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# NUCLEAR REGULATORY COMMISSION

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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

3 ***

4 RELEASE OF RADIOACTIVE MATERIAL WORKSHOP

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7 Crowne Plaza Atlanta PowesFerry

8 6345 Power Ferry Road, N.W.

9 Atlanta, GA

10 Wednesday, October 6, 1999

11 The above-entitled workshop commenced, pursuant to

12 notice, at 8:35 a.m.

13 PARTICIPANTS:

14 DONALD COOL, NRC

15 CHIP CAMERON, NRC

16 MIKE MATEA, ISRI

17 TONY LEMASTRA, AISI

18 ED REITLER, Westinghouse

19 RAY TURNER, David Joseph Company

20 NORMA ROGERS, Allied Signal

21 DALE RANDALL, State of Maine

22 ART PALMER, ATG

23 PAUL GENOA, NEI

24 TERRY SIVIK, AISI

25 GWENDOLYN BOWER, State Department

1 PARTICIPANTS: [Continued]

2 ALLEN KIER, NFS

3 RANDY CLARK, Westinghouse

4 JOELLE KEY, State of Tennessee

5 JOHN ETHERIDGE, Entergy

6 BILL HOUSE, Chem Nuclear Systems

7 JOHN KARNAK, EPA

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

2 [8:35 a.m.]

3 DR. COOL: There are three take-home messages here
4 from this presentation. The first one is that NUREG-1640 is
5 not a regulation, it is not a rule that needs to be set out
6 very clearly. For the purposes of comparison, we needed to
7 make an assumption in Chapter 2 so that we could compare it
8 with the European Union's standard and so that we could
9 compare with 1.86 and so on.

10 So that may have confused some people, thinking
11 that we had assumed one millirem, but it was just for a
12 comparison purpose and only that. The alternative has not
13 been chosen or selected or decided upon or anything.

14 Rather, it's a tool to help decision-makers
15 evaluate the alternatives and what it does is it relates the
16 radioactivity on or in the material or a piece of equipment
17 to a radiation dose.

18 This is a generally technically sophisticated
19 audience and because we are all, in some aspects or another,
20 laymen in the other person's field, please permit me to take
21 a layman's approach on this.

22 NUREG-1640 is a tool to answer the question how
23 much radiation could an individual get from cleared items.
24 I told you the answer yesterday. Do you recall? The answer
25 is it depends. What does it depend on? It depends on how

1 the individual comes in contact with the radioactivity, what
2 are his activities. And in that regard, NUREG-1640 examines
3 79 scenarios or activities, and that's what we talk about.
4 When we say scenarios, we're talking about how
5 does the individual come in contact with the radioactivity.
6 It also depends on the materials or equipment that the
7 radioactivity is associated with and what we did, we've got
8 a dose to an individual, we ask that question, we go into
9 the next -- we talked about, in there, there's ferrous
10 metals, copper, aluminum, concrete and equipment are
11 analyzed.
12 Where does the radioactivity go? In metal
13 processing, sometimes the radioactivity is, because of its
14 elemental, its chemical and physical properties, can
15 separate from the metal. So in NUREG-1640, we examined the
16 metal product, the slag, bag house dust, and airborne. I
17 don't know if we have that on this slide. If we don't, I'll
18 sketch it out here.
19 So we followed it from the metal, again, slag, bag
20 house dust, and airborne.
21 It also depends on what kind of radioactivity it
22 is. For example, is it heavy uranium, U-238, or light
23 uranium, lighter uranium, U-235, and so we looked at a
24 radionuclide by radionuclide basis on this and, in fact, we
25 looked at -- we analyzed 80 radionuclides.

1 Now, where did we get those radionuclides? We
2 first examined the manifests of low level waste and looked
3 -- and included the most common radionuclides from the
4 manifests of low level waste.
5 We also compared our list with that of the EPA and
6 also of the European Union, so that the list of
7 radionuclides is inclusive of basically those three sources.
8 Lastly, how concentrated is the radioactivity?
9 Now, this is the part that really makes this a tool for a
10 decision-maker, because the concentration -- and I'll
11 abbreviate it -- the concentration is in the NUREG report,
12 reported as a per unit of radioactivity and, also, a per
13 unit of mass or a per unit of area. So let me write that
14 down. Okay. Per unit -- I'll abbreviate radioactivity and
15 then it's also, for example, per gram or pound, or surface
16 area, centimeters squared, you'd convert that to square
17 foot, so on.
18 So if you have one beckerel of radioactivity
19 associated with one gram of scrap, for example, then we
20 calculated the dose that an individual would receive from a
21 particular scenario.
22 Okay. As an example, we analyzed what could
23 happen from a piece of scrap if it were cleared. We started
24 at the gate of the facility, we tracked the scrap from
25 transportation to the scrap yard, to a melter, and then we

1 followed the metal, as well as the byproducts, as I
2 mentioned earlier, to the products to processing, through
3 consumer use, and finally to disposal in a landfill.
4 We took a count of all of the people who would
5 come in contact with that scrap as it progressed through its
6 various reasonable fates and analyzed the potential doses
7 that they would get. We calculated the amount of radiation
8 that those individuals could get on a, as I said, per unit
9 mass, per unit area, based on a unit amount of
10 radioactivity.
11 The results looked like this. If we calculated or
12 if we plot the amount of dose that an individual could get
13 or the amount of radiation exposure that a person could get
14 and we take into account that some truck drivers may only
15 spend half the time that other truck drivers spend in terms
16 of transportation, there's a distribution for many of these,
17 if not most of these parameters that go into these
18 equations, and taking into account that variability for all
19 of the parameters, then what you get is not as clean number,
20 but you get a distribution.
21 So this is the number of times that we would
22 calculate a particular dose. Then, say, the transportation,
23 the person who picks up the scrap from the gate, for
24 example, all of those possibilities may come out to be a
25 distribution of something like this on a per unit basis.

1 For example, then the consumer products, because
2 of separation of the radionuclides and dilution through the
3 processing and the small amounts, the consumer products may
4 be down here. Slag worker may have a distribution like
5 this, and other, we had 79 scenarios, recall.
6 And so by plotting or by looking at the
7 distributions or, say, the means of all of these, we can
8 tell which population or which activity, which scenario
9 would result in the highest dose to an individual.
10 This group is called, in radiation protection, the
11 critical group. The philosophy is if we set our standard so
12 that the critical group is protected to that standard, then
13 all of the other people who come into contact with that
14 radioactivity would be protected to an equal or greater
15 degree. They would get less radiation.
16 And so with this tool, with these calculations,
17 then we can identify how much radiation could be associated
18 with a piece of scrap, how much radioactivity could be
19 associated with this piece of scrap, and thus protect even
20 the most exposed people to the amount of the regulation, the
21 alternative.
22 That's what NUREG-1640 does. There is ongoing
23 work to do other calculations. We're interested in not only
24 protecting this critical group, but we're also interested in
25 how much does the entire population get. That work is

1 ongoing. There are contracts ongoing and as questions arise
2 about other kinds of calculations you might be interested
3 in, hopefully we've captured those in ongoing technical
4 analysis.
5 But in brief, that's what NUREG-1640 is about and
6 that's what it does and that's how it will be used as a tool
7 to assess regulatory alternatives.
8 MR. TURNER: Ray Turner, David Joseph Company.
9 Mr. Meck, I just had a question about, in your study, what
10 type furnace was used to obtain your data. The reason for
11 asking the question, for example, GTS Duratech has an
12 induction furnace that reacts quite differently from an
13 electric arc furnace or a blast furnace or a cupola or other
14 types of furnaces.
15 The reason I'm asking that is you're talking about
16 where the different radionuclides migrate to, whether it's
17 in the slag or the bag house dust or stay inherent in the
18 metal. In an induction furnace, for example, element
19 phosphorous will stay in the metal throughout the cast.
20 Well, it comes up, but it reverts back down in tube metal
21 because an induction furnace, such as GTS Duratech, does not
22 slag off like an electric arc.
23 In an electric arc furnace, the phosphorous floats
24 up into the slag, but then at 2,847 degrees, if that slag is
25 not removed, it reverts back into the steel. I was

1 wondering if that was considered in your study.

2 MR. MECK: NUREG-1640 covers two kinds of

3 furnaces, the electric arc furnace and the basic oxygen

4 furnace. The reason for that is that at the outset, we had

5 to make some assumptions and the assumption that we agreed

6 on with EPA is that we would model industry as it exists

7 today, the general commerce industry, and it was our

8 understanding that the induction furnace was used for

9 specialty melts, like Duratech uses, and we were looking at

10 the broader, larger scale furnaces.

11 So we took into account those kinds of things.

12 MR. TURNER: Ray Turner, David Joseph Company,

13 again. The induction furnace still does use the same types

14 of scrap that an EAF or a BOF uses; maybe not the bail

15 scrap, but as far as the cut scrap is concerned, it does use

16 the same type of scrap.

17 MR. MECK: Right, right. We did not include the

18 induction furnace, but we were aware of the different

19 physical -- chemical and physical behaviors of the electric

20 arc furnace and the basic oxygen furnace.

21 MS. ROGERS: Norma Rogers, Allied Signal. The

22 statement here is for materials and equipment and yesterday,

23 some mention was made of soil type or soil materials. I'm

24 assuming that this only addresses metal.

25 MR. MECK: This addressed ferrous metals, copper,

1 aluminum, concrete, and equipment. We did not include soils
2 in that. That is a separate and ongoing study.
3 MR. MATEA: Mike Matia, from ISRI. When you
4 looked at it, who -- what were the top two or three of the
5 population in terms of the workers that were most critically
6 exposed and what was the radionuclides that were of the most
7 concern?
8 MR. MECK: In general, the truck drivers who were
9 initially carrying the materials away from the cleared --
10 the licensee, came out high. Sometimes the scrap yard
11 workers came out as a critical group and sometimes it was,
12 say, a slag worker, and it depends again on this
13 partitioning of the radionuclide, depending. So it really
14 depended upon the physical and chemical characteristics of
15 each particular radionuclide.
16 The natural, the naturally occurring materials
17 tended to go to the slag and it also depends on the
18 pathways. It's a varied answer, so that's why I can't give
19 you a precise about the radionuclides, a precise answer.
20 MR. LEMASTRA: Bob, Tony LaMostra, AISI. In
21 looking at NUREG-1640, there were some questions of, I
22 guess, essentially, accuracy of the knowledge of the public
23 process.
24 Is the NRC -- realizing that it came out as a
25 draft, is the NRC going to have it rewritten if we can point

1 out some errors of fact?

2 MR. MECK: Yes. We're collecting those comments

3 and we will be responsive to those comments. I can mention

4 that we've gotten several comments of the nature that it was

5 thought that the amount of scrap assumed was greater than

6 the total amounts that the industry -- that the nuclear --

7 that the nuclear industry has.

8 Apparently, we didn't write it clear enough, that

9 we assumed that there would be some dilution with

10 non-cleared scrap, but the normal scrap, if you can dig into

11 that a little bit, you'll see that there was an assumption

12 that there was some normal scrap mixed in with the cleared

13 scrap. So that would account for some of the mass

14 imbalances that some of the commenters have come back with.

15 But we'll look into that further to make sure that

16 that's correct.

17 But let me just talk a little bit about the data

18 and the accuracy and the knowledge of the process. What our

19 contractor did and also what EPA did was to actually

20 interview representatives from the industry and, again, the

21 assumption was to take the practice, as we understood it,

22 that would be realistic for a realistic scenario for cleared

23 material in the US, as industry exists today.

24 So those are based on, like I say, personal

25 communications. Those are cited and referenced in the NUREG

1 report.

2 MR. LEMASTRA: Tony LaMostra, again. I understand
3 how the information was gathered, because I was involved in
4 one of the steel plants where they were visited, at least
5 for the EPA thing. One of the problems, though, that -- it
6 would be the same thing as taking a steel-maker and letting
7 them go see a single nuclear power plant and come away or
8 even one or two boiling water and one or two pressurized
9 water reactors, and coming away with the idea that all
10 reactors operate the same way, all reactors handle waste the
11 same way, all reactors do it the same way.

12 And one of the obvious problems is that there's a
13 monolith that's assumed for EAFs, or electric arc furnaces,
14 and there's a monolith that's assumed for basic oxygen
15 furnaces that within the industry does not exist.

16 Differences in product, differences in management
17 philosophies will run furnaces differently, will operate
18 differently, and some of those changes or effects can have a
19 major influence on the partitioning.

20 MR. MECK: If I could cut to the chase on that and
21 reflect back to an earlier comment. Yes, we are eager to
22 get your comments. Yes, we will respond to those. We'll
23 investigate further as the comments direct us, and I rather
24 glossed over the variation from plant to plant, but wherever
25 that purple diagram went, where we said that we have a

1 distribution to recognize that there are differences in
2 terms of partitioning and there are differences in terms of
3 how plants are operated, we're trying to capture that in
4 terms of changing what the ranges are of possibilities
5 there.
6 And if there's new information about, well, the
7 range should be this way or that way or should be stretched
8 out this way, we'd be very eager and happy to get that.
9 We would like it to be -- it would be more helpful
10 to us to have it as some sort of a cited source, so that
11 somebody else could refer back to it. But we'd be happy to
12 do that.
13 MR. LEMASTRA: Tony LaMostra, again. In light of
14 that, I would recommend that the consultants use terminology
15 that's common to the metal-making industry, because there
16 were terms used in there that are just not common and it
17 makes it difficult for the industry to really review the
18 report and to come up with meaningful comments, if they
19 really can't understand what's being said.
20 So in that respect, I --
21 MR. MECK: That's very helpful and I believe that
22 we have your phone number from the roster here.
23 MS. STINSON: Let me just ask, Bob. Is there a
24 specific comment period and if it has a deadline, has it
25 been extended? I' trying to remember.

