 could present us with some more comments about that --
9 LIPTON: Ever hear of Metal Note -- I mean --
10 CARDILE: Excuse me?
11 LIPTON: There are licensed facilities that do that. I mean it stays within the licensing
12 system. I mean I don't want you messing with that.
13 CARDILE: Okay.
14 STINSON: That was Bill Lipton -- for our transcriber. Cliff Honnicker. We are ready
15 for your -- sorry to ask you to scream but that is basically --
16 HONNICKER: We are at 4 o'clock in the afternoon. Right behind us there is a party
17 and it is not the best of times but it is not the worst of times either, and I am really grateful that you
18 invited me to come.
19 I have been exposed to this nuclear issue since about 1973 when my mom first got
20 involved in dealing with this issue and I don't have time to get into the whole history of it, but I wanted
21 to bring this -- discovered in my mom's old files -- a 1980 letter that she wrote to the NRC that was
22 dealing with this issue, this same area of rulemaking is shall we release this material into the open market
23 and what is the environmental impact and what is the human impact of all that?
24 So I wanted to share with everybody here at the table a copy of that letter and you can
25 even maybe get a chuckle or two, a little bit of deja vu, and a little bit of the industry response to well
how would we deal with increased cancers, for instance.
Also, I want you to look in that letter and note that it was discovered that there were

1 5,000 public comments to this issue in 1980. My mother made a FOIA for NRC to provide her those
2 comments and to provide her the responses that NRC made to those comments and that was never provided,
3 so the interpretation of that is that the NRC made no comment to those responses, but the endpoint was that
4 the NRC denied in 1980 the ability to freely circulate this into the economy.
5 As I understand it, over the last 18 years there's been five attempts to circulate this into
6 the economy, circulate new rulemaking and each time it has been turned down, so one suggestion that I
7 would make would be that next time that you try this, and I have a suspicion, I mean I just have this kind
8 of itchy feeling in the back of my neck that it is going to be rejected this time around -- I just have that
9 feeling, so maybe 20 years from now when you try it again that you compose a historical record of the
10 scientific studies that were done -- this SAIC piece that was done, this piece earlier in 1980 that was done,
11 all the scientific record that was done, and to have that as the institutional memory.
12 It is like your fellow over here at EPA had no institutional memory of the earlier EPA
13 positions, so that might actually save time and money and bring a scientific history to the whole issue and
14 at the same time include the public's comments, the public reaction, the public response, so that you have a
15 full picture of what is going on with all of this, okay? So that is the first thing that I am going to hand
16 around.
17 The second thing I am going to hand around is the letter from the EPA from 1980 that
18 voiced the position of why the EPA took a stand against this. I think that the position that they took is
19 remarkably similar to the gentleman in the metal recycling industry. It is just very calm, very
20 straightforward -- here is the pragmatic problems that we face in dealing with this. It is not the full letter
21 because I didn't, I didn't have enough time to copy their full page by page response to the EPA thing and
22 that is where the ALARA comment came in, but I can get a full copy to you guys later, and then you all
23 can distribute it as part of the public record.
24 Finally what I want to pass on is that my own participation -- we take full circle. The
25 son steps in where the mom 20 years earlier was dealing with this issue. And I was, I've been involved in
dealing with affected nuclear workers at the K25 site who'd moving thousands of drums of substance.
Okay, I'm not even gonna get into the issue of what they were moving. It may have been nickel; it may

1 have been lithium; it may have been other materials. But the whole thing is sort of clouded in
2 classification issues, and I just don't want to go there in this meeting. And I don't want to go where that
3 material went, because some of it went off-site after hours, unmarked, etc., etc., etc. I don't want to go there.
4 But that's one of the perception problems that we're, we're gonna have to deal with all of this is the past
5 record of, of the Department of Energy and its credibility problems.
6 The Nuclear Regulatory Commission -- these people down here have been incredibly
7 polite, I thought, in not pointing out that the proof of the pudding is in the practice. And the proof of the
8 pudding for the metal recycling industry is that the Nuclear Regulatory Commission historically has had to
9 regulate license control nuclear material out there in the form of these medical source materials.
10 But you failed -- obviously, utterly, you have failed because it keeps winding up in their
11 cauldrons. And it keeps costing them millions and millions and millions of dollars to replace cauldrons, to
12 have these facilities cleaned up, to have workers' lost hours, lost wages.
13 So the proof of your ability to regulate this material, to oversee it, to have compliance, to have radioactive
14 police making sure that it's done 100 percent effective is not proven in their mind. I think that that was
15 an unstated assumption today, and I think that it needs to be stated, that the NRC has failed in that. And
16 so it's not perception that is the problem; it's the proof of the practice, is in what you've done in the past.
17 And as far as the Department of Energy, the third thing that I'm gonna be passing along deals with the, my
18 request for information regarding the recycling of radioactive material that is in part based on a billion
19 dollar lawsuit that was filed at Paducah.
20 And that keytam suit, it was alleged on page 40, I believe it was, that radioactive metals
21 -- particularly nickel, aluminum, uh, other materials -- were being melted, recycled, sent out the door.
22 Right now -- 1999 -- with no regulatory oversight. That was in a lawsuit filed in July. Okay?
23 Now we had heard from workers that this was going on. We have heard now from a lawsuit and we have
24 heard from other sources in Paducah and Oak Ridge that that was going on.
25 I wrote Chip Cameron on October 7th. And I'm gonna give you a copy of that letter,
okay, that asks what, here's the scenario. This is what's happened, a rogue contractor, if you want to call it
that, is taking radioactive material; they're melting it; it's not being decontaminated. It's being sent off-site;

1 it's being sold to an intermediary. The intermediary disguises the identity of that material and then it's sold
2 to commercial people.
3 I said, who is the, who are the people that I need to go to at the NRC or the DOE to report this? What
4 are the laws that are broken? Who is responsible for the wrongdoing? Who goes to jail if it's proven that
5 this has happened? And what recourse do the people who have bought that radioactive metal, what
6 recourse do they have once that's been discovered?
7 Now, I sent that October 7th. And I also said, who the heck are these people who wrote this dadgum thing
8 called NUREG 1640? Because I can't make heads or tails out of it. I want to see what orders they were
9 given in writing this thing. And I wrote that October 7th, and I sent it confirmation of delivery, to make
10 sure it got there. It got there. Cameron got it. He said he gave it to DOE people. I don't know if that
11 was Dan Swede or Judson Lilly. But I would like to know who from the DOE got that.
12 And I would like to know why NRC nor the DOE responded to, to give us the answers
13 to those very basic questions. The answer in itself may be, your non-response. It may be that there is no
14 one to regulate. There is no one there to oversee. There are no laws there to deal with people who break
15 the law, what we see as a very -- you know, no debate. You should not be selling radioactive metal into
16 the market place.
17 So if we can't get compliance, regulation, oversight, on the current problems, why
18 introduce a whole new layer, a whole new level of uncertainty into the equation? And I think that that
19 might be part of the unstated but, to me, palatable message that is coming from the regualtors.
20 And the last point that I'm gonna make is that, number one, the NUREG thing that you're implying is
21 completely based on hypothetical numbers. What is out there is that the Department of Energy, the Atomic
22 Energy Commission, ERTA may in fact have been involved in the recycling of radioactive metals as part of
23 their operations. And there is ample documention for that, that Mr. Guttman wrote a letter to you guys on
24 November 1, brought that to your attention.
25 This July keytam filed in Paducah brings that to your attention. My October 7 letter brings that your
attention. My August 7th or August 20th letter to Leah Deavers, the Head of Oak Ridge Operations --
brought that to her attention, and we asked for information. Give us the information. Tell us. But we get

1 no answer. No response.