1 MR. MECK: The document is still a draft and the
2 thought was that we would keep that open as a draft through
3 this public workshop period. We have not definitely set a
4 close-down date on receipt of that. So your comments are
5 still welcome and useful.
6 MS. STINSON: And the comment period for this
7 process has been extended beyond November 15 in the original
8 FRN. It's now December 22 and there will be a new Federal
9 Register notice, I think, extending that officially.
10 Did you have something, Don?
11 MR. COOL: Yes. This is Don Cool with NRC. Let
12 me just add a little bit to what Bob Meck was saying and
13 encouraging about trying to get both the right information
14 and the diversity of information available, because we have
15 here a lot of people who have the knowledge and expertise,
16 or your organizations have that knowledge, and let me just
17 say it would be really useful to try and work with you.
18 And if I can be so bold as to suggest that as you
19 look through the document now and having been in these
20 discussions, to try and provide us that additional
21 information, so that we can do as realistic an assessment as
22 possible and get a better understanding of the variations
23 that you have within the various metal manufacturing
24 processes.
25 So the more information that you can give us, the

1 better opportunity that we will have to try and put together
2 something which is, in fact, realistic and accurate.
3 MS. STINSON: Okay. Do we have some more comments
4 and questions? Mike, and then we'll come back.
5 MR. MATEA: Mike Matia, with ISRI. The most
6 exposed worker, what was his annual exposure?
7 MR. MECK: Well, that hasn't been set and what
8 NUREG-1640 allows us to do is to say if it were set at one,
9 this much radioactivity of this nuclide could be associated
10 with each ton of scrap, for example. If it were set at ten,
11 it would be ten times that much radioactivity could be
12 associated with that ton of scrap.
13 So basically it's what mathematicians call its
14 normalized or its per ton of scrap --
15 MS. STINSON: For the critical group, you mean.
16 MR. MECK: Yes, for the critical group.
17 MR. MATEA: Then let's say for the levels that are
18 -- the clearance levels that are being considered by the
19 European Union, are you able to say, at that level, the most
20 critical group was exposed to X?
21 MR. MECK: What we did is the European Union used
22 a criterion of one millirem per year to the critical group.
23 We said if our standard were one millirem per year, how
24 would the concentrations compare with those of the European
25 Union, and they are almost invariably lower than the

1 European Union's. We are more restrictive; using 1640, we
2 would be more restrictive than the European Union, in
3 general.
4 MR. REITLER: Ed Riteler, from Westinghouse. You
5 mentioned that the analyses will be expanded to include
6 soils.
7 MR. MECK: That's correct.
8 MR. REITLER: Will you also be including other
9 specialty products, like calcium fluoride?
10 MR. MECK: We have, under contract, the
11 opportunity to specify other materials, a limited number of
12 other materials. We've already heard that some things like
13 composite material, like roofing material and sludges and
14 resins and other kinds of things like that could be
15 candidates, calcium fluoride could be another one, but it's
16 not specified at this time.
17 MR. RANDALL: Dale Randall, with the State of
18 Maine. I was wondering, I know that the average member of
19 the critical group is a new methodology. I also understand
20 it's used in other NUREGs and other regulatory settings.
21 My question is, how much dispersion are you
22 finding in your results for that critical group?
23 MR. MECK: In the NUREG, we report the 5th
24 percentile and 95th percentile as well, and the answer is it
25 varies from radionuclide to radionuclide.

1 And as you might expect, when we have fewer
2 parameters that go into the equation and those parameters
3 are themselves less dispersed or they're better defined, we
4 know what those parameters are, there aren't that many of
5 them, then it's not dispersed very much.
6 On the other hand, where there is a lot of
7 uncertainty of the parameters that go into the equation,
8 then, of course, the uncertainty of the end result is
9 greater. So you have to kind of go through the radionuclide
10 by radionuclide to get an answer to that. So it varies.
11 MR. RANDALL: Is there a limit to the amount if
12 dispersion you might accept with the average member in the
13 critical group methodology?
14 MR. MECK: I think that's something that we have
15 to take into account and make the Commission aware of. If
16 we've got some very uncertain number, the Commission needs
17 to be aware of that and how to deal with that. But that is
18 something that we are certainly concerned about and that's
19 why we calculated it in the way we did, so that we could
20 quantify how much uncertainty there was.
21 MR. PALMER: Art Palmer, ATG. Bob, I was just
22 curious. In the 1640 analysis, was any work done to run
23 other materials through those matrices, through the exposure
24 pathways?
25 What I'm saying is if we are able to develop a

1 dose for transportation of scrap steel, was anything done
2 with regard to transportation of refractory or building
3 materials or other things that are already in commerce, so
4 that we can compare those?
5 MR. MECK: They were not done specifically. What
6 the experience was, and Ray Turner is probably going to
7 cringe at this, but the contractors at the outset thought,
8 well, we'll do steel and then we'll have everything for
9 copper and aluminum. Well, we said you don't have enough
10 information about the processes. The processes were really
11 distinctly different. This is common knowledge to people in
12 the industry.
13 But at the outset, we didn't have very much
14 information. We were learning as we went and we're
15 continuing to learn, and that's why we're looking forward to
16 some comments from the industry.
17 But we do have the spreadsheets and we can get
18 into the details of those and on a case by case basis, we do
19 have the capability of making a case by case calculation.
20 But what one has to be careful of when you're making these
21 kinds of adaptations is that the scenario and the processes
22 really reflect reality, what you could reasonably expect.
23 For example, when we got into the concrete
24 recycling, there were some situations that were so different
25 that we weren't expecting it. So the lesson learned is that

1 when you're looking at a different material, it's worthwhile
2 to research it and find out what reality is and to try to
3 reflect that as best you can in the models and the
4 scenarios. We may end up making a different scenario than
5 we have already on the books.
6 That's a long way of saying no.
7 MS. STINSON: Final comment/question. Paul?
8 MR. GENOA: Paul Genoa, NEI. As we've commented
9 already, Bob, we think that the approach you've taken is a
10 sound approach and the scenarios seem to reflect a good way
11 of getting your hands around what's a complicated issue, and
12 we've supplied comments on some of the concerns we have.
13 Some of the things we like about the document,
14 though, are some statements right up front that pretty much
15 reflect that in this process of evaluation and looking at
16 the typical member of the public, that their dose factor is
17 essentially zero. That's sort of what you're -- you know,
18 there are a few people who handle the material who would be
19 exposed at some level that's measurable or calculable and
20 even those, we're going to control the worst case to
21 whatever this criteria is, if it's one millirem or ten or
22 21.
23 But the real take-home message is the typical
24 member of the public is not really going to get exposed.
25 You're going to be down into the rounding errors so far that

1 I don't know if it's meaningful, which brings a little
2 concern about the collective dose issue. There are
3 recognized radiation protection experts and organizations
4 that really would argue against doing collective doses in
5 sub-fractions of millirem levels and sort of tally them up
6 in a big mathematical exercise that tends to distort the
7 confidence of what we're really saying. So the caution
8 there.
9 And the final point, I think, is to get to what
10 was just raised, not for the purposes of calculating your
11 doses, but for the purposes of communicating the results to
12 the public. I think it would be extremely useful to pick
13 one or two key examples.
14 We just did a truck driver driving scrap steel to
15 your facility and they are going to be a critical component
16 for certain isotopes, like cobalt. We know what the dose
17 is. Let's calculate a brick, a guy who drives bricks every
18 day and see what his exposure is, so just so we can compare
19 a guy who drives bricks for a living, a guy who drives scrap
20 steel, and a guy who drives drywall or paint cans. And
21 you're going to see this huge range in dose.
22 I bet the guy driving bricks is really getting
23 fried compared to what we're talking about. So I think it
24 would be useful to communicate that to the public.
25 MR. MECK: I'd like to respond to just one part of

1 that, and that was the concern for the collective dose or
2 the cumulative effects of one alternative versus another. I
3 think what we tend to do, because most of in this room are
4 technically oriented, is to think that this is going to be
5 some law of science or something, but really what this
6 collective dose is is a relative tool to help
7 decision-makers and it doesn't necessarily reflect the
8 radiation exposure at all.
9 We have to be very careful, as a staff, to keep
10 that principal in mind. We are also following the
11 recommendations of the National Council for Radiation
12 Protection and Measurement and saying that when you're
13 looking at -- when you're analyzing collective dose and
14 you've got large uncertainties, to make sure that you don't
15 group those numbers with very large uncertainties with the
16 ones with smaller uncertainties, but you keep these in
17 perspective.
18 And all of this, ultimately, for a decision of a
19 regulatory alternative, has -- it boils down to a judgment
20 on the part of the decision-maker and we have to make sure
21 that the information that goes to the decision-maker is
22 portrayed in the right light and that this is a relative
23 tool and not a physical law.
24 So it's in that light that we're doing that kind
25 of work.

1 MS. STINSON: Mike, did you have one last one?
2 Then we need to move on. We've inserted an item in here, so
3 we don't want to get too far off.
4 MR. MATEA: What about a determination of what
5 happens when you melt materials at certain release values,
6 where do the radionuclides concentrate and at what
7 concentration? Because I think that's been the bottom line
8 of controversy of if you do release it and you try to put it
9 into goods, what goods can be then ultimately released to
10 the public?
11 Is there an accumulation or should we only channel
12 them to goods that will get to the general public, because
13 the radionuclides concentrate?
14 MR. MECK: I need some clarification on your
15 question, so don't go too far from a microphone. I can
16 interpret what you said in a couple of ways. One is what we
17 had talked about a little bit earlier with Ray Turner and
18 Tony LaMostra about the processes and the physical chemistry
19 and the separation and concentration in this product or this
20 byproduct of the process. That's one aspect, one way I could
21 interpret it.
22 The other is perhaps a build-up question, and I'm
23 not sure of which -- if this continued, if clearance
24 continued over a number of years, would there be a build-up.
25 Which or both of those were you asking?

1 MR. MATEA: Let me put it another way. The
2 concern is if you have something at a release value, don't
3 send it to a conventional steel mill, because it gets melted
4 and then sent to an automotive maker, then the automotive
5 maker doesn't want known radioactivity to be in a side panel
6 of a Ford Taurus, even though it may be extremely, extremely
7 low, because over the life of that car, someone, quote, is
8 going to be radiated.
9 How do you answer that in terms of sending cleared
10 material into the general stream to be made into consumer
11 products?
12 MR. MECK: I'm still not tracking well with you,
13 but I will attempt an answer here. In our calculations, we
14 take into account, say, the mean use and life of a car, for
15 example, and calculate out what those doses are. So that if
16 they turn out to be so low that staying on the second floor
17 of a building versus the first floor of a building, the
18 difference in cosmic radiation would be something
19 equivalent. It's just really, really low.
20 So we have calculated that and this is part of the
21 equation, this is part of the tool that a decision-maker
22 will use, but they're outside of that tool. I mean, that's
23 what a scientist or a technical person can do. They can say
24 here's what will happen. But beyond that, what the
25 Commission's job is is to make some policy decisions and say

1 there are other considerations that have to be folded into
2 the decision for an alternative or how the rule should be
3 made in the end.
4 And those factors are actually beyond what the
5 NUREG-1640 or a technical person can do, and so they have to
6 take those other factors into account in other ways.
7 MS. STINSON: Mike, just one last final
8 clarification, and maybe this is something that actually you
9 two can -- I mean, you're raising an important question
10 that's in everybody's mind, but I don't want to take a whole
11 lot more time.
12 MR. MATEA: How comfortable are we with the
13 pathways that radionuclides will follow when they are
14 melted?
15 MR. MECK: Well, that's exactly why we're eager to
16 get comments from people who are more expert than we about
17 what the processes are and did we capture this correctly.
18 We did the best job that we could. We think that it's a
19 pretty good shot at it, and if there are comments, we're
20 eager to look at those comments and make adjustments as
21 necessary.
22 But how confident are we? I think the goal is to
23 be as confident as our harshest critics require.
24 MS. STINSON: So they were confident enough to put
25 it on paper and distribute it as a draft and they're looking

1 for comments, and increase their confidence by making
2 suggestions for alteration.
3 Thank you, Bob. That was helpful. Again,
4 hopefully by the break, we'll be having actual copies, if
5 you all want to -- if you haven't seen a copy, it's a
6 two-volume set and you can take them with you or we can send
7 them to you.
8 Let's move now to a bit of a discussion on the
9 alternatives. We had a healthy discussion of alternative
10 and I think a bit of exploration of what's really meant by
11 what's in the issues paper, that array of alternatives, and
12 some new ideas came out and we kind of digested that
13 overnight, and, particularly, Bob Nelson has given this some
14 thought and I think he's going to walk us through a
15 description of them to not only calibrate with what the
16 staff is thinking, but to make sure that we're calibrating
17 with what you all are thinking, particularly for a couple of
18 the suggestions that were made yesterday, and to see if we
19 can't flesh them out a little bit more and think about what,
20 for instance, a combination of unrestricted and restricted
21 use would really mean and sort of the layered approach that
22 Terry Civic suggested, or multi-tiered regulatory approach
23 that Terry suggested yesterday.
24 MR. NELSON: -- so you can all see this. My name
25 is Bob Nelson with the NRC. We thought, after our