2 So it may be that classified national security issues are going on there that, that under the

3 rubric, under the guise of national security, this material is moving around, either within the loop of

4 government facility or being sold off-site. We have evidence that it is being osld off-site, has been sold

5 off-site.

6 So that's something that needs to be dealt with, but I don't see anybody at the NRC --

7 and I mean, Chip Cameron is right up there in the top of the NRC, in the Office of General Counsel. If I

8 can't get relief from him, then what does the average citizen have in terms of protection?

9 And the last thing that I'm gonna say is that, that there is not perception that you can make rules on.

10 You could make rules on basic proof. And the basic proof could be tracking down the affected people, both

11 in the distant past, in the intermediate past, and in the current working area of people who are working

12 around this and who are suffering from health problems.

13 You could look at their health problems and you could determine, number one, before it gets to a little kid

14 with braces or to a woman with an IUD or the person with the frying pan, before you deal with those

15 hypothetical situations, deal the proof. Deal with the real issue right now and look historically at the

16 people who've been affected. That is proof, and that is something that you could make rulemaking on. But

17 if you don't make it completely independent of DOE and NRC and its favored sons and favored daughter

18 contracts, like the collusion between this SAIC issue -- and I see this is as collusion.

19 If you're unable, unwilling to provide the documentation on the contract between SAIC and the NRC, it's

20 collusion -- then you have no credibility. And until you get credibility, forget it in terms of making this,

21 these broad efforts to pass this stuff off to the public. And let me pass this around.

22 STINSON: Great. And if you could start, maybe start one document in one direction

23 and one in the other, people could take them --

24 HONNICKER: Well, I've got 'em all sorted out.

25 STINSON: Okay. Great. We are going to take a break. And what I'm gonna suggest

is that we break for 20 minutes until 4:15, let these people get started. And we'll continue to work on the

noise level next door. At that point, we're gonna come back and talk about aluminum.

1 Also, if you have any suggestions, Mike and I are both here and, for how to continue this
2 discussion and make it most productive, material, my material, we are open to your suggestions. Thanks.
3 [Recess.]
4 STINSON: What a deafening silence. It really helps.
5 Okay, I understand that the group that is currently convened next door to us will not be here tomorrow.
6 Everybody clap, yay. So that should be the last we have of that interruption.
7 Why don't we just walk through the table and see that we understand what each of the, what's meant by
8 each of the columns and begin a discussion on aluminum to get a sense of whether we are gonna be able to
9 explore aluminum in any depth through this method. This is an experiment in itself. We're trying to see if
10 there's a way to tease out some of the distinctions between different materials and what's gonna be necessary
11 to understand the implication of control of different materials.
12 So first, why don't we see what Dan Swede has to say, and then --
13 SZWED: I just want to -- speak into the microphone.
14 STINSON: Yes, start with that.
15 SZWED: Speak into the microphone. I'm Dan Szwed. Just a few comments on the
16 discussions over the last half-hour or forty-five minutes. We seem to want to take this restricted use issue
17 off the table and go to a full, unrestricted use. And from my perspective, that's what we have today. And
18 that's been unacceptable to the metals industry.
19 The way the metals industry has responded is we have installed very sophisticated, very
20 expensive radiation detectors -- at the truck gate; at the railroad gate; on the scrap bucket; at the arc
21 furnace, or whatever melting furnace we're using. We currently reject loads. We have rejected loads. And
22 we'll continue to reject loads because of radioactivity.
23 We've heard about all of the wonderful things that radiation or nuclear medicine have done for society, how
24 we've controlled things by letting sources sit around for years and decay, but no one appears to have taken
25 the initiative to solve the problem.
STINSON: Can you move the microphone just a little closer.
SZWED: We think the NRC has failed to control the encased sources. Industry again

1 responded by going out and installing detectors. We needed to protect our workers. We needed to protect
2 our product. And we've done so.
3 So with the inevitable of all the benefits that we've received from nuclear energy, from all the weapons
4 development, the technology boom, clean nuclear power, the day has finally come where we've got to deal
5 with the waste problem. This is not unlike what highly regulated industries like metals have faced over the
6 last twenty and thirty years. Nobody liked the smoky skies; nobody like the polluted waters. Nobody liked
7 the hazardous waste being shipped off-site from our facilities.
8 We were told, clean up your act, and we did it. And we didn't do it by saying to our
9 customers, for every pound, for every ton of steel you take from us or you buy from us, you have to take a
10 pound of our hazardous waste. The open markets just don't work that way.
11 It sounds like what we want is we want an open market, a free market disguised as some type of very
12 stringent regulatory control. And frankly it's just not gonna work.
13 STINSON: Okay. Peter, did you have a -- opening, closing type of comment?
14 HERNANDEZ: Peter Hernandez. I had a question. The comment was made earlier that
15 institutional controls can't be trusted. And I believe that that's true. But I don't understand how you can
16 apply that only to the restricted use option. Why wouldn't institutional controls not be trusted for free
17 release as well? Are you saying that in the free release situation, everybody could be trusted to make sure
18 that no material is released above the free release limit? STINSON: I'm sorry -- I'm sorry, you've
19 gotta use a microphone. I'm sorry. I had to consult the -- do you have a question? Who'd you pose the
20 question to?
21 HERNANDEZ: I did ask the question.
22 STINSON: To, to whom?
23 HERNANDEZ: The folks who are advocating eliminating restricted use category because
24 institutional controls can't be trusted.
25 STINSON: Um hmm. Okay, so we'll give a chance for anybody to respond that would
like to.
CARDILE: Can I just add a clarifying remark? When we mentioned earlier about

1 taking it off the table or not taking any restricted use off the table, we were only talking. And nothing's
2 coming off the table today. Um, we're only talking about getting more ideas. We heard a little bit about
3 how going from a license generator to a licensed product like a steel drum or shipping drum, or a shielding
4 block may not need a regulation to be written because it's, it already can work under the existing
5 procedures.
6 Nevertheless, it's still on the table in terms of trying to understand what can be done with this material. So
7 -- and it would still be on the table in terms of explaining, I think to our Commission in March of 2000,
8 here's the material and here's various things and here's what we've heard, and we've heard that licensed --
9 continuing the material in some licensed, uh, procedure or arena is a possible way to go.
10 The other thing that we want to make sure that we understand from everyone here --
11 we've heard a couple of different things. We've heard with regard to other types of restricted uses, where
12 the material comes out of a license generator, it's surveyed, and once it's surveyed and leaves the control of
13 an NRC licensee, at which point the NRC has no licensing control over it anymore -- it goes, for example,
14 perhaps to a, a person who handles scrap, perhaps a steel manufacturer who would then send the material to
15 only certain uses, for example a bridge. Perhaps military equipment, such as a tank. Or it could just be
16 thrown in a landfill, put in a landfill becuaes these exposure levels are much lower to the public.
17 So the question would become, the person who takes the material and brings it to a
18 unlicensed use, how do we make sure that the material only goes to these uses where people are not exposed
19 and doesn't wind up here. One way to do that is to just ahve some kind of -- I'm just talking off the top
20 of my head -- some kind of tag on the equipment where you knew that, okay, it was only going to go to
21 these restricted uses. Obviously, that's probably not gonna work, but what might work? Does the NRC
22 need to license the manufacturer of the material to be sure that it goes to this military tank? Does the
23 person who builds the tank need to be licensed by NRC in some way?
24 So you've heard a little bit here today about concern about whether institutional controls
25 assuring that the material would wind up in these uses -- we've heard some questions about whether or not
that can be trusted or not. And as I say, we really want to hear what your thoughts are about how to go
from, you know, which of these is viable, licensed or unlicensed, and the path to get to them, which of those

1 is viable?

2 STINSON: Okay, so continuing that discussion on restricted, let's give Steve to answer the

3 question about trusting institutional controls, at least as a start.

4 COLLINS: I'm one of the people that made a remark about the institutional controls, so

5 let me clarify in the context of when I made the statement, because it's coming out differently now.

6 If the regulatory agency issues a license that covers certain material that includes what I'll call institutional

7 controls now, but then they follow up through inspection and other accounting methods to make sure that

8 those controls over a period in time are in place and are being followed through and are being kept. I

9 have a pretty high level of confidence that things will continue just fine and compliance will usually be

10 there and there won't be any problems.

11 It's when you set up a system that basically relies on institutional controls where it's

12 unchecked, uninspected, unmonitored over a long period of time, that's where I ahve no trust or faith that

13 the system will work. And the general license devices in the situation that we're in now that so adversely

14 affects the metal recycle industries is my main example of that. That's a situation where, for certain

15 categories of materials, generally licensed materials for certain of those, basically a system was set up, people

16 were allowed to receive them, and there was never any follow-up or tracking or no one ever going, in many

17 cases, to ensure that those institutional controls were in fact maintained. And that's where the system has

18 fallen down.

19 Some of the states, when we became agreement states, said that's not good enough, and we

20 started going back and trying to rebuild the database and developing an accountability system to get control

21 of that again. And some of the states have already completed that and have good control. The NRC is in

22 the process now of regaining the control over part of that; it's very expensive to do that and it basically is

23 gonna cost fees for all of those general licensees that, you know, prior to this time, never had to pay. But

24 they are gonna bear the cost of this.

25 I'm sure the steel industry's response is, better them than us. and if they're the ones that's

using the gauge and they're receiving the benefit of it, it's only fair that they should have to pay. Does

that help clarify and answer the question? Thank you.

1 STINSON: Okay. Mike and Kristin, you've both got your cards up. Are you taking us
2 into aluminum or are we continuing this discussion either about restricted -- okay. Go ahead, Mike, and
3 then Kristin.
4 MATTIA: Is there a future for recycling uncontaminated material from nuclear
5 facilities? I would say the answer is yes, provided that the recyclers, the steel mills, and the consumers all
6 agree on what "uncontaminated" is, meaning that it's not contaminated below a certain level, but it's
7 uncontaminated.
8 Is there a future for reuse or recycling of decontaminated material or material that is
9 contaminated to a low level, or both? I would say possibly, again provided that the people who are gonna
10 take it and recycle it and melt it are assured that their workers are protected, that their facilities are
11 protected, and they have individuals or consumers that will buy it. And that goes back to the premise of
12 perception, that these things are, can be worked out. These things can be agreed upon.
13 But until, until you have consumers and producers agreeing on what are the ground rules
14 and who will accept what, under what circumstances, under what definitions, you have almost the situation
15 that you had back some years ago when M&M Mars stopped making green M&Ms, I think it was. Why?
16 Well, because there was a green dye that was associated with having a carcinogenic effect. Now
17 none of the M&Ms that Mars made used that green dye, but M&M sales dropped because you have a
18 handful of M&Ms, you see green, they had to have been dyed, therefore, I'm not buying M&Ms --
19 COLLINS: It was the red ones.
20 MATTIA: The red ones, thank you.
21 [Laughter.]
22 COLLINS: It was in a red and green package.
23 MATTIA: I missed out on eating a lot of green M&Ms, then.
24 [Laughter.]
25 MATTIA: Again, it's perception. You know, the one thing we've seen in the U.S.
market, as well as the world economy market, is that things can be worked out. The last thing I wanted to
mention, we talked about global markets and I just came back from a meeting some months ago in Geneva

1 that was hosted by the European, Economic Commission of Europe. And basically that meeting was
2 convened because the steel producers in Europe were getting wind of the deregulation of the free release of
3 material and were saying, in essence, what?
4 And they got together saying, we have to send a signal to the European Union that your release levels
5 aren't necessarily our acceptance levels. And so now they've got a release criteria that is being passed along
6 and adopted, and you've got steel facilities in that same European Union who are in essence revolting, saying
7 I'll be darned if I'm gonna buy that stuff because you guys did not consider us when you passed this
8 concept.
9 So I think what we need to do is learn from that lesson and make sure that all of the
10 stakeholders -- the consumers, the producers, the recyclers. They are in agreement as to what's compatible,
11 what's usable, what isn't, what's acceptable, whose definition defines what. And then when you have that,
12 then you can have a rulemaking that will determine how you take this material and introduce it into those
13 markets that have said in advance, we'll take it.
14 STINSON: Paul, and then Kristin.
15 GENOA: Paul Genoa, Nuclear Energy Institute. Just a clarifying remark regarding
16 institutional controls and what I would call compliance with existing regulations, just to make the
17 differentiation. They are two different issues, and clearly one can look at the history of mankind and see
18 that numerous mistakes were made but lessons were learned and we moved forward. You have to
19 acknowledge that mistakes are made. You do your best to fix them and corect them so they don't happen
20 again. But you move forward.
21 Now, institutional controls is assuming that some extra-regulatory activity will continue
22 and impose a restriction on some activity. Given what we're talking about, we perhaps would allow
23 materials, radioactive materials, to be fabricated into a railroad tie or a bridge girder. And perhaps it
24 would be identified. Perhaps there would be records. Perhaps the railroad industry would take
25 responsibility to see what happened to. I mean, you could think of any number of restrictions. Whether
they're effective or not is a different story, and you have to learn from that.
That is distinctly different from compliance with an existing regulation, which a licensee