1 discussion yesterday and also after our San Francisco
2 meeting, reviewing what people had said, that maybe this
3 concept of restricted use needed a little bit more
4 discussion, a little bit more definition.
5 So I've tried to outline here a general model that
6 may help us define this a little better.
7 At this point, I'm not really putting a hard
8 definition on restricted use, but I'd like to try and get
9 towards that maybe at the end of the discussion. Let me run
10 through the model that I have here.
11 First of all, we have licensed operations, with
12 some set of controls established regarding release of
13 material, whatever those controls may be, whether it be Reg
14 Guide 1.86, whether it be a new rule, revised guidance,
15 whatever it is.
16 The orange path shows direct release from licensed
17 operations. Now, let me discuss this first block. This may
18 be a number of licensees; say, a facility undergoing
19 decommissioning sends contaminated scrap metal to a licensed
20 processor. That processor then decontaminates the material
21 and releases it. So this may be two, three or four
22 licensees. It's not necessarily just one.
23 But at some point, it leaves that realm and the
24 orange path goes directly to release; and when I say
25 release, I mean release from regulatory control, no longer a

1 control on the material. It's either recycled, reused in
2 its current form, or disposed of in an unregulated disposal
3 facility.
4 So that's the unrestricted scenario.
5 In the restricted scenario, the material may go to
6 an interim processor, and, in this case, I haven't shown --
7 and this is where the difference is. In the restricted use
8 case, I haven't shown where the licensed portion stops,
9 because I think that's part of the discussion in restricted
10 use.
11 So the material goes from the original user to
12 some processor, might be a recycler, might be a broker,
13 whatever. It then goes to some authorized use and then
14 after that authorized use, is released.
15 One of the questions I think that has come up that
16 we haven't really defined is where the regulatory control
17 ends. Clearly, it would end at this point, but does there
18 need to be some regulatory control in this area, and I'm not
19 sure that that was really well defined yesterday during our
20 discussion.
21 Also, I'm going to put up another chart here, and
22 this gets more -- I've tried to categorize the types of
23 alternatives under this restricted release alternative. The
24 first one I talked about was point of release; where does
25 the regulatory control end. So that's the first kind of

1 category I've thought about.

2 The second one, I think I heard this yesterday,
3 was type of material. I think there was some sentiment that
4 maybe some material or some radionuclides should only go
5 into certain uses or have to go into certain uses. And then
6 another type of alternative use might be type of use; that
7 material can only go into bridges or, in the case of
8 concrete, maybe road beds or something like that.

9 So maybe there's more, but this is what I thought
10 I heard and I wanted to put both of these up here for more
11 discussion. Does this cover the range of types of
12 restricted use? Is this the type of process that was in
13 your mind? If it wasn't, does this make sense?

14 What I'm trying to do is come to some common
15 understanding, when we say restricted use, what we mean by
16 restricted use, so that we're not all walking out of here
17 thinking five different things. So with that, I'd like to
18 open it up to some discussion.

19 MS. STINSON: I think what would be helpful is, A,
20 to just answer the questions that Bob has posed and, again,
21 we're not evaluating which one that you might prefer, but
22 helping the NRC define maybe even some terminology. Some
23 people use the term limited use and if we can come from this
24 meeting with some agreement about what we really mean by
25 restricted use, we can test it out in other meetings with

1 other people, I think it will give a basis for analysis for
2 the NRC from these point forward.
3 Some comments? Paul?
4 MR. MECK: Just one more point before I -- and I
5 think this is important. I should have made it. That
6 regardless of whether you're talking restricted use or
7 unrestricted use, ultimately, you come to this block.
8 In a restricted use scenario, you're building in
9 some additional steps, whether they be licensed or
10 unlicensed, that could delay the ultimate release of the
11 material. But at some point in time, the material is going
12 to be released.
13 MS. STINSON: Paul?
14 MR. GENOA: Paul Genoa, NEI. Bob, I think you've
15 done a good job of laying out conceptually a restricted use
16 path and I wanted to just make sure that people are aware
17 that you're not inventing this on the fly; that there's been
18 a lot of thought about restricted use.
19 The European Community -- I have a document here,
20 the Nuclear Energy Agency of the OECD, does a nice job on
21 the recycling and reuse of scrap metals. They have
22 evaluated all this and have laid out different flow paths
23 for restricted use.
24 But what's clear in here and what we should stay
25 focused on is the fact that a restricted use discussion is

1 another rulemaking, it's another activity.

2 What we're here today is to talk about a clearance

3 level, which is the first step. It's the point you're

4 talking about down here. Either in the beginning or after

5 the restricted use, there has to come a point where there is

6 no longer control on the material. It's cleared, and that's

7 really where we've got to get to.

8 MR. MECK: I think that was the point I was making

9 down here, that this point is the same as this point.

10 MR. GENOA: Exactly.

11 MR. MECK: Maybe I should have shown the arrows

12 coming together at the same place. But in my concept of

13 this, and my concept may be wrong, but in my concept of

14 this, this point and that point are exactly the same.

15 MR. GENOA: And I agree with you and I believe

16 that we should focus all of our energy on those two points

17 and not waste a lot of time guessing which processes should

18 be in the license are in and shouldn't and all those other

19 parameters, because the reality is if it's still under

20 license or control, we're not talking clearance.

21 So it's sort of another discussion and I guess if

22 we have time today to talk about that, that's okay. But I'd

23 like to focus on the clearance part of the debate.

24 MS. STINSON: Mike?

25 MR. MATEA: Unfortunately, hearing that

1 clarification, in my discussions with what we might want to
2 call the concerned public, I think they see it the opposite;
3 that if there is discussions of restricted use, if there's
4 clarification and commitment to restricted use -- for
5 example, if you were to release X nuclides and Y metal, then
6 if they go to bridges, then not a big deal, but we don't
7 want them going to automobiles -- then there's going to be
8 more of an agreement to talk about release.
9 But the concern is if we set up a release value
10 without a restricted pathway, then you're releasing material
11 without knowing that we can restrict it to where it goes.
12 If we -- if you can bring the discussion of the
13 restricted use with the idea of release values, you might be
14 able to attract the concerned public for discussion, because
15 that's their concern, where does this stuff go.
16 MR. MECK: We may still be talking the same thing,
17 but let me try to clarify what I said and maybe my
18 understanding of what you said.
19 If we were to have a restricted use option, say,
20 going to the bridge, someday that bridge is going to get
21 torn down and it's going to enter the recycle, reuse,
22 disposal scenario. That was my point; that when this
23 authorized use ends, whether it's a bridge or a road bed or
24 something else, that material will wind up in this box.
25 And in order to determine the appropriate

1 authorized use for material, you need to consider the
2 timeframe of the authorized use, so that you get to the same
3 point at the end of the authorized use. That was my point.
4 Not that there shouldn't be some designated use of material
5 after it leaves, say, the original NRC licensee, but
6 ultimately, unless you continue the licensing process all
7 the way through here, you're going to have -- you're going
8 to -- ultimately, that material is going to end up in the
9 general commerce.
10 MS. STINSON: Let me just throw in one thing here.
11 I think that what you're talking about is really two
12 different -- whether the balance should be restricting use,
13 restricting activities prior to release and you should
14 approach it from that way, or you should approach it from
15 setting a release level and then talk about, okay, what else
16 -- where might you have to apply restrictions, and you're
17 both -- you're coming at it from different angles, which is
18 fine.
19 Let me just say it's hard to resist, but what we'd
20 like to do is rather than advocating for an alternative,
21 which we all ultimately want to get to, let's be sure we
22 understand the alternatives. And I think if I -- let me
23 just interpret part of what Bob has said.
24 I think what Paul wants to do is advocate here
25 that this orange line -- that we start from these point and

1 work backwards, and what I think Mike is saying is let's
2 move this direction through this process. I think that's
3 right, and that's fine, but let's also be sure that before
4 we get to that evaluative stage, that we really understand
5 what it might mean to do Bob's -- wherever they went --
6 different sets of restrictions in each of this to understand
7 what restricted use would really mean.
8 So if you can hold your comments on which
9 alternative you prefer and let's define them, maybe that
10 will help us build some bridges here ultimately.
11 One quick comment, and then we're going to take
12 some other comments, Mike.
13 MR. MATEA: The reason for the comments is that
14 I'm -- my assumption is the reason for these sessions is
15 that to allow the NRC, when they do produce a proposed
16 rulemaking, that it has a chance of succeeding, that it has
17 a chance of being adopted, and the reason for the comments
18 is that for it to have a chance of succeeding, that you need
19 to look very carefully at where the opponents are and focus
20 on their concerns, because you may develop a very good
21 scientific, well based release criteria, but in the foray of
22 public comment, it will go the way of BRC, because we don't
23 address the concerns.
24 For example, if the rulemaking -- take a very
25 specific universe -- were to say for this radionuclide, if

1 it is decontaminated to X level and then released such that
2 if it went into a bridge, that given the normal life span of
3 that bridge, by the time that bridge got torn down and sent
4 to the recycling facility, it would have half-lived down to
5 nothing, practically.
6 So, therefore, you could possibly buy acceptance
7 that, well, if it goes that way, by the time it half-lives
8 down and it goes into the recycling stream, it's practically
9 nothing. And that's how you will be able to possibly start
10 to build an acceptance for the concept, because right now,
11 out there, it's they want to release the stuff out into
12 commerce and that is the perception and if we don't change
13 that perception and get the steel manufacturers, the end
14 users, the recyclers and the general public comfortable not
15 just with the release science, but where this stuff is going
16 to go and what happens while it's going there, then you're
17 not going to have a rule, because it will die from public
18 opposition.
19 MS. STINSON: Okay. Good advice. Terry and then
20 Gwen.
21 MR. SIVIK: Terry Civic, AISI. I'm glad Mike
22 spoke up. I guess he was countering Paul's comments, but I
23 think we are in a process here and part of that process is
24 looking at the entire scenario here, the various
25 alternatives.

1 I only offer a question here and it relates to
2 what Mike was saying. When we just have the word processors
3 up there, without the word licensed processors, does that
4 create a problem from the standpoint of not having that
5 already defined as the alternative as opposed to not having
6 any control after it leaves a facility?
7 MR. MECK: That's the reason I put point of
8 release as my first category of restricted use type. I kept
9 this general, so that you could put the license bar here,
10 here or here. Okay. That's why I didn't put this here,
11 because I was hearing those types of questions/comments
12 yesterday and I didn't want to presuppose where the bar
13 ought to go.
14 Back to Mike's comment about putting in a bridge
15 and after so many half-lives, that's -- whether you call it
16 picocuries per gram or number of half-lives, that's still a
17 clearance level. There's some finite amount of material
18 that's still going to be in that bridge.
19 So whether you establish a clearance level at X
20 picocuries per gram or ten half-lives or 20 half-lives or 30
21 half-lives, that's still a clearance level and that's a
22 release standard.
23 The point is that whatever you call that number,
24 whether it's number of half-lives or picocuries per gram or
25 DPM per 100 centimeters squared, that's a release level.

1 MS. STINSON: Gwen.

2 MS. BOWER: Gwendolyn Bowers, State Department.
3 As Paul was saying earlier, in this discussion, if the items
4 are under regulatory control, then there's not so much of a
5 discussion as to its safety, because we're assuming that
6 it's under licensed use, it's going to be regulated, it
7 shouldn't be so problematic for the public.

8 But I think I can't feel comfortable with this
9 discussion until we engage the question where that bar is,
10 because it seems to me that there still is a question where
11 that regulatory control ends and I don't think we can
12 instill public confidence in that process until we reach
13 some point or some placement of that bar.

14 MR. MECK: We'd certainly like your input on that.
15 I mean, I didn't -- as I said, I didn't want to presuppose
16 where that bar ought to go. Again, why I point that -- put
17 that up there is alternative, what is point of release,
18 where should the regulatory control end, and that's what
19 we're looking for input on, on bullet number one.

20 MS. STINSON: Anything else, Gwen?

21 MS. BOWER: Well, I guess I just wanted to open
22 it. I was looking for comments from those folks here. I
23 mean, if they could offer something to clarify it a little
24 bit for me, as well, that would be useful.

25 MS. STINSON: So what it sounds like people want

1 to move into is discussing, for a restricted use scenario,
2 at what point of release along that continuum do you draw
3 the orange line, if it's orange designating release, as well
4 as -- no? Is that right? What type of material and should
5 you consider different types of uses.
6 MS. BOWER: Or where we draw that regulatory line.
7 I don't want to confuse the -- I mean, obviously, we have
8 one pathway which is direct release, one which is this
9 limited or restricted use scenario, and where we feel or
10 some thoughts as to where that regulatory process should
11 end.
12 Well, obviously, I guess that also is dependent on
13 the radionuclide that we're talking about, the amount that
14 we're talking about, the amount that we're talking about,
15 but how are we going to craft guidelines that address that.
16 I think that will speak to the public's concern.
17 MS. STINSON: Ray is next, and then who else is
18 up? Who else wants to speak?
19 MR. TURNER: Ray Turner, David Joseph Company.
20 Just a couple of things. I commented in the San Francisco
21 meeting that in the case of bridge beams and bridge plates,
22 a lot of that stuff is re-rolled without re-melting and can
23 go into any myriad of operations.
24 Another thing, in the course of recycled and
25 reuse, I'm going to make an assumption here that we're

1 sending, in the case of metals, scrap metals to a facility
2 that's going to melt that material down and still possibly
3 have a restricted use. We need to know a lot more about the
4 downstream -- Mike Matia, for example, made a reference to
5 eventual concentrations of materials, where it's going to be
6 concentrated.
7 If we assume, for example, the material is going
8 to be melted down and placed in down-hole pipe for the oil
9 industry, which is probably a good application for a lot of
10 that material, because it's going to be in the ground for
11 many, many years and won't be recycled for a lot of years.
12 However, in understanding how that oil-filled pipe
13 is made, in some operations, about 30 to 35 percent of that
14 steel after it's been melted and formed into ingots and then
15 rolled into sheet and re-rolled into pipe, cut to shape,
16 threaded, 30 to 35 percent of that material comes back into
17 the recycling industry before it ever goes anywhere; not in
18 the form of pipe, but in the form of home scrap, which that
19 facility may not even be able to melt. A lot of that home
20 scrap is sold off to other steel facilities, iron and steel
21 facilities, and they melt it and make different products
22 from those things.
23 Of the steel that was produced 24 years ago, the
24 completion of that recycle chain, 48 percent of that
25 material is being recycled, completion recycled this year.

1 In the case of automobiles, I think it's about eight and a
2 half years.
3 So we need to know a lot more about the downstream
4 even in-house at the steel mill process and what returns
5 back to the mill or what is sold off in the form of home
6 scrap or pit scrap or cut pipe or whatever it may be to
7 other mills, where it's going to be recycled into different
8 products.
9 MS. STINSON: Frank, did you have something you
10 wanted to throw in here? You can use that mic right there.
11 MR. CARDILE: Frank Cardile, NRC. I just wanted
12 to quickly add, and it kind of comes out of Bob Meck's
13 conversation, another thing that fits into this is the fact
14 that as Bob Meck pointed out earlier, what's really
15 controlling the dose that we would set or the limit on the
16 dose is the scrap truck driver and the person perhaps
17 working in the processing area at the start, not so much the
18 end user.
19 So if you actually did go to an authorized use,
20 like a bridge, by the time you got down to release, since we
21 maybe controlling the dose to the worker, the processor or
22 the scrap truck driver, that's another driver towards -- or
23 it's another thing in the mix of what's controlling the dose
24 at the very bottom.
25 MS. STINSON: Okay. In the back.

1 MR. KIER: Allen Kier, NFS. I have a question.
2 I'm a little bit confused. Are we talking about developing
3 a release criteria for materials and if -- and a restricted
4 use level above a certain release level, or are we talking
5 about all materials going through a restricted use process?
6 What I'm concerned about is the viability of a
7 restricted use pathway, just like in the B-25 boxes, where
8 it was not economically viable based on quantity and amount
9 of material.
10 I can understand the use of a threshold value
11 above which you consider controlling and restricting
12 release, but I don't think it's reasonable to consider all
13 materials going a restricted release process, until --
14 that's my question. Which are we talking about?
15 MR. MECK: I think I've been hearing both. I
16 think there's been at least one advocate -- I think what
17 I've heard is that all material should go through some
18 restriction until it's decayed away to some negligible
19 value.
20 NRC is not advocating one scenario or the other.
21 What we're trying to do is just get input on what you people
22 think is the right approach or approaches that we need to
23 consider.
24 MR. KIER: A quick follow-on. When you really
25 stop to think about the cost-benefit analysis that the ALARA

1 philosophy invokes, I mean, exposure is exposure, dose is
2 dose, radiation is radiation. We are talking about levels
3 of natural background between 100 millirem per year and the
4 1000 millirem for the general public.
5 How much, as a society, are we willing to pay to
6 prevent or potentially prevent one millirem of additional
7 exposure. That's an awful heavy economic burden when you
8 stop and think about the variations that are already out
9 there in society.
10 MS. STINSON: And that is one of our critical
11 questions and a very good segue to the economic impacts
12 discussion. What I don't want to do is get out ahead of our
13 plans to talk -- if this makes sense to you all -- to talk
14 about the environmental impacts and the economic impacts of
15 these, and then do the evaluative portion of this
16 discussion.
17 Maybe if this helps us understand what the
18 distinctions in various scenarios could be, now we can talk
19 a little bit about environmental impacts and economic
20 impacts and then come back and you all can offer your
21 advice, answer Bob's question, what are your views as to the
22 approach NRC should take.
23 Does that make sense? Unless people want to offer
24 more comments about the -- and give us more enlightenment
25 about these scenarios and how to structure alternatives.

1 Paul, did you have something as well? Okay.
2 Start with Art and then Paul, and maybe we'll move on.
3 MR. PALMER: Art Palmer, ATG. A couple comments.
4 Just, first of all, in this, somewhere there needs to be the
5 diamond decision box that is the does it meet unrestricted
6 release criteria, and I think that's what you're trying to
7 get to with that bottom box.
8 But whatever happens above that, it can go through
9 as many do-loops as it wants, as you want, in the restricted
10 process. It can go one, ten, 20 times through the -- from
11 licensee to licensee to licensee. That's fine.
12 But at some point, you need that diamond box on
13 the bottom and that's what I think we're really here to try
14 to get to. That's what I'm critically interested in.
15 MR. MECK: In this model, again, because I didn't
16 put the line in where regulatory control ends, this box,
17 this controls box would be just above that line, in my
18 concept of this. So if the regulatory control bar was here,
19 then there would be a control box above that line.
20 If the regulatory control line was here, then
21 there would be a control box above the line here, just as it
22 is in this unrestricted use case.
23 MR. PALMER: But regardless of -- it immediately
24 proceeds to the question, the yes/no question of does the
25 material meet unrestricted release criteria. You can have

1 as many steps prior to that as you want. The critical
2 question is, does it meet unrestricted release criteria.
3 Once that answer is yes -- it's a yes/no question. Once the
4 answer is yes, it drops out of the regulatory regiment. If
5 the answer is no, it must go back into the restricted use
6 pool.
7 MR. MECK: That gets back to my point that these
8 two points are the same and if the regulatory box is up
9 here, then these two points are the same.
10 MR. PALMER: And as a follow-on to that, I
11 understand that recycling is just a lower cost means of
12 dispositioning material from decommissioning facilities.
13 The only reason it exists is because the cost of disposal
14 into low level rad waste landfills. If the low level rad
15 waste landfill cost was lower, you wouldn't -- we wouldn't
16 be looking at this because it wouldn't be economic, and I'm
17 afraid that's what's going to happen with restricted use.
18 Two problems with restricted use. One, we have
19 enough trouble tracking down radiography sources, radiator
20 sources, radium needles, there's just a host of things that
21 have been lost over the last 40 years. I cannot fathom how
22 you would have enough inspectors either at the Federal or
23 state level to track down bridge girders, where they
24 actually went.
25 Secondly, the cost is just going to be fantastic.

1 You're going to have dedicated facilities trying to compete
2 with the guy that's cranking out a million miles of railroad
3 track a year.
4 There's no way you're going to be able to
5 economically put this restriction, this licensing, the
6 tracking requirements.
7 And on the other hand, I can't see an architect
8 specifying that for even money, I want to put radioactive
9 girders in my skyscraper. I just don't see that decision
10 being made.
11 So I have some, I guess, fundamental questions
12 that way.
13 MS. STINSON: Okay. Thank you. Any other final?
14 Okay, Paul.
15 MR. GENOA: Paul Genoa, NEI. I guess I'm coming
16 at it from, answering your question, from a two-tiered
17 approach; that, first, you have to assume that ultimately a
18 decision has to be made that a material can be released or
19 can't be released.
20 And above that, if it doesn't meet that criteria,
21 does that mean it immediately has to go to a Barnwell or
22 Envirocare like facility, even if it has one atom more than
23 the release criteria.
24 And intellectually, it seems like, well, no, there
25 might be other opportunities. Now, what I want to point out

1 is they already exist. This structure up here, a nuclear
2 power plant is at the top, licensed operation. The
3 processor is GTS Duratech in the middle. I transfer scrap
4 metal from my facility that is contaminated above a free
5 release criteria that I already use, which happens to be
6 non-detect no licensed material, which is trouble,
7 problematic, but I can make that decision today, yes/no.
8 This material can go out, this material can't, I
9 send it to GTS Duratech. They take a look at it, they decon
10 it, clean it, do whatever they want to do to it. If they
11 can get it clean under their criteria, out it goes. If they
12 can't, it can go into a metal melt batch and that will end
13 up in a reusable product for the DOE as a shield block and
14 it will get reused in a secondary application.
15 When the DOE takes a look at that in the end, they
16 probably will end up disposing of it, because it will be
17 volumetrically contaminated, it will be difficult to deal
18 with. But it could potentially go through an infinite cycle
19 of license controls.
20 And my point earlier was only that we don't have
21 enough time to talk about an infinite number of
22 permutations. The real question is at the end of the day,
23 Mike, as you pointed out, at the end of the day, when all of
24 the half-lives have gone through and there's just a trivial
25 amount left, you reach a decision point. I'm saying that

1 decision point is what we're here to talk about and it
2 doesn't matter how many do-loops you go through, you
3 ultimately get to the same place. At what point do I make a
4 decision that is yes or no?
5 But I agree with you. Somehow we're not
6 communicating this point, that what we're talking about is
7 not up here where the radioactivity is high and dangerous,
8 but we're talking about a point that is so low and trivial
9 that there just isn't a risk to deal with.
10 MS. STINSON: Good. Thank you. We are going to
11 move on in our discussion and I'm wondering if -- do we want
12 to -- we're scheduled for a break shortly. Do you want to
13 take a quick stretch break?
14 Why don't we take just a ten-minute break, give
15 you a chance to stretch and we'll come back and talk about
16 the environmental impacts. I have five till, return at five
17 after.
18 [Recess.]
19 MR. CAMERON: This particular session is going to
20 be Session No. 7 on your agenda, originally scheduled at
21 9:00 a.m. this morning, and it's what are the potential
22 health and environmental impacts of various alternative
23 approaches.
24 Bob Nelson is going to do a presentation for us
25 and then we want to go out to you to, first of all, make

1 sure that we answer any questions you have on the types of
2 impacts that Bob is going to talk about, or their magnitude,
3 but just as importantly, we want to then go to you to
4 suggest other impacts that we might not have thought about
5 or magnitudes of impacts that we hadn't thought about.
6 We're going to run to 11:45. Checkout time for
7 the hotel is 12:00, so although they say, they've said there
8 is a grace time until 1:00, you may want to check out before
9 12:00 anyway. So we'll stop at quarter to 12:00 with this
10 session.
11 I'm going to turn it over to Bob Nelson now to run
12 us through the health and environmental impacts.
13 MR. NELSON: Good morning, again. Yesterday, we
14 discussed alternatives for controlling the release of solid
15 materials. In this session, we'll discuss potential impacts
16 of the various alternatives.
17 For those of you who may be following in the
18 issues paper, this session relates to Issue 2, Item A.
19 What are the potential health and environmental
20 impacts that should be considered? First and foremost, the
21 basis for NRC's consideration of any action related to
22 release of control of solid material is protection of public
23 health and safety and the environment. NRC will evaluate
24 the impacts of all alternatives being considered.
25 One of the attributes to be considered is the

1 potential radiological impact. The first step is to assess
2 the potential dose to an individual.
3 For each alternative, we consider the potential
4 exposure from individual and multiple sources; for example,
5 steel girders in housing or office construction, or metals
6 used in common commercial goods.
7 We use a two-step process in examining how
8 exposure occurs. First, we look at how people come into
9 contact with the released material. This is called a
10 scenario analysis.
11 Then we examine how the biological impact is
12 delivered; for example, through inhalation, ingestion or
13 direct exposure. This is called a pathway analysis.
14 One can look at this whole process as part of a
15 flow of material from the licensed activity to the general
16 affected environment. Much of this is explained in a draft
17 report, NUREG-1640, which is explained in the earlier
18 session.
19 In order to better reflect the impacts of various
20 alternatives, we also perform a collective radiation dose
21 assessment of population groups, and we've heard some
22 discussion on this already this morning.
23 Collective dose allows a more common denominator
24 for comparison and as a measurement tool that we use to
25 compare cost-benefits of alternatives. It is not used to

1 make health and safety decisions, however.

2 Other attributes for evaluating impacts to the

3 environment include those to biota -- in other words,

4 animals -- and land use. This is required by the National

5 Environmental Policy Act.

6 We would include assessing impacts to public use

7 areas, wetlands, preserved habitats, endangered species, et

8 cetera.