1 has a requirement to perform an adequate survey, conduct appropriate evaluations prior to the release of
2 matieral. In this situation again, we have to acknowledge that people are human, they can make mistakes, or
3 they perhaps could even do it intentionally. That's why the regulatory agencies, the NRC and the agreement
4 states have an enforcement branch. They have inspections and they have enforcement and they can impose
5 civil penalties. So I believe that it is possible to set up, and I believe that we currently have, a system
6 that adequately protects public health and safety because of those elements. And I think the compliance,
7 actually, in the industry, is extremely high. And I think that you, you could probably point to very
8 limited applications in the commercial industry where non-compliance has resulted in a real injury to the
9 public.
10 Now take that a step further and look at long-term institutional controls. That adds yet
11 another level of complexity into the dialog. I don't believe it's possible to get there until you first set a
12 free-release criteria or an unrestricted release criteria, and that's the only reason I suggested that it may be
13 premature to try to address restricted and unrestricted at the same time. I believe it's a step function; you
14 have to have one before you can discuss the other rationally. Perhaps it can all be done in one rulemaking.
15 I'm not sure.
16 STINSON: Kristin, and then Tony.
17 ERICKSON: Okay. I would -- Kristin Erickson, Michigan State University. I think
18 that's what, in my view, this is all about, what we've been talking about here. We're getting to a point
19 where what we need, and I think the problems we have now, are because we don't have a uniform standard
20 that we all have to abide by that's very crisp, very clear, well published, well-known, and easily measured.
21 We have that for air; we have that for water. And we all do that. We know our numbers. In fact, at
22 MSU, we take ten percent of all of that and stick with it easily -- no problem.
23 Right now, we don't have that for solids. And because of that, you can see some fairly
24 capricious applications and some capricious responses, not because anybody means to, but because if a person
25 goes to NRC and proposes, well, I've got fifteen tons of soil and all I have -- I'll tell you what one person
just did to me. "Well this amount of water, the tritium in this activation that we might have is only the
same level as what would go out in the sewer." I said, that has nothing to do with the health and safety

1 and the contamination if it breaks and spills all over and we have to clean it up. They are two different
2 animals. And you can see misunderstandings. You can see mis-information -- again, the other problem that
3 I see that really needs to be addressed and that I will laud if it happens here -- a consistent, uniform
4 defined set of parameters for the equipment and the measurements.
5 I've seen people take an instrument and say, well I found nothing; it was less than
6 background, I mean it wasn't even background. What instrument was it? Well, it was a beta pancake.
7 And what are you looking for? Iodine 125. That's a gamma; you can't find it. Or, I used that instrument
8 for tritium, which no instrument can detect except a simulation counter.
9 I've seen these things happen from time to time with people out on our campus that are new learners.
10 They've got a lot of things in place to prevent that from causing a problem. But those things do happen,
11 and without a defined limit, first of all, and defined ways of detecting, you must use the appropriate
12 equipment, calibrated for that isotope or for that radiation.
13 And you must prove with your measurements and with your calibrations that this
14 instrument does meet this limit. Right there, that's a big part of what we do at our university, and these
15 are the kinds of standards that we need. And if we had all of that, that would be very easy to show you
16 and the industry or anyone else -- the public or whoever -- what we are doing and how we are doing it.
17 And it would be easy to administer.
18 STINSON: Okay, and that takes us to -- part of our discussion is, you know -- in terms
19 of the alternatives for control for each of the different types of material, are there certain materials that
20 might be more appropriate for a universal standard, as Kristin is advocating for, and others that might be
21 more appropriate for unrestricted, or restricted release in some scenario where it's directed to a particular
22 use, et cetera. So I want to move into that discussion. I want to experiment with doing it focused
23 specifically on aluminum.
24 The other three materials that I've heard so far mentioned -- some in this larger group
25 and some in sidebar discussions -- that we may want to add to this list are lead, nickel and medical devices,
actually, and whether medical devices would be treated separately. So I pose that question at this point.
Let me just quickly walk through really what Frank's already covered in terms of each of these columns. If

1 that's all right, Frank, I'll just quickly walk us through it. For aluminum, for instance, if we could just
2 have a little bit of discussion from you all as to what your experience is with aluminum. What are we
3 really talking about in terms of the kinds of aluminum materials that are at decommissioned or at
4 potentially decommissioned facilities, powerplants, or from other types of licensees? What's the current
5 method of release of those? And -- I mean, how does it really work in the application of the case-by-case
6 scenario? And I think that's, you know, that's the primary set of questions for column 2.
7 For, in the case of aluminum, what are the potential alternatives? Is prohibition
8 appropriate for some reason? Is it a particular area of concern that would lead to prohibition of materials
9 as being a reasonable alternative? And, you know, what about unrestricted release in the case of
10 aluminum? What would be some of the market and other kinds of implications for that material in
11 particular? If you were to establish restrictions on some of the aluminum materials that are currently
12 released in the case-by-case scenario, how would that work?
13 And then talk a little bit about, well, how should the NRC go about analyzing the
14 alternatives and completing different kinds of analysis to support a particular alternative on control of
15 aluminum, what are the potential costs of those, and how do you ensure, you know, sort of long-term
16 institutional control, or what kinds of institutional controls might be of help?
17 Do you see where we're trying to head in getting into a little bit more specific conversation? One of the
18 reasons for doing this, of course, is as much as we know and love and hear about the steel industry, there
19 are other related industries and other materials that would potentially be affected by rulemaking by the
20 NRC.
21 So we picked aluminum first because we thought maybe it's close to steel and some of the,
22 you know, market impacts, et cetera, and you know, might be able to borrow from that discussion and
23 expertise we've had in the three meetings already.
24 And I'm gonna ask, at least Paul, and maybe others in various industries, to try to kick
25 us off in terms of talking about what happens in the current case-by-case release of aluminum or how, how
might aluminum be impacted in certain industries. Did you have something, Dan?
GUTTMAN: Yeah, I've got a [off-mike]

1 STINSON: Okay. Let's --

2 GENOA: Paul Genoa, NEI. And hopefully this isn't unfortunate. I'm gonna give you
3 some very limited experience with aluminum because, quite frankly, I'm not aware of large amounts of
4 aluminum that are uniquely released from our facilities. I mean, you can envision aluminum being in the
5 carriage of certain types of equipment.

6 You can envision, perhaps, a little bit of aluminum angle iron used in very specific
7 applications. You can envision aluminum soft-drink containers somewhere in the cafeteria. You can
8 imagine some electrical wiring that might be aluminum, or there may be aluminum components associated
9 with various electronic components. But aluminum is not a -- I'm not aware of it in a unique, pure form
10 at any extent, at least in nuclear power plants where I have my greatest experience. It may be there, but--

11 But, for what -- and that complicates it because, again, in the real world, the aluminum
12 we would find is probably part of the chassis of a computer or of some kind of radiation detection
13 instrument. And we're not gonna take it apart to survey that one piece. We're gonna survey the entire
14 part.