9 Another attribute to consider is the impact of

10 mining and processing of new materials to replace recyclable

11 metals that are instead disposed of at a low level waste

12 site. Also, the incremental contribution to pollution,

13 possibly increased occupational injuries associated with any

14 of the alternatives.

15 Next slide.

16 The last slide continues this listing of

17 attributes for health and environmental impacts and points

18 out that attributes are not necessarily cut and dried,

19 because trying to minimize one could be offset by an

20 increased potential of another.

21 Some of these impacts may be competing. For

22 example, the value of sending more recyclable material to a

23 low level waste disposal site may be offset by increased

24 pollution from more raw ore processing. These are the types

25 of issues we're trying to examine in balancing the choices.

1 One of the attributes that is typically difficult
2 to quantify, but plays a strong role in decision-making, is
3 environmental justice. We do not want to have one sector of
4 society bearing a disproportionate amount of the burden in
5 the allocation of impacts; for example, if recycled material
6 might be preferentially used in low income housing.
7 Another concern is postponing to the future the
8 difficult decisions for ultimate disposition; for example,
9 bridge trusses re-entering unrestricted commerce when future
10 demolition terminates at an authorized use site. We've
11 discussed this some in the previous session.
12 There are other impacts that we have in common
13 with non-radiological-driven decisions; for example,
14 occupational injury, transportation, noise, road
15 construction that might be associated with any of the
16 alternatives we've discussed or any of the alternatives you
17 might suggest.
18 This concludes my brief presentation. After I
19 respond to any questions you might have on the presentation,
20 I suggest we focus on the following question. What
21 attributes and impacts do we need to address?
22 MR. CAMERON: Thank you, Bob. Let's follow Bob's
23 suggestion and see if there are any questions that you have
24 on the impacts that have been identified up here, so we can
25 clear those up before we go on to other types of impacts

1 that you might have in mind that we haven't identified.
2 Allen?
3 MR. KIER: Alan Kier, NFS. I was wondering if you
4 had looked at the impact, the economic impact on the general
5 consumer for the different alternatives. For example, if a
6 criteria is established that sends more material to low
7 level waste burial, nuclear power generation costs obviously
8 will increase. The consumer eventually pays for that in
9 rate increase.
10 Have you looked at the total cost over a lifetime
11 of this type of activity on utility rates, for example?
12 MR. NELSON: Actually, we haven't looked at any
13 costs yet. We're still in the scoping process. That's why
14 we're here today, is to get input on what types of things we
15 ought to look at in the -- not only the impacts, but also
16 the cost-benefit analysis, which we'll discuss in the next
17 session.
18 So I appreciate that input, but we really haven't
19 done any of the analysis at this point. We're still
20 scoping.
21 MR. CAMERON: Is the type of impact that Allen
22 suggested one that we would look at in terms of the economic
23 impacts rather than this particular --
24 MR. NELSON: I believe it is, yes.
25 MR. CAMERON: All right. Thank you, Allen. Mike?

1 Tony?

2 MR. LEMASTRA: Tony LaMostra, AISI. The comment
3 or the bulleted item there about the recycle replacing --
4 not on that slide, but I guess the one before it -- recycle
5 replacing raw material produced metals is probably not one
6 that's that valid when you look at the total quantity of the
7 materials involved.

8 What you're really looking at is replacing one
9 mode of recycle with another source of recycled material, as
10 opposed to the mining and the raw materials. So all the
11 scenarios that fall from that may not be valid.

12 MR. NELSON: I think we heard that comment in San
13 Francisco, and that may be true. The point is that even if
14 it's true, we still need to address that in the
15 environmental impact statement and say that that's a fact,
16 that, for example, the -- and, again, I'm not saying that
17 this is true or not true or agreeing with you, but if it is
18 true that the amount of recycled material is so small that
19 it would have a negligible or insignificant impact on the
20 mining industry, then we need to say that.

21 MR. CAMERON: And if you do have comments,
22 specific comments like that in your written comments, that
23 would be very helpful to the staff. Terry?

24 MR. SIVIK: Terry Civic, AISI. I think you have
25 to look from a health standpoint at the cumulative effect of

1 build-up of radioactive material over time. If we're going
2 to be pre-releasing material, as you know, 46 percent of the
3 materials used in the steel process are recycled. So over a
4 period of a number of years, some of these -- we talked
5 about half-lives -- some of these materials will have
6 half-lives well beyond the 40-year period or so and there
7 will be a lot of accumulation of materials, both from these
8 facilities, as well as from the imported facilities.
9 So I think we have to look at that as a health
10 effect evaluation.
11 MR. NELSON: I would agree with you. That is a
12 limitation of the analysis we've done to date and something
13 we have to do in this process. Thank you, however, for that
14 comment.
15 MR. CAMERON: Okay. Let's go to John. We've
16 heard one comment on the magnitude of a particular impact.
17 Terry has just given us a suggestion for another type of
18 impact analysis that has to be done.
19 MR. KARNAK: Tony beat me to it. When we -- EPA,
20 this is John Carnig, with EPA. When we did our economic
21 analysis, I had expected that a ton of recycled material
22 would replace a ton of newly mined material, but that, in
23 fact, we found was not the case, that it merely shifted to a
24 different amount of recycled material that came into it. So
25 we found, to my surprise, the environmental impact was less

1 than I had expected.

2 I just wanted to mention that both our technical
3 support document and our economic analysis are both
4 available on the EPA web site, if you'd care to take a look
5 at them. If you'd rather have me mail you a copy, I still
6 have probably about 20 sets sitting in my secretary's office
7 and she is desperately trying to get rid of them. So if
8 you'd like a copy, give me a business card and just write
9 recycle reports on it, and I'll send you a set.

10 MR. CAMERON: Thanks, John. Who are we going to
11 now? Ken.

12 MR. KALMAN: Ken Kalman, NRC. I have a concern
13 just as far as what's going to happen from the regulatory
14 standpoint with all of this. I wonder if this is not going
15 to be overly burdensome. When I think of the possibility of
16 material getting recycled, some of it going into bridges,
17 some of it going into paint cans, some of it going into
18 shielding, and me, being in the position where I might have
19 to send inspectors out every so often, go out here and look
20 at the bridge, go over here and look at paint cans, go here
21 to look at shielding, to me, that just seems like it could
22 be a regulatory nightmare.

23 I tend to wonder if we might even be better off
24 considering a possibility of I guess we'd call it a
25 monitored retrievable storage of some sort, where you take

1 this material, segregate it, and store it, let it decay to
2 certain points, and then be able to put it into use.
3 MR. CAMERON: Ken, I think you have perhaps
4 suggested another alternative for the staff to consider.
5 But as a general question, Bob, you might want to tell us
6 how will regulatory impacts, such as Ken brought up, how
7 will they be factored into the decision-making process?
8 MR. NELSON: I'd like to answer both parts of
9 Ken's -- I think he made two comments.
10 We will -- first of all, we have to develop a
11 cost-benefit analysis for each of the alternatives, and that
12 will be in our regulatory analysis and we'll also do a
13 summary of the cost-benefits in the environmental impact
14 statement. So that will be done, and regulatory cost is
15 part of the cost.
16 Regarding your suggestion about a monitored
17 retrievable storage, this goes back to a point I tried to
18 make in the earlier discussion. Ultimately, what we're
19 trying to develop are release criteria. If a licensee has
20 material that are above the release criteria, it's clearly
21 the licensee's option to store that material and allow it to
22 decay to those release criteria, if that's feasible, given
23 the half-life of the material.
24 That's really an economic consideration that the
25 licensee has to make, what they -- whether they hold the

1 material for some period of time and build a facility to
2 store it or whether they ship it for disposal. That's
3 really a question that I'm not sure whether that's within
4 the realm of the rulemaking, but it's certainly a
5 consideration.
6 MR. CAMERON: Thanks, Bob. Mike?
7 MR. MATEA: Mike Matia, from ISRI. Sort of a
8 recommendation or a caution when presenting impact data is,
9 again, considering the audience. I have heard individuals
10 who will look at an impact statement that says this exposure
11 will cause one cancer in 10,000 additional and I've had
12 individuals do quick math and divide that into a population
13 of 200,000 and say, oh, 20,000 individuals will be afflicted
14 who are not now, and they're allowed to go there because
15 there's no explanation of what this data really says. Does
16 it really allow you to make that mathematical extrapolation?
17 That's all they've got to work with. So being
18 able to explain release data and how it affects the general
19 population in a way that the general population can
20 understand it.
21 MR. NELSON: I couldn't agree with you more. The
22 communication of risk needs to be very clear, so that
23 inappropriate or incorrect conclusions aren't drawn, such as
24 the one you suggested.
25 MR. CAMERON: Thank you. How about other types of

1 impacts that we may not have identified so far? One of the
2 things that Bob had up there was environmental justice. It
3 would be useful to get people's thoughts on how do you
4 factor that into this type of situation. Randy?
5 MR. CLARK: Randy Clark, Westinghouse. Some of my
6 friends here were talking earlier and a question we just had
7 amongst us was we're mindful of the fact that after the
8 invent of nuclear weapons and looking at the manufacturers
9 of steel prior to World War II and after World War II and,
10 as we all know, as a result of above-ground nuclear testing,
11 the natural steel that we make into girders and steel
12 products and all that went through a quick change.
13 We had to go to get pre-World War II steel to do
14 our whole body counters, for example, to get very low
15 backgrounds for accounting. Because we have already had, as
16 a result of nuclear weapons testing, inserted into the
17 recycle process, if you will, I think it's cesium, I'm told
18 it's cesium, into the steel products.
19 And the question I have, so we already have a real
20 life case of far more radioactive material recycled and
21 introduced into the steel industry after the above-ground
22 nuclear testing and so I think by comparison, one question
23 we might ask ourselves for comparison is what economic and
24 ecological impact on the steel industry, just focusing on
25 the steel, not strontium-90 and all that, and the milk and

1 the other things that took place at that time, but just
2 focusing on the steel and the economic impact and the
3 ecological impact, what impact did it have and was it
4 significant or was insignificant.
5 And, of course, we're talking about orders of
6 magnitude far lower introduction of the cycle of the
7 standards that we're talking about, by comparison.
8 MR. CAMERON: Thanks, Randy. I might ask Bob, if
9 he could, to perhaps explain how that type of concern that
10 Randy just expressed, how is that factored into the
11 environmental impact statement process or the analysis of
12 impacts.
13 MR. NELSON: I suspect you could use it as a point
14 of comparison, that there was this economic impact, whatever
15 it was, as a result of contaminated steel entering the
16 market, and we project this impact as a result of additional
17 recycled material, and draw from that whatever conclusions
18 can be drawn by the comparison.
19 I don't know what -- how those would weigh out,
20 but that's an approach.
21 MR. CLARK: Randy Clark, again. As we said, at
22 some very low level, the steel is already contaminated.
23 MR. NELSON: I understand that.
24 MR. CAMERON: So it might be some sort of a
25 baseline that may be useful, we don't know until we look at

1 it.

2 MR. NELSON: Right. You say if there was X dollar
3 impact as a result of contaminated steel entering the
4 marketplace as a result of fallout, and we project this
5 economic impact from recycle, compare the two numbers.

6 MR. CAMERON: All right. Let's go to Norma.

7 MS. ROGERS: Norma Rogers, Allied Signal. On
8 environmental justice, have you considered in your impact --
9 you're talking about releasing material that would go to
10 landfills or disposal under other circumstances that we have
11 today, or perhaps changing that in some manner.

12 So what is the environmental impact of all this
13 material, instead of going to recycling or other uses, going
14 directly to landfills and what is it going to do to the
15 volume to landfills, plus the potential future problems that
16 may develop at the landfill itself.

17 MR. NELSON: That's an impact we'd have to
18 address. We haven't, as I mentioned before, really haven't
19 looked at any impacts at this point. What we're, again,
20 trying to do is identify those categories or types of
21 impacts that we need to address, such as the one you have
22 suggested.

23 MR. CAMERON: I guess the suggestion is that,
24 maybe it's an obvious point, but something that we need to
25 take a look at that an alternative that we have that

1 increases site-specific disposal types of considerations,
2 may have more an environmental justice impact than another
3 type.
4 It sort of ties into one of Gwen's points that she
5 made yesterday about what's going to be the impact on
6 disposal, will there be more pressure or less pressure for
7 disposal. So that's a very good point.
8 MR. RANDALL: Dale Randall, with the State of
9 Maine. I'd just like to point out that I think this
10 discussion has verified that there's a lot of policy type
11 issues associated with this matter and as such, I would urge
12 the NRC to provide as much latitude as possible for
13 agreement states in its implementation.
14 MR. CAMERON: That's a good process point.
15 Agreement state -- as much agreement state input as
16 possible. Bob, I don't know if you want to comment on
17 process at all in regard to that.
18 MR. NELSON: I think he was also addressing the
19 level of compatibility that might be assigned to the rule,
20 if I interpreted the comment correctly. Giving states more
21 latitude means providing the most -- a level of
22 compatibility and allows them to implement changes or
23 variations to the rule.
24 MR. CAMERON: Have we had any discussion at all
25 about potential compatibility levels? Not yet.