15 So the current mechanism would be, one, based on process knowledge. Do we believe there's a reasonable
16 chance that this thing is contaminated at all? Did it ever go into a radiation-controlled area? Was it
17 ever near any free radioactive material or contamination? Could it, through its fan, bring radioactive
18 contaminated air through it in some way where it would collect? So you first do a process knowledge kind
19 of assessment.

20 If you assessment says, yeah, there is a potential, then you would have to go ahead and
21 survey. Generally, if it's aluminum, a metal, then it's going to be a hand-frisk. If it's a complicated piece
22 of equipment, it may have to disassembled in some fashion. And if it's very complicated and there's a
23 significant chance that it's contaminated, it won't be released because you can't prove that it's clean. And
24 this is the problem.

25 Oftentimes we are repeating this as if all the material we're talking about is contaminated
at this full level universally. And what I'm saying is, the bulk of the material we release may not be
contaminated at all, and we're trying to prove that.

1 CARDILE: You mention --

2 STINSON: Go ahead and mention your name and affiliation.

3 CARDILE: Frank Cardile of the NRC. You mention that you frisk it and you say

4 whether it's clean or not clean. What criteria -- I mean, you don't just say it's clean. You must, you

5 measure it against some thing.

6 GENOA: Paul Genoa, NEI. As you know -- I guess I'm reflecting on a power plant situation. And we

7 go beyond non-detectable; we go to no license activity, which constantly leaves us in jeopardy because

8 someone can always look harder. But you guys have at least have helped by saying, well this is how hard

9 you need to look. And how hard you need to look is Reg. Guide 1.86, if it's surface-contaminated. And if

10 it's volumetric, then we need to go to using gamma spectroscopy and other techniques to go down to

11 environmental LLD levels, which are not provided for all materials, and certainly not aluminum, metal, or

12 anything else. And so there's a giant hole in the guidance.

13 Fundamentally, we use the best technology we can to prove there's no licensed material

14 there. And that basically is nothing detectable above background. And you can't detect below background.

15 STINSON: So, one of these would be helpful. If anybody has any experience -- I think

16 what Paul is saying, it's small amounts of material probably mixed with other materials. If anybody has

17 experience or knowledge of a case-by-case --

18 GUTTMAN: Yeah.

19 STINSON: -- application for release of a larger amount of material, that would be

20 helpful. It sounds like Dan does; maybe others as well. Go ahead. You have to pull the mic right up to

21 you.

22 GUTTMAN: Dan Guttman, PAICE. Yeah, I'm sure Judson --

23 STINSON: A little closer. Sorry.

24 GUTTMAN: I only know part of the facts, and Judson will of course help me fill in the

25 facts here.

Aluminum, of course, is among the materials at Oak Ridge that's contaminated in the compressor blades, and --

1 STINSON: Compressor blades?

2 GUTTMAN: Compressor blades, yeah. And, you know -- are you aware of that, Judson?
3 And so, you'll help me. On the health environmental impacts quadrant -- you'll see why I'm going in this
4 order -- there was no worker analysis, as far as we could tell, of any risk recycling. And if there were, it
5 was filed in secret by BNFL with Tennessee, so who knows?

6 But, and the entity doing the recycling, MSC, was found to have lots of OSHA and other
7 environmental kind of violations. And the Tennessee State Authority didn't look at any of this stuff -- as
8 far as we know, but they're not responding to our letters. And most recently, about a couple of, a week or
9 two ago, some union, president of the local union who was working on the BNFL contract, which is not the
10 union I represent, to be clear, said that somebody's gonna get killed on the job and consumers should be
11 pretty scared about it. So that's the health and environmental impact.

12 So the interesting question is the alternatives and the cost impacts. As Judson can fill us
13 in, apparently, even though the contract was ostensibly terrifically vetted, as you'd expect a quarter-billion
14 dollar contract to be, nobody seemed to know much about this aluminum. And it appears to be
15 volumetrically contaminated, and there appears to be some dispute between the Department of Energy and
16 BNFL, MSC, Managed Reactor Sciences -- who's on first. And so, I'd like -- because this was all vetted so
17 well, as Judson has made clear, Judson to tell us exactly how DOE and BNFL viewed this before the
18 contract, the volumetrically, recycling potential, and where that dispute is now, what's going on.

19 STINSON: Well, one of the things to say up front is that what we -- while I understand
20 that ultimately this material might end up in an, NRC-licensed hands, we want to focus on, I think,
21 materials that are specifically under, right now under NRC --

22 GUTTMAN: Yes, Barbara. Let me just qualify --

23 STINSON: Maybe this can still illuminate the discussion.

24 GUTTMAN: Yeah, but this goes back to the discussion wehre I impolitely -- I apologize
25 -- interrupted you earlier. To be clear, it's obvious that all of this stuff is for practical purposes, whether
DOE's gonna default, take NRC or not. What DOE has basically said is, hey, we've got SAIC and BNFL
recycling this, but we don't, so we don't want to too directly dump this out on the market. We'll launder it

1 through the NRC.

2 So what happens is, once the waste leaves the Oak Ridge facility, as the volumetrically

3 contaminated nickel does, and as I presume the volumetrically contaminated aluminum does, although since

4 there's a dispute, who knows where that's going? Then it is not DOE; it is TETA, Tennessee, which of

5 course an agreement state; if it's got authority, we don't know yet. But it isn't DOE, which, at least

6 according to DOE, would control the waste. It's Tennessee as a licensee of the NRC, so that DOE has

7 calcualted this in a manner so that this is all, in fact, NRC jurisdiction, although NRC apparently is sort of

8 playing along, perhaps through SAIC, saying what's really DOE.

9 STINSON: Is there anything that you want to say?

10 GUTTMAN: Yeah. If you can just tell us where that volumetrically contaminated

11 material is, who's responsible or it, who's gonna pay for the recycling? Because that's the cost impact of it.

12 STINSON: Well, particularly if it relates to NRC having any jurisdiction over it,

13 ultimately.

14 LILLY: Yeah, if the aluminum is volumetrically contaminated, there is no, nothing has

15 been done to license the release of that as volumetrically contaminated. So that issue is still up in the area

16 right now, as I understand it. There's some issue whether it's volumetric or surface.

17 GUTTMAN: But is there a plan? Because this was all vetted, the contract, as you were

18 saying, two years ago. Presumably, people had a plan as to what was going to happen to this aluminum.

19 Isn't there a plan?

20 LILLY: The elements of the contract gave BNFL the option to recycle metals. It did not

21 dictate that BNFL would recycle metals. So it was a fixed-price contact. BNFL is trying to work it so that

22 they get the best cost-benefit bang for the buck for those metals that can be decontaminated.

23 GUTTMAN: Isn't BNFL, in terms of the cost impact -- aren't they --

24 STINSON: Okay, this is --

25 GUTTMAN: Aren't they making a claim of cost impact? This is a case study. Nobody

else has got anything --

STINSON: We don't know that nobody else does because they're still part --

1 GUTTMAN: Well, I just want to -- in terms of cost impact, isn't it true they're making
2 a claim against you for misrepresentation?
3 LILLY: I'm not aware of any claim on the issue of whether the aluminum is volumetric
4 or surface.
5 GUTTMAN: No, on the amounts of the material.
6 STINSON: Okay, I'm gonna ask you two to take this discussion to the side and see if
7 there are any other examples on aluminum. You know, maybe there's still some illuminating -- illuminating
8 --
9 [Laughter.]
10 STINSON: -- elements of that that may be useful to draw out. But let's see if there are
11 any other examples folks have. I don't know who was up first. Tony, go ahead.
12 LA MASTRA: Tony La Mastra.
13 STINSON: Speak up just a little.
14 LA MASTRA: I'm definitely not an expert on aluminum, but as part of some of the
15 work that I've been involved with, with the ENCRP Committee, it appears -- and this will probably go
16 under the health and environmental impact.
17 It apepars that depending on the process, if, if you have a cryolate-based process where
18 you're essentially refining your aluminum using cryolate, that the cryolate will dissolve just about any metal
19 so that if, if you have contaminated aluminum, it's much more likely that that will become, at least part of
20 it -- again, I don't have partitioning factors -- but that part of it will end up in the aluminum, whether or
21 not it's something that would normally alloy. It would be kind of -- as it was explained to me -- like
22 taking a cube of sugar and dissolving it in hot water. So the cryolate essentially dissolves just about any
23 metal. And that could be transferred to the aluminum.
24 So in one respect, I think you ought to be reasonably careful, and probably ought to
25 seriously look into what the metallurgy is and what the real partitioning is, of radionuclides that might be
present on, you know, aluminum scrap, whether it's -- it is produced in large quantities or not. I mean, I
think it's something I think the NRC ought to look at.

1 CARDILE: Can I ask a clarifying question, maybe of the group? We've heard at
2 earlier meetings that the steel that can be recycled -- and Tony had a slide on the amount of steel at NRC
3 licensed facilities -- is a small fraction of the total steel recycle, and therefore I think we've also heard
4 earlier, why, a, there's no impact at all, so why, why recycle this material? It doesn't affect the recycling.
5 Is there any information here -- I guess Paul has talked about the fact that there's very
6 little aluminum at NRC-licensed facilities. Do you have a feel on the comparison of that to the total
7 aluminum recycling industry, whether it's also a small fraction?
8 STINSON: Mike -- no.
9 GENOA: Very briefly -- Paul Genoa, NEI. Again, I'll just go back to my own
10 experience. At the last power plant I worked at, the facility had a carbon steel recycle bin. They had
11 aluminum recycle -- or, excuse me, a copper recycle bin. And they had a stainless-steel recycle bin. And
12 they had a trash copper bin. I don't think they had an aluminum copper bin, but I may be wrong.
13 I mean, you know, maybe someone else and maybe in a non-electric utility application has
14 sufficient -- I mean, aluminum's, it's out there. It's used in cooling fins; it's used in all sorts of things. But
15 I don't know that we recycled any significant amount of it, and of course I don't know what the national
16 output is, so I can't help you.
17 STINSON: Sounds like a number will need to be generated, if this is going to be
18 pursued. Mike?
19 MATTIA: I just wanted to follow up with the question, since it was raised, that there,
20 there is aluminum being, as I understand it, recycled, or is that a true statement? That there's aluminum
21 being recycled from DOE facilities? I would be interested in getting an understanding of what is being
22 recycled. What is the metal in terms of what is it being used as in DOE? Is it being recycled? Is it
23 coming out as low-level contamination from DOE facilities? Is there contaminated aluminum coming out of
24 DOE?
25 LILLY: This is Judson Lilly from the DOE. If there is aluminum being recycled right
now -- if, and I'm not sure what the circumstance is. If it's being recycled, it's either coming out as surface
clean -- that would be the only way that it would be coming out is --

1 STINSON: Does that mean no detection? Surface clean -- does that mean no detection?
2 LILLY: No. It would mean, it would mean it meets the requirements of NRC 1.86.
3 And it would depend upon whether it's being title-transferred to an NRC-licensed facility, and that would
4 be, meaning 1.86. If it's being released from the DOE facility, it would be meeting DOE Order 5400.5,
5 which the numerical values are the same as 1.86. That's how it would be done if it is going on right now.
6 What Mr. Guttman and I were trying to establish is, if it's volumetric, then there are no
7 provisions right now for us to be releasing aluminum.
8 GUTTMAN: But it could be released --
9 STINSON: You've gotta use that mic, and you've gotta be recognized.
10 GUTTMAN: But they could be released to the --
11 STINSON: This is Dan Guttman from PAICE. Go ahead.
12 GUTTMAN: But they could be released outside the Oak Ridge fence, taken over by
13 BNFL, and then sent to you guys. That's what might happen.
14 LILLY: Right. Sometimes the material is shipped as radioactive materials to an
15 NRC-licensed facility. And then at that point, when the title is transferred, NRC jurisdiction takes over.
16 STINSON: Go ahead, Mike. Follow up.
17 MATTIA: Just a follow-up question, just for clarification. If material is released either
18 from an NRC facility or -- excuse me, from a DOE facility, and it meets Reg. Guide 1.86, is it a true
19 statement that if it leaves a facility meeting that criteria, it does not have to go to another facility? It
20 currently can be released right into commerce? Is that a fair statement?
21 LILLY: This is Judson Lilly, DOE. Yes.
22 GUTTMAN: I would disagree -- no.
23 [Laughter.]
24 GUTTMAN: Under 5400.5, it says that DOE does not have the authority -- obviously
25 we have different positions, so I'm not saying I'm right, obviously, and Judson's not saying that the private
citizens' position is right. But I think there's an argument that under 5400.5, Section 11j --
SPEAKER: [OFF MIKE]

1 GUTTMAN: -- the section having to do with -- as Judson correctly described, the
2 transfer of this material, DOE can't transfer material to someone who's gonna release it for commerce -- you
3 know, free release -- ultimately, without specific approvals, which in the case, say, of this aluminum, have
4 not taken place. That is, the approval of the Assistant Secretary of Energy, Environmental Safety, and
5 Health. So there's a real question -- one of the questions that I think's gonna be before DOE soon is
6 whether what is happening there in the BNFL situation is lawful, not only from the NRC position but from
7 the DOE position.
8 LILLY: This is Judson Lilly from DOE again. There is a well-established precedent for
9 materials to be shipped from the Department to an NRC-licensed facility for title to be transferred, and
10 then for the facility to do surface decontamination, verify that it meets 1.86, and then release it into
11 commerce. That's a well-established program that's been going on for years.
12 GUTTMAN: But you don't have any 1.86 volumetric standard, right?
13 LILLY: There -- to my --
14 STINSON: Right.
15 LILLY: I think the 1.86 --
16 GUTTMAN: It's surface, not volumetric.
17 LILLY -- volumetric --
18 GUTTMAN: There is no volumetric at DOE.
19 LILLY: There is a volumetric within DOE.
20 GUTTMAN: Within DOE, but not --
21 LILLY: Within DOE there's a volumetric; I'm not -- for the 1.86 I'm not sure how
22 volumetric is handled.
23 GUTTMAN: It doesn't -- there's no, there's no Federal standard currently for volumetric.
24 STINSON: For volumetric, and that's one of the holes that's been identified. LILLY:
25 What I was talking to was referring to surface release criteria.
GUTTMAN: Okay.
STINSON: Okay. So let's just take a time check here. It's 5 o'clock. We've got three