1 MR. NELSON: I don't think so, not --

2 MR. CAMERON: Okay. Let's go to Tony, and then
3 we'll come up to Bob. You want to follow up on this? Tony,
4 wait a minute. We'll let Bob talk here.

5 MR. MECK: Bob Meck, NRC. It seems to me that on
6 the agreement state and latitude, what we need to do is to
7 look at the impacts of various alternatives for the
8 latitude. Compatibility issues arise when you think of
9 intra or interstate commerce and we look at that impact
10 versus the impact of a lot of latitude.

11 So, yes, I agree, and I'm just elaborating a
12 little bit about how we would approach that.

13 MR. CAMERON: Okay. Thank you, Bob. Tony?

14 MR. LEMASTRA: Tony LaMostra, AISI. A response to
15 Randy. It wasn't cesium, because cesium won't end up in the
16 steel. It's primarily cobalt, ruthenium and some of the
17 more metallic or at least alloy materials.

18 There definitely was contamination. When you look
19 at the relative level that is present today, it's generally
20 non-detectable. As an example, some slabs were rolled for
21 Argonne National Labs, that's looking at the -- at a project
22 where they're going to basically be developing a detector
23 made out of steel plates, and they wanted to look at those
24 for contamination so that it wouldn't confuse what they were
25 really trying to measure, and plants just submitted samples,

1 and most of it met their specifications for a very low
2 level.
3 Where you have problems are on some of the more
4 critical things, like shielding for low level detection and
5 whole body counting and some of the more sensitive
6 materials, like film.
7 MR. CAMERON: Thanks for that clarification, Tony.
8 We've been talking in a general sense about these types of
9 impacts. Maybe it would be useful -- and Norma sort of got
10 us on that track -- to think about some of the alternatives
11 that were presented not only yesterday, but earlier today,
12 and talk about the types of environmental and health impacts
13 that they might have.
14 I wondered if anybody had any thoughts about any
15 of these alternatives and what types of health impacts might
16 arise from them, unrestricted use, restricted, whatever.
17 Frank, did you have a comment?
18 MR. CARDILE: Frank Cardile, NRC. To feed on what
19 Chip was just saying, one of the drivers in the way the
20 license termination rule wound up was this issue of multiple
21 sources. I think the first slide that we had up here, which
22 I'd put back up, if I could, but I can't do both at the same
23 time, but talked about both the dose from an individual
24 source, like a one millirem limit or whatever the limit that
25 you might have, and also multiple sources.

1 So as food for thought, both today and in your
2 thoughts about unrestricted use and also in written comments
3 that you send in, both to licensees and also to people from
4 the steel industry, as to how these -- how -- when we talk
5 about multiple sources in the license termination rule, we
6 talked about a fixed site and a person being exposed perhaps
7 to that fixed site, and what other sources might that person
8 be exposed to.
9 Multiple sources here is a little bit more
10 interesting. You're talking about a variety of materials
11 that can be made, different end uses that can be -- material
12 can be made out of.
13 So I guess the question I'd like to have both the
14 steel industry type people and the other licensees, some of
15 the license type people, to give some input to us on is the
16 way in which multiple products could be made out of released
17 materials.
18 MR. CAMERON: Thanks, Frank, for adding that. I
19 don't know if it would be useful, also, for those of you who
20 have been involved on the international front on this, Gwen
21 and others, are there any lessons for the NRC's analysis of
22 health impacts from what's been done on the international
23 level already? I'm not aware of what has been done, but
24 does anybody have anything to offer from that perspective?
25 MS. BOWER: Gwendolyn Bowers, State Department. I

1 don't think there is anything at this point that would be
2 really relevant to this discussion, in the advanced level
3 that we're talking about. They're dealing at a very
4 different level. So I don't think it would be applicable.
5 MR. CAMERON: Thank you. Any comments about
6 impacts, health impacts of some of the alternative that
7 we've talked about? I think Tom and then Norma.
8 MR. HILL: Tom Hill, from Georgia. One of the
9 questions that you had in Issue 2, whichever, was what are
10 the -- what's the potential for a single facility receiving
11 material from multiple release points, as far as scrap goes.
12 One of the things that we have seen with naturally
13 occurring material is that a lot of scrap can be collected
14 by small mom-and-pop operations, sold to bigger scrap,
15 recyclers, more regional basis, they go to processors.
16 So I think the potential is there for a processor
17 to get scrap from multiple different release points. So
18 that that should be considered. That's kind of parallel to
19 what you were asking, Frank, but from what we have seen
20 there, one reprocessor could be getting scrap from multiple
21 locations from outside their state or region.
22 MR. CAMERON: Thanks, Tom. Bob, any comment on
23 that from a staff point of view? Okay. Norma?
24 MS. ROGERS: Norma Rogers, general public this
25 time. The thing that I see is my parents ask me questions

1 every time something comes on the news or they read it in
2 the newspaper or any media publication, and on some of the
3 alternatives that have been discussed, the public perception
4 of their health and the environment, that, to me, is going
5 to be a very real concern to them.
6 They are going to have certain ideas about this
7 and we start saying, well, you're going to have recyclable
8 materials out here and as you talked about the steel from
9 pre-World War II or not, everyone is saying, well, we're
10 already so polluted, we're already so polluted, now you're
11 polluting me more.
12 So when I go into my parents and I say, well,
13 we're going to release some scrap metal from our facility or
14 something or they read about this, they're going to say,
15 wait a minute, I don't want that out here. So the
16 perception of what's there is going to be very real, I
17 think. The gentleman from the EPA and I were talking about
18 that earlier.
19 I just think that some of your alternatives, that
20 needs to be looked at.
21 MR. CAMERON: So I guess there's two points there.
22 One of them goes back to perhaps Mike's point about very
23 good use of risk communication and I guess perhaps the more
24 direct point for issue for Bob and the staff is how is
25 perception of risk factored into, if it is at all, into the

1 preparation of the environmental impact statement. Is that
2 right, Norma? Okay.
3 MR. NELSON: Well, I guess I don't know precisely
4 the answer to that question. I think that the -- if the
5 perception results in a quantifiable impact, then we have to
6 address that, I guess, either in a -- I'm trying to think
7 what -- while I'm talking -- what that impact might be, but
8 I'm not getting there.
9 But if there were, if that perception resulted in
10 some impact, whether it be cost or other impact, then we
11 would have to address it. I think that the communication of
12 risk, however, has to -- we can't rely on that document to
13 make that communication. The general public is probably not
14 going to sit down and read an environmental impact
15 statement.
16 They're going to listen to what is said in
17 meetings such as this and draw conclusions from that, I
18 think, more so than this document that we produce.
19 So I think it's important for us in venues such as
20 this to be very clear about what -- several things. One is
21 what the situation is today, because material is being
22 released today and it's not a -- it's -- so that's the
23 starting point. You have to understand -- the public has to
24 understand what the current situation is, and that then
25 comparing the current situation to alternatives and then

1 clearly describing what those alternatives might result in.
2 There may be a misconception that material is not
3 being released today and that what is attempted here is to
4 allow such release. Material is being released today under
5 a framework that is not entirely clear and certainly isn't
6 set out clearly in regulation.
7 So I think that whole message has to be
8 communicated better, starting with what's the situation
9 today.
10 MR. CAMERON: Okay. Thanks, Bob. On the point of
11 how perception might result in a quantitative health impact,
12 I think there's only been one case on that. I don't know if
13 Stu wants to talk about the issue that was raised in the TMI
14 case.
15 MR. NELSON: Let me back up, because something
16 just came to mind.
17 MR. CAMERON: All right.
18 MR. NELSON: If the perception that release of
19 material into a particular product stream would make that
20 product stream less desirable and if you could quantify that
21 economic impact -- let's say preferentially, this type of
22 recycled material gets into this product stream. I'm
23 hypothesizing. And then because of the perception that
24 there is radioactive material in this particular product
25 stream, that product stream will become less commercially

1 acceptable and, therefore, this industry will be
2 economically impacted. Then you have to address that and
3 that economic impact on that industry would have to be
4 addressed as part of the analysis.
5 MR. CAMERON: And you may have hit on a point that
6 Terry was going to talk to right now.
7 MR. SIVIK: Terry Civic, AISI. Yes. I think
8 that's exactly right. I was going to touch on that, but I
9 was thinking that what Norma was suggesting doesn't fit in
10 environmental impact or economic impact. It's a what are
11 the policy considerations and consequences of action type
12 things, and public perception would be under that, and you
13 can't assign a dollar value to that or you can't say that
14 public perception is going to result in some adverse
15 environmental impact.
16 But it is a consideration that I think she was
17 trying to suggest that needs to be up there as almost as
18 equal as the other ones.
19 MR. NELSON: I agree that it needs to be
20 considered. I was trying to put it within the -- trying to
21 address it within this formal analysis framework. Clearly,
22 any decision has some policy and public receptive type
23 impacts, and those have to be considered by the people
24 making the decision.
25 I was trying to get this specific concern into

1 some analytical form, because it was brought up in the
2 context of this environmental analysis.
3 MR. CAMERON: Okay. Let's go back to Norma, and
4 then we'll go to Frank Cardile. Norma?
5 MS. ROGERS: Norma Rogers. I agree with your
6 statement about the impact. The reason I'm bringing it up
7 on the environment and health impacts is that as a -- when I
8 talk to the general public or when I'm talking with my
9 parents, as I used the example, the health and the
10 environment is what they always talk to me about. They
11 always say, well, my health or I don't want the pollution in
12 my yard, I don't want my grandchildren having to walk over
13 this material.
14 And the public perception is pretty real, since we
15 do not build nuclear power plants anymore.
16 MR. CAMERON: Thanks, Norma, for that follow-up.
17 Frank, do you want to add something to this conversation?
18 MR. CARDILE: I would only add that to assist you
19 and to assist everyone and to assist ourselves in answering
20 these questions, it's not just a perception issue, but it's
21 an issue that we need to do a sound environmental analysis
22 of quantities of material, how much material is really going
23 to be out there, how many of these products can be made, all
24 of those.
25 I think we've talked about the fact that the

1 amount of material we have is small compared to the total
2 quantity of steel that's being manufactured. So, again, I
3 go back to requesting comment and input and suggestions from
4 the variety of the people that are here today, to help us to
5 develop a good environmental analysis, to say, all right,
6 this is the type of exposure that you potentially could be
7 exposed to, to make it clear in a document that this is the
8 reality of what we are -- at least the best analysis we can
9 do of what you might be exposed to.
10 Then we go from there and then the policy-makers
11 can take over and say this is what we're going to do, this,
12 this and this. But we need to supply both our
13 decision-makers and your parents and everyone you talk to
14 with, okay, we can analyze it and these are the materials
15 that you might be exposed to. It's not all your spoons and
16 forks, it's only two of them or something.
17 But we need to give a good analysis of the
18 situation.
19 MR. CAMERON: Thanks, Frank, for reminding all of
20 us of the importance of getting the comments into NRC on
21 types of impacts, magnitude of impacts, to help them do the
22 analysis.
23 In that regard, I just wanted to see if there are
24 any comments on Terry's suggestion earlier about the need to
25 look at cumulative impacts. Bob Nelson indicated that

1 that's something that we're going to need to do.
2 I wondered if anybody had any comments on how do
3 you look at cumulative impacts in a situation like this. I
4 don't know, Terry, if you want to say anything more than you
5 already have on that.
6 MR. SIVIK: Terry Civic, AISI. I think the NRC
7 could look at that based upon the number of 46 percent.
8 That's a number that I use and I think Ray threw out the
9 same number as how much of the material is recyclable in
10 their analysis, and take a few of the radionuclides and as
11 they would be present in the concentrations that they would
12 be and doing half-life calculations of those, as well as the
13 statistical analyses on the cumulative additions of the same
14 nuclide over a period of ten, 20, 40, 60 years, because,
15 again, we have to look at that down the road, will we be
16 concentrating the materials.
17 Also, looking at the waste streams, too, because
18 they concentrate more so than the -- in the product
19 themselves, bag house dust, bag house materials, how long
20 will that stuff be accumulating in that bag house, what's
21 the potential for exposure there, how often are the bags
22 changed in the bag house and the dust go through the system,
23 because workers will be exposed to that. Those are higher
24 concentrations.
25 MR. CAMERON: Thanks for that. Bob, do you want

1 to say anything before we go to Paul, and then over to Tony?
2 MR. NELSON: No. I think that was a good comment.
3 That's the kind of thing we need to look at it.
4 MR. CAMERON: Great. Let's go to Paul Genoa, and
5 then we'll go to Tony LaMostra.
6 MR. GENOA: Paul Genoa, NEI. Just before the San
7 Francisco workshop, we convened two small focus groups of
8 members of the public and allowed them to read information
9 on the pros and cons of this approach, and, of course, this
10 is just a very limited sampling, but we got some real
11 insights right away, and I think it relates to what you're
12 saying here.
13 The concerns are, one, is this going to be safe;
14 two, is it going to accumulate in the environment. If we're
15 going to start doing this, and that was envisioned, we're
16 going to start doing something, they don't understand that
17 something already goes on and this is just a different way
18 of qualifying it; so if this goes on, will it build up in
19 the environment, causing additional risk; will there be risk
20 -- are you going to evaluate not only the risk to me
21 immediately, but the chronic, acute risk, but also the
22 chronic risk over my entire life; are you going to address
23 exposure from multiple sources; if metal is recycled, am I
24 going to get exposed from the metal in my car; if concrete
25 is recycled, am I going to get exposed from concrete under