1 cards that are up. I want to see if there's anything else that folks want to say. Mike has a follow-on, too
2 -- see if there's anything else folks want to say about aluminum, as we've taken it so far. I mean, we'd like
3 to have some understanding of folks' ideas on the various alternatives appropriate for aluminum, especially if
4 there's any distinctions between that and the general conversation that we've already had. At least, get that
5 far. And we've got, already, some thoughts on costs and environmental impacts up on the chart.
6 Let's see. Mike, did you just want to finish?
7 MATTIA: I just wanted to follow-up because, for clarification. What is the volumetric
8 release criteria for DOE, and if something is released for volumetric decontamination and it then achieves
9 that, is it correct to say that it can then be released to general commerce?
10 STINSON: And the line of questioning is relevant because of the precedent that it might
11 set for NRC, and telling you what material's already out there in the wavestream. Okay, Jud.
12 LILLY: Okay. The DOE standard that is relevant in this area is DOE Order 5400.5.
13 The primary elements of that are related to surface release criteria. There is a provision within that, that
14 allows for a case-by-case evaluation of any proposed release of materials. And that material would have to
15 be released under DOE ownership and DOE auspices. But the screening criteria for that are one millirem
16 or less. Less than one millirem.
17 SPEAKER: Per what time?
18 LILLY: Per year.
19 STINSON: Okay.
20 LILLY: And the operations office managers have authority to make evaluations. They
21 need to demonstrate that an evaluation has been done and that ALARA is being satisfied.
22 MATTIA: So, just so I understand, the volumetric release criteria for DOE is a
23 dose-based criteria, is that correct?
24 LILLY: Judson Lilly, DOE, again. It's close, but it's a case-by-case evaluation. So you
25 are not able to say it's one millirem or lower, boom, out it goes. You need to do a case-by-case analysis of
each specific proposal to do any recycling. So it's not, it's not a level standard. It's a case-by-case evaluation
that needs to be conducted.

1 STINSON: But at one millirem.

2 LILLY: At one millirem is the ceiling for that, where the operations office has the
3 authority. There are releases that could be contemplated at a higher level, but then at that instance the
4 headquarters office of Environmental Safety and Health would have to approve it. Once again, ALARA
5 would have to demonstrated.

6 GUTTMAN: There is no current federal standard for volumetric release, that's what I
7 understand, correct?

8 LILLY: We have a process, would be the best way to characterize how we handle that.
9 And it would only relate to materials where we have the title and where it's being done on our sites under
10 our control.

11 GUTTMAN: What we understand is that at least -- and I'm not sure what DOE is doing
12 is lawful, as we will find out sooner or later.

13 But what I understand DOE is doing is they are claiming they are transferring the title.
14 It's a little bit complex because the nickel, which is volumetric contaminated, is classified because the
15 transfer title depends upon the declassification, in part?

16 But when they transfer basically the contaminated volumetric material outside the DOE
17 property, DOE just says not our problem anymore. Then what happens is the entity goes to Tennessee, say,
18 and says, hey, Tennessee, you can do whatever you want.

19 And that's what happens. So DOE is sort of handing it off without any responsibility,
20 without any assertion that you can only have it at such and such a level.

21 One of the issues that I think we'll now see discussed within DOE is whether they can do
22 that lawfully under their regimen, which is this 5400.5, which cross references the 1.86.

23 STINSON: Okay, can we move on to some other points here?

24 LILLY: I would like to address one point there. The requirement that we had for BNFL
25 was that they obtain a license and a regulator for how they would handle any materials shipped to their
site.

They met that requirement by getting a license for the nickel with the state of Tennessee,

1 so we did not throw up our hands; we required that they demonstrate to us that they had a regulatory basis
2 to do what they have been doing.
3 STINSON: Okay, I'm conscious of the time, and we're going to take five more minutes, if
4 you're willing, and wind up this part of the discussion.
5 Kristin and the Paul.
6 ERICKSON: Kristin, Michigan State University.
7 First comment: Aluminum is not an issue for most academic and medical institutions.
8 We just don't have it other than little caps on our vials or something. It's typically nothing for us,
9 incidental things.
10 The second thing is a question on this 5400.5. Is that one millirem per year per gram
11 or for a whole item or what, that DOE limit?
12 LILLY: This is now a DOE meeting here.
13 STINSON: Thank you. I don't think you needed to state that, but --
14 LILLY: The one millirem is based upon the maximally exposed. It's a dose-based
15 analysis. It's the maximally exposed individual is the scenario that's modeled for that circumstance.
16 STINSON: Okay, Paul?
17 GENOA: Paul Genoa, NEI. I guess I wanted to just try to help you work through the
18 rest of the boxes, so I --
19 Again, aluminum makes it difficult. So the current controls are a survey evaluation, as I
20 discussed before.
21 The premise of that is to allow for what I call process knowledge, or actually what EPA
22 calls process knowledge, and what we would call an evaluation that may or may not include a physical
23 measurement.
24 So, if you don't think it's contaminated, you know, legitimately, and you are willing to
25 document that, and willing to take the hit if someone questions you, you don't have to actually do a physical
measurement.
And we think that is important, and has been practical.

1 The potential alternative controls are, you could say that you're not allowed to release
2 aluminum, you have to save it. You could release aluminum only for disposal, either in a Part 61 facility
3 or in a landfill.
4 You could release it for disposal and/or reuse, so that if you had an aluminum wrench,
5 you could release an aluminum wrench, but you could not release it into scrap for recycling, or you could
6 allow it for disposal, reuse, and recycling.
7 The health and environmental impacts clearly are directly linked to the allowable
8 contamination associated with the material, and since we're not willing to talk about what that dose is, it's
9 hard to assess.
10 But in the range that you're offering, which is 0.11 or 10 millirem annually to the
11 maximally-exposed individual, I would say that the preponderance of evidence in the scientific community is
12 that the health and environmental impacts would be very small, if not insignificant, inconsequential, or
13 trivial.
14 The cost impacts are directly related to the controls imposed on the licensee to monitor the
15 material. If, as my example pointed out before, if you fly from an airport, you have to metal detector.
16 If it takes you 30 seconds to get through the metal detector, it's not a problem. If it
17 takes you two days, people won't fly.
18 So, if the controls imposed on the measuring of the material require such scrutiny and
19 such a level of forensic science that is an inordinate resource to evaluate the material, our business goes
20 down the tubes and you can kiss the $400 billion in gross profits goodbye.
21 That's the worst case, and hopefully we'll come up with something that's rational.
22 The type of analysis we do today which is direct risking -- we also, I should say, for
23 small tools, we can use instruments called box monitors, and if we actually had a standard, we could impose
24 other automated tools.
25 Finally, the analysis needed, obviously you've pointed out how much aluminum is out
there, what are the potential dose pathways, and what is the potential risk to the public, and what are the
potential radiological and non-radiological impacts on society and other industries in general?