1 the road; if whatever other materials are recycled, am I
2 going to get exposure from ground water or whatever from
3 that.
4 So there's the idea that there is a cumulative
5 source from an individual source and there's also they want
6 to be assured that you're looking at all of the different
7 exposure pathways and accumulating those, so that there
8 wouldn't be an individual or a group of the public that's
9 going to be exposed to many different approaches.
10 And the real thing that they want is trust and
11 confidence in the regulator that these materials are going
12 to be strictly controlled, that all of those different
13 aspects are going to be considered and incorporated into
14 those controls to ensure that they're safe, and, also, that
15 they understand that people make mistakes, have in the past,
16 and some people may even be tempted to bend or break the
17 rules for an economic advantage. So there does need to be
18 penalties imposed on people who would break the rules and
19 controls that you impose.
20 I believe that with those concerns addressed
21 credibly by a Federal regulator that strongly stands behind
22 the evaluations they make, then there will be trust and
23 confidence moving forward. If any of those things are
24 lacking, you will lose that trust and confidence.
25 MR. CAMERON: Thanks, Paul. It raises the issue,

1 I don't think germane to this, it raises a lot of issues
2 germane to this, but the whole issue of enforcement and
3 compliance and how that plays into the public acceptability
4 of this is important. Tony?
5 MR. LEMASTRA: Tony LaMostra, AISI. Two things
6 that relate to both environmental impact and also the
7 assumptions used in NUREG-1640.
8 One is that there's a definite difference between
9 a basic oxygen process and an electric arc furnace. With
10 the electric arc furnace, most -- I believe almost everybody
11 uses bag houses. With a basic oxygen process, you typically
12 don't, except for some of the downstream processes, like
13 ladle metallurgy, but in the actual melting and refining,
14 because of the temperatures that are involved, they
15 typically will use other processes, like scrubbers.
16 What this means is that you have a much higher
17 probability of not collecting the material in a confined
18 space that's captured. Unless that melt is identified, you
19 have more of a probability of the material being released to
20 surface waters.
21 The second is that the NUREG-1640 I don't think
22 took into consideration the recycling that goes on in BOF
23 shops using what's called sinter, which is an iron-rich dust
24 that is essentially recycled back and back and back. So you
25 can have this concept of concentration going on in the

1 process, just from the differences between the two different
2 types of steel-making.
3 MR. CAMERON: Thanks, Tony, for that very specific
4 information. One thing that I wanted to ask the group, and
5 it sort of ties into some discussions that we've had some
6 suggestions, I think, that Terry made about sort of
7 tailoring your regime to perhaps the type of end use type of
8 materials.
9 How closely does the staff have to look at the
10 impact on what I believe are called sensitive populations,
11 children, older people? In other words, if there is a
12 certain type of product that might end up in commerce, and
13 this goes to Paul's point about the public perception on
14 this, I think that one thing we hear is are our children
15 going to be playing with toys that are made of radioactive
16 material.
17 How does this whole sensitive population idea get
18 factored into the analysis of health effects? Bob, I don't
19 know if you have anything to say on that generally before we
20 hear from others. Do you?
21 MR. NELSON: I don't, no.
22 MR. CAMERON: Any comment on -- Joelle?
23 MS. KEY: I'm Joelle Key, from the State of
24 Tennessee. The only caution I would give you, you're going
25 to walk into a two-sided house with that one or a two-sided

1 something issue with that one.

2 On the one hand, if you don't examine those very

3 sensitive populations and those very sensitive products,

4 people are going to say you didn't consider it. On the

5 other hand, if you do consider it, the problem we run into

6 is that we did consider those very sensitive populations,

7 those very sensitive products, and now people are saying,

8 well, that's where you've approved it to go.

9 So it's really hard to now say, well, no, we don't

10 think it's going to go there, that was just the worst case

11 analysis, and we really run into some difficulty with that.

12 MR. CAMERON: So that's a caution, I guess, in

13 terms of doing a worst case analysis and then people will

14 assume that that's what is going to happen. Bob, what's the

15 role of worst case analysis in our impact statement process?

16 MR. NELSON: Well, we don't look at worst case.

17 We look at reasonable scenarios, but not necessarily the

18 worst case scenario.

19 That type of bounding analysis is not required in

20 an EIS. We typically look at the critical group that's

21 going to be exposed and if the -- and use that as the point

22 of analysis. The critical group is not necessarily the

23 worst case group.

24 MR. CAMERON: Thank you. Paul?

25 MR. GENOA: Paul Genoa, NEI. A perspective on the

1 critical group or, excuse me, the sensitive group in the
2 country related to radioactive material.
3 It's important that we have to understand that
4 there are sensitive groups in the United States for a
5 variety of factors. Certain people are allergic to certain
6 things. People die from bee stings and so forth.
7 It's quite a challenge to regulate society to
8 prevent any impact to those folks. It's even more difficult
9 when you try to consider sensitive populations, as some
10 people would care to define them.
11 Now, the NRC has already made it clear that the
12 unborn fetus is a radio-sensitive individual and deserves
13 special protection in the occupational world, and you've
14 already imposed that. It's not clear to me that in
15 evaluating your 100 millirem standard for public health that
16 you have clearly articulated that that is safe for all
17 members of the public, sensitive, unsensitive or whatever,
18 and that might be worth evaluating in this analysis.
19 The concern you have, what you get to in this
20 argument is that four out of five of us are going to get
21 cancer and three out of four of us or two out of four of us,
22 I don't know what the numbers are anymore, are probably
23 going to die of cancer. Some members of the public are more
24 sensitive to certain cancers because of genetic
25 predisposition.

1 You're never going to empirically determine if
2 radiation at any level had an impact on that, because of the
3 problems epidemiologically.
4 So you're into a very difficult and challenging
5 area at the levels we're talking about. Somehow you're
6 going to have to deal with that and make some evaluations
7 and I'm sure other agencies are thinking about that, but
8 that's going to be real difficult to deal with, because the
9 facts just really aren't there.
10 If there are effects, we know they're very, very,
11 very low, but we may never know what they are.
12 MR. CAMERON: Thank you, Paul. Anybody else have
13 anything on health and environmental impacts? I think we
14 have probably plenty of time, if Bob is willing, to try to
15 move into the presentation on economics.
16 MR. NELSON: Sure.
17 MR. CAMERON: Is that okay with everybody? Just
18 go on in there. Again, we have a -- at 11:45, we'll close
19 off, wherever we are. If we need to come back after lunch
20 and start on economic again, we'll do this, but that will
21 give you time to check out. All right, Bob.
22 MR. NELSON: For those of you following the issues
23 paper, again, this follows Issue 2, Item B.
24 I want to discuss, in this final session,
25 cost-benefit considerations. First of all, why consider

1 economics and cost-benefit? Federal agencies must consider
2 cost-benefit in their evaluations of alternatives for
3 Federal rules.
4 Executive Order 12291 directs all Executive
5 agencies to prepare a regulatory impact analysis for all
6 major regulatory actions. It should be noted that the
7 Executive Order directs that actions should not be
8 undertaken unless they would result in a positive net value
9 to society.
10 NRC's guidance for such analysis is found in the
11 NUREG that's listed on this slide. This document goes into
12 some detail addressing attributes and how to prepare
13 environmental analyses.
14 This analysis provides a tool to help balance
15 health, safety and environmental impacts with the costs
16 required to achieve or preserve them. The next slide
17 addresses some of these economic impacts.
18 First, radiological surveys will play a key role
19 in verifying that permissible levels have been met. Surveys
20 would be required prior to release of material. In
21 addition, those industries which may receive released
22 material may wish to survey material prior to accepting it.
23 Survey cost elements include the instrumentation used, the
24 labor employed, training of staff, analysis of results, and
25 any follow-up activities that may result from the

1 application of the survey.

2 Many of the alternatives will have an economic
3 impact on certain commercial sectors. Scrap dealers and
4 those industries would need to tailor their operations
5 accordingly. If total prohibition were the ultimate
6 regulatory strategy, then scrap dealers and melters would
7 need to strongly invest in detection technologies to
8 preserve a radiological clean bill of health.

9 The cost impact may impact manufacturing process.
10 This is most keenly observed in the potential for responding
11 to false contamination alarms or for rejection of materials
12 at the melter, scrap yard, et cetera.

13 We've already discussed metal replacement costs,
14 so I won't get into that again. So we'll go to the next
15 slide, which continues the list of potential cost impacts.

16 Depending on the alternative, it could also have
17 an impact on disposal. The tradeoff is whether these
18 materials should be sent to a public landfill or a low level
19 waste disposal facility, or neither, such as recycling or
20 reuse.

21 There are also costs for other industries that may
22 be impacted. For example, film and certain electronic
23 products, which might have to re-tool to avoid exposure to
24 sensitive -- because of their sensitivity.

25 Another concern is the potential for buildup of

1 radioactive material in commerce over time, and we've
2 already touched on this on the earlier discussion.
3 Additionally, we need to look at socioeconomic
4 impacts; for example, any jobs lost or created by an
5 alternative, any quality of life issues, whether there are
6 impacts such as additional noise traffic or other impacts
7 that we may have to look at.
8 A question for you is what other costs that we
9 haven't enumerated here should be considered.
10 On the next slide, I'll briefly discuss what goes
11 into a cost-benefit analysis. Simply, for each alternative,
12 we evaluate potential health, safety and environmental
13 impacts and weigh the costs required to achieve or preserve
14 them; what benefits come from each alternative; what
15 detriments, including costs, result from each alternative;
16 and, looking at those, what alternative best serves the
17 country as a whole.
18 Effectively, we need to select an alternative that
19 yields a net positive value to society.
20 This concludes my brief presentation on
21 cost-benefit. I'd like to suggest that we focus our
22 discussion on the following question in relation to
23 cost-benefit. Basically, what cost-benefit considerations
24 do we need to address?
25 MR. CAMERON: Thanks, Bob. That's a helpful

1 overview to this. We've had some discussion in the previous
2 session about costs and economic considerations and a little
3 bit yesterday, but this is a chance to really get into more
4 detail. This is a helpful overview of some of the kinds of
5 things NRC will look at.
6 It would be very helpful to hear from you
7 following up on this prod to you, what considerations, what
8 cost-benefit considerations should the agency be looking at
9 here, and you might give some thought of some particular not
10 just topics, perhaps particular industries, directly or
11 indirectly, issues or aspects of this maybe that haven't
12 been captured yet either in the presentation or comments
13 that have been made thus far.
14 So let's open it up for a little bit here. Mike,
15 step up to the microphone.
16 MR. MATEA: Mike Matia, from ISRI. One of the
17 things that we have seen historically in cost-benefit
18 analysis is what are the pros and cons if you do it this way
19 and what are the pros and cons if you don't do it this way.
20 But in considering this issue, I think you should
21 consider what would be the cost, let's say, to not only the
22 general public, but to industry if you set a level, but
23 mistakes happen, that material that is supposed to be
24 released is released at levels higher than what you set;
25 then what happens downstream; what are the costs, therefore;

1 and, maybe even a step further, how do you remediate when
2 that happens.
3 Because there's industries here right now that
4 have been the brunt of mistakes and have had to also
5 shoulder the burden of the costs. But if you were to
6 release things, authorize things for release and the
7 authorized entity makes a mistake, then not only what are
8 the costs associated, but how do the costs downstream get
9 relieved because someone upstream made a mistake?
10 MR. CAMERON: I think that's -- so you're
11 addressing the -- a mistake and not an intentional
12 violation, someone making a conscious decision to release
13 above the levels. Is that right, Mike? An accident and
14 then a scenario of what would transpire.
15 MR. MATEA: I think we're looking at both, because
16 -- and let me just equate the current scenarios. Right now,
17 there can be an accidental or an intentional mistake and
18 many times the worst case scenario is that the steel mill or
19 recycler will have millions of dollars of damage and the
20 person who made the mistake, intentionally or accidentally,
21 will have thousands of dollars worth of penalties.
22 So the bottom line is the industry gets penalized
23 and has to bite the majority of the cleanup or remediation
24 costs.
25 MR. NELSON: I think that's a valid comment and

1 something we have to consider.

2 MR. CAMERON: Thanks. Other comments, suggestions

3 about cost-benefit?

4 MR. ETHERIDGE: John Etheridge, with Entergy. I

5 think in addition to some of the other cost-benefit analysis

6 that you're considering here, you also need to consider the

7 replacement cost when existing disposal capacity under 10

8 CFR 61 is exhausted.

9 We've already seen, in the United States today, in

10 trying to develop new capacity, we've spent over $700

11 million in trying to do that. It could be a substantial

12 amount of money and should be considered in your analysis.

13 MR. CAMERON: Thank you. Tony?

14 MR. LEMASTRA: Just to put some balance on costs.

15 Yesterday and today, we've heard of the high cost of

16 disposal, the high cost of dealing with the materials.

17 Typically, the costs run in terms of millions of dollars or

18 hundreds of millions of dollars.