1 And, finally, controls. I'm not sure what you mean on that. I guess that's what level of
2 control is necessary to ensure that you meet the criteria that would be established. Again, that depends on
3 the criteria established, and how hard you have to look.
4 STINSON: While you have the floor --
5 LESNICK: I was just going to ask Paul, given what you said, for you, for your industry,
6 what would be your preferred alternative for control for aluminum?
7 GENOA: For aluminum, my preferred alternative would be to establish a realistic
8 pathway analysis that would identify a critical group. I would establish a dose-based standard for that
9 material that would be recognized by the international community as being safe, trivial exposure, et cetera.
10 I would then develop -- I would pass a regulation that put in place that dose limit, and
11 then I would put in place guidance documents that would determine exactly what the requirements were to
12 meet that. They probably would include, I would say, a stylized list of actual concentrations that we would
13 be supposed to meet, sensitivities of instruments criteria and so forth.
14 And it would be the same for a power plant as it would be for a fuel cycle, as it would
15 be for a university, as it would be, ideally, for a French radiopharmaceutical company.
16 LESNICK: May I ask anyone else in the group that might have a different alternative
17 for control for aluminum, other than the one Paul just suggested?
18 GUTTMAN: The difference between, I guess, Paul's perspective -- Dan Guttman, PACE.
19 I'm not purporting to talk about the electric utility industry here, but with the DOE
20 situation, the error, the erroneous assumption in your analysis is that, in fact, the standard has got some
21 relation to what actually happens in the real world.
22 To take the particularly unfortunate case we were talking about, Tennessee, you've had
23 OSHA controls for workers in effect ten, 20, 30 years.
24 You had Tennessee regulating, overseeing that MSE facility, and you had the Department
25 of Energy overseeing it, because they had a contract.
And people just kind of walk in after they award this quarter-billion dollar contract to
MSE and find zero compliance with basic OSHA personal protective, lockout tag. They weren't even

1 looking.

2 So basically, if we look at the empirical evidence, the rule of thumb assumption is that

3 there will be no relationship at the DOE between your standard and the actual exposures. And there is no

4 evidence to controvert that, as far as I can tell in this particular proceeding.

5 STINSON: And I think we've heard at every meeting, concerns about being able to

6 enforce whatever standard is set. It's going to be a continuing issue, and certainly you bring up experience

7 that points out why that concern is there.

8 Susan?

9 LANDAHL: Susan Landahl, ComEd. I think there might be some misperception out

10 there, based on this discussion with DOE and Reg Guide 1.86.

11 I just wanted to clarify that for NRC licensees, at least in the nuclear power business, we

12 don't use Reg Guide 1.86. I wish we had a clear cutoff like that document presents.

13 So for us, it's no detectable activity. And that really is different than what I'm hearing

14 from the DOE sites in terms of what they can release.

15 We would welcome having some numerical value, but we don't have that today, and we

16 don't operate that way in the nuclear utility business. Thank you.

17 STINSON: Okay, we appreciate your patience as we've continued the discussion. Peter,

18 you're trying to get in right under the wire, aren't you?

19 HERNANDEZ: Just a quick question for Ms. Landahl. I'm Peter Hernandez.

20 When you say that there is no detectable activity, can you translate that into a DPM?

21 LANDAHL: We have some industry guidance or sort of the practice that we've figured

22 out ourselves. If I could use that box monitor as an example, we might set that for something less than

23 5,000 dpm.

24 But because of the uncertainty in the measurement technique and our desire to be

25 conservative, it might actually alarm with a value of 4,000 disintegrations per minute.

And even though that's less than what we are calibrated for, set for, once we see that, once we get that alarm, once we know that we have licensed activity, we now treat that as radioactive material.

1 And when we have small volumes of material that we can't by NRC -- while they may
2 not be regulations but certainly the way we have as an industry have interpreted what the NRC has been
3 telling us, if we have a small volume of, say, an oil sample from a pump, what we do is, we put it on a
4 germanium detector which is not going to quantify the volume for us, and we just look for a Cobalt-60
5 peak.
6 And if we can define that peak, we don't release that sample. And in that case, you may
7 be talking about well, well below anything measurable by any other detection device, but we've been told,
8 no licensed material.
9 STINSON: Thank you. That was a helpful clarification. Okay, let me just say that for
10 tomorrow, you kind of have a little homework for tonight, and I'm sure this will thrill you.
11 If you can, take a look at this table. Think through copper, concrete, soil, what kinds of
12 materials, radioactive materials we're talking about for each of these, and how they're currently treated.
13 Take it across the matrix, if you will, and we'll try to walk through each material in a
14 fashion similar to what we just did for aluminum. We'll do that for lead and nickel and medical devices.
15 I understand that Charles Wilk will be back tomorrow, so hopefully we'll get into some
16 diverse discussion on concrete.
17 We need to take public comment, and I also want to find out how many people are going
18 to be here tomorrow, sitting around the table?
19 [Show of hands.]
20 STINSON: How many people have to leave before 3:00 tomorrow?
21 [Show of hands.]
22 STINSON: Okay, we'll see how it goes tomorrow. We'll be as efficient as we can with
23 your time, because I know some people have great distances to travel.
24 Anybody from the audience want to offer any thoughts on this afternoon's discussion?
25 BECHALK: I'm Christina Bechalk and I'm with Collier Shannon, Rill and Scott. We're
representing the Metals Industry Recycling Coalition.
I just wanted to offer another alternative, and this is for aluminum. And this would

1 apply across the board to all of the metals.

2 And we would support monitoring at the point of release. This goes to the whole issue of

3 wanting a market solution and we would also support a market solution, but the real issue here is

4 cost-shifting.

5 As I understand it, the nuclear power industry wants the metals industry to incur all of

6 the costs associated with monitoring and keeping the radioactivity out of their mills.

7 We think that this problem is best controlled at the source.

8 STINSON: Okay, thank you. Any other comments?

9 LIEB: Rob Lieb, First Energy. I came with great expense to my company to be here. I

10 have read a lot of material to bring myself up to speed.

11 The materials I received about this meeting did not indicate that I had to contact

12 somebody to be a participant. And I find it very frustrating to be in the peanut gallery and to not be

13 allowed, basically, all day, to provide any of my own input.

14 STINSON: Are you going to be here tomorrow?

15 LIEB: Yes.

16 STINSON: Let's talk after the meeting. Are there any other comments?

17 [No response.]

18 STINSON: Okay, great, thank you all for your time today. We start at 8:30 in the

19 morning tomorrow.

20 [Whereupon, at 5:20 p.m., the workshop was concluded.]

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