19 One of the problems that the steel industry and

20 the other metals industries are facing is that, again,

21 getting back to the perception, and I'll give a concrete

22 example. Right now, aluminum dominates the beverage can

23 market, whether it's beer, soda or any other kind of small

24 beverages, it's going to be in an aluminum can. Plastics

25 would love to take over that market, and you're looking in

1 multiple billions of dollars.

2 The steel industry today dominates the food can
3 industry. Aluminum would love to take over that the way
4 they have taken over the beverage can industry, and, again,
5 you're talking of a billion dollar or multiple billion
6 dollar industry.

7 If the perception causes a shift in market or the
8 automobile industry, where you have competition between
9 steel, aluminum and plastic, if the perception causes
10 shifts, you're looking at multiple billion dollar losses in
11 production and in the economic health of the country.

12 So that's really where the metals industry is
13 coming from. They're not talking about millions or hundreds
14 of millions. They're talking about billions and many, many
15 hundreds of thousands of jobs that are potentially at stake.

16 MR. NELSON: I appreciate that elaboration,
17 because it follows on a discussion that we had just a few
18 minutes ago in the other session, and that's helpful to
19 point those impacts out.

20 MR. LESNIK: Let me go to Randy, but also ask you
21 to do some thinking about -- yesterday we talked about
22 instrumentation and is there a component of that that
23 relates to this. Also, yesterday, we talked about
24 trans-boundary aspects of this issue, both within the United
25 States, between states, and then between countries. Is

1 there a component of that that might weave into the
2 cost-benefit analysis, as well?
3 MR. CLARK: Randy Clark, with Westinghouse. One
4 of the ways that we try to be cost effective in our business
5 of decontamination and decommissioning, which is one of the
6 big activities we have of excess facilities, some of which
7 have a radioactive history within the buildings and the
8 equipment that's within them, is that we do, in some cases,
9 assets for services contracts with companies, as Oak Ridge
10 does, also, with companies in order to effectively use the
11 value of the assets that are there, many of which are
12 historically radiologically clean, have no historical
13 radiological history.
14 And along with those contracts, we have equipment
15 that has low level contamination that can be
16 cost-effectively cleaned up by a contractor, while working
17 under our licenses and our regulatory process.
18 We basically then try to recover the value out of
19 that and help offset our cleanup costs and effectively save
20 the taxpayer money in doing so and putting together the
21 processes we've talked about today, the new standards and
22 the more systematic way of doing business is very important.
23 There are very positive benefits to going to some of these
24 new standards.
25 The cost effective side of that, as we have

1 mentioned before, is very important to us, because the
2 process by which we do release materials has to be a
3 cost-effective process and that means that things that we
4 historically found are very useful in this process -- for
5 example, giving some kind of credit or graded approach to
6 historically clean equipment, equipment that's been measured
7 many times in the past, has been found to be clean, we have
8 historical data to back that up -- that that not have to go
9 through as rigorous a process perhaps as material which we
10 know to be contaminated.
11 That perhaps in this whole process, there is a
12 graded approach that still goes to some rem standard that
13 we've talked about, rem per year, one rem per year or ten
14 rem per year or whatever it is.
15 But we'd be able to come up with a graded approach
16 that does that in a cost-effective manner, still achieving
17 the objectives that the Commission and others would like to
18 achieve, because we, like everyone else, foremost in our
19 mind is we don't ultimately have to recycle the first piece
20 of equipment.
21 Our primary goal is the health and protection of
22 the public and the employees and the environment, and that's
23 our number one priority, always has been, and we wouldn't
24 recycle the first piece if we thought there was any risk to
25 that by any of these processes.

1 MR. CAMERON: Are you suggesting, Randy, that this
2 graded approach can be costed out?
3 MR. CLARK: I think so, in some way, at least for
4 us to know what it is. It has to be practical, has to be
5 implementable, that we don't have to get in -- that perhaps
6 we can do a number of case examples where we know that we
7 have maybe 50 or so cases that have been analyzed in terms
8 of being used and exposure and we know that this particular
9 example fits case number 27 and find some way to facilitate
10 relating measurements on a hand-held instrument, which is
11 where we ultimately would like to go, to dosage and have
12 enough scientific data to be able to meet the objective of
13 dose to an individual in a worst case scenario, without
14 having to go through a very exhaustive analysis.
15 Do that analysis up front, where possible, on a
16 case by case -- on a case basis, that you can then refer to
17 as like a matrix. Some way to expediate, simplify the
18 process, make it easy for the person in the field to do,
19 where I don't have to go get a Ph.D. to do the analysis and
20 write a research paper on each item I want to release.
21 MR. RANDALL: This is Dale Randall, with the State
22 of Maine. I wanted to point out that in looking at the
23 cost-benefit analysis here, the two options aren't
24 necessarily free release or disposal. You do have a
25 decommissioning rule in existence that allows 25 millirem

1 per year to the average member of the critical group, and
2 that might well be the pathway for materials that aren't
3 simply free released.
4 MR. NELSON: I'm not sure I understand the
5 comment.
6 MR. RANDALL: I'm saying that the material may
7 actually leave through a license termination process, rather
8 than being free released prior to the termination of the
9 license.
10 MR. NELSON: If the material -- if the licensee
11 currently holds a license, then the material would be
12 released under -- and were to leave the site, then the
13 concept is that the licensee would have to meet the
14 clearance levels, the release levels established by this
15 rule.
16 MR. RANDALL: But if there is no entity in
17 existence to ensure those materials remain on-site after
18 license termination, then it is, in effect, free release.
19 MR. NELSON: I think I'm following you. What
20 you're saying is that after license termination, you've
21 effectively made a -- you've made a release decision. At
22 license termination, you've made a release decision. You're
23 leaving -- whatever is left there is released from
24 regulatory control.
25 MR. RANDALL: And I think that should be brought

1 to bear in the cost-benefit analysis, because the two
2 alternatives are not simply disposal or free release via the
3 conditions of this rule.
4 MR. NELSON: That is true. We need to bring --
5 have a nexus or connection between the decommissioning rule
6 and the clearance rule. That's something that needs to be
7 -- that needs to happen.
8 MR. LESNIK: You're saying that ought to be woven
9 into the cost-benefit analysis, as well.
10 MR. RANDALL: Yes.
11 MR. LESNIK: Let's go to Norma, and then Paul.
12 MS. ROGERS: Norma Rogers, Allied Signal. On the
13 survey, as you've said before, we are already essentially
14 releasing materials and we already have in place survey
15 equipment, procedures, et cetera, to do that.
16 And my question or comment is that there is
17 expense in changing all of those procedures. There is
18 expense in looking at the various radionucleii involved and
19 what we already have in place, equipment that's already
20 there, and are you changing with this dose, is that going to
21 change it, will it make it lower depending upon the
22 radionucleii that's involved, and the alternative that you
23 use.
24 Is there a cost there, because we're going to have
25 to change out all the survey equipment that's already in

1 hand, as well as just the physical cost of doing it?

2 MR. NELSON: I think there is a definite cost

3 element in surveys. We don't have a protocol for surveying,

4 for example, volumetrically contaminated material. That

5 would have to be developed and there would be some cost of

6 -- just with that example -- of implementing that protocol.

7 It might mean additional training, it might mean

8 different or more sensitive equipment. I'm just using that

9 as an example, not trying to say that's the only element.

10 That's just an example of one cost element that we'd have to

11 look at.

12 MS. ROGERS: A follow-up. Norma Rogers. We

13 already have some case-by-case situations in place and there

14 can be substantial costs. Are you going to leave the

15 case-by-case places in place or are you going to change

16 those and what's the cost going to be? Because we have

17 something we already have clearance to do. Are you going to

18 grandfather that or are you going to incorporate that into

19 the new and we have to start all over again?

20 MR. NELSON: I'm not going to answer your

21 question, other than to say there are certainly areas we

22 have to look at from a cost standpoint.

23 MR. LESNIK: Paul, let's go to you, and then we're

24 going to swing over to Allen, and then John Carnig.

25 MR. GENOA: Yes, real quickly. Paul Genoa, NEI.

1 I guess I wanted to piggy-back onto the comment about
2 decommissioning, because I think that is a logical extension
3 of this.
4 First of all, the decommissioning rule on license
5 termination is for buildings, equipment and soil. So it
6 would not include a lot of the day-to-day materials that
7 would be cleared out of a facility.
8 It would include tools and equipment like that,
9 large in-place equipment I think it covers. But
10 fundamentally, faced with a decision to decommission in a
11 world that did not allow release, for instance, if one of
12 the alternatives were materials from certain designated
13 areas within a facility would have to stay there and could
14 not ever be free released, then your equation is, well, if I
15 can't do anything else, then, in fact, I either send them
16 for disposal or I leave the building intact and free release
17 the building in some fashion.
18 Of course, that's where you've got a disconnect
19 between the standards of whatever you choose for clearance
20 and the existing 25 millirem, and if you couldn't do it to
21 25 millirem, then you'd be forced to go into a restricted
22 release scenario and impose institutional controls.
23 So there are quite a few impacts as you carry that
24 logic out and they should probably be incorporated.
25 MR. LESNIK: Thanks. Allen?

1 MR. KIER: Allen Kier, NFS. First, I would like
2 to comment that I do agree with trying to develop a national
3 consensus standard for release criteria. My concern is at
4 what level do we pick that release criteria to be.
5 If it goes below reasonable values, we start, as I
6 commented earlier, impacting monetarily how we do business.
7 What I'm thinking about is we discussed an earlier session
8 on this tool decision-making process, where we determine
9 population dose, person rem for different alternatives.
10 I was wondering if the Commission had also
11 developed or looked at establishing a dollar per person rem
12 value. Taking a look at the traditional ALARA concepts of
13 you take an action and reduce a dose, the cost associated
14 with reducing that dose, does it break even or do you save
15 money, if we look at it from a dollar per person rem saved?
16 MR. NELSON: Yes, we do. That's addressed in the
17 NUREG that we had up on the slide, 0058. We use a value of
18 $2,000 per person rem in the analysis. The basis for that
19 is in that NUREG, if you want to take a look at that, but
20 that's basically the metric that we use. Don, did you want
21 to say something?
22 MR. KIER: Just one quick additional comment. So
23 that will at least be one of the tools that we will look at
24 when we look at one rem, or one millirem or .1 millirem.
25 MR. NELSON: Yes, definitely.

1 MR. KIER: Thank you.

2 MR. LESNIK: A helpful clarification. John

3 Carnig.

4 MR. KARNAK: John Carnig, EPA. I keep hearing 25

5 for the D&D regulation. My understanding is that's 25 plus

6 ALARA.

7 MR. NELSON: That's correct.

8 MR. KARNAK: Okay. Thank you. The second point

9 is I'd like to -- although I appreciate Paul having

10 clarified the point, I'd like to hear it from NRC, about

11 whether or not material can be left on-site and can be

12 released as part of the D&D procedure as opposed to being

13 cleared under a clearance rule separately at a different

14 level.

15 I guess my question is, was Paul's

16 characterization correct that anything short of the building

17 and the land itself and other permanent things cannot be a

18 part of the clearance at 25 plus ALARA.

19 MR. NELSON: I'm not following the question. Let

20 me first state that the license termination rule or

21 decommissioning rule applies to soils and structures.

22 That's the application of the license termination rule. And

23 the license termination rule envisions that the soils and

24 structures will remain at the site and because of that, for

25 example, in the structures, the scenario, the driving

1 scenario was the building occupancy scenario.

2 The nexus or connection I was talking about

3 between the license termination rule and the clearance rule

4 is that after you decommission a site and building in place,

5 sooner or later, that building is going to come down.

6 But the scenario is different when the building

7 comes down, because it's going to be torn down and as a

8 process, the material is going to get diluted and so you --

9 first of all, you're not going to have the building

10 occupancy scenario anymore. You're going to have a much

11 different scenario, a much different exposure scenario,

12 which would result in a much smaller dose.

13 The question is, is there an equivalence between

14 those values used on the license termination rule and

15 criteria established for clearance. That's the connection I

16 was talking about.

17 Now, there's another scenario that is happening

18 today, where, in the process of decommissioning, licensees

19 are tearing down buildings as they go and the way it's done

20 today is that if the licensee meets the release criteria

21 under the decommissioning rule -- in other words, the

22 decommissioning criteria, then they can tear down that

23 building and free release it.

24 MR. LESNIK: John, did you have a particular

25 caution or an angle on this or an insight that --

1 MR. KARNAK: Since the issue came up about whether
2 or not material -- whether anything other than the building
3 and the land would be covered under the D&D release, I just
4 wanted to make sure we were clear on that.
5 MR. NELSON: It's building and structures is what
6 the decommissioning rule covers.
7 MR. LESNIK: I want to ask Bill House, if he's
8 here, is there anything about kind of the industry that
9 you're here to represent, kind of the waste management
10 industry, is there anything around cost-benefit that might
11 be taken into account.
12 MS. ROGERS: Norma Rogers, Allied Signal. I just
13 have a question about this. I really do not understand. Am
14 I going to have some of my material potentially penalized
15 because it has to go to waste disposal because I'm not
16 decommissioning? This is just through my process, but it's
17 the same type material that would not have to go to waste
18 disposal if it were a decommissioning situation.
19 So I'm paying to bury the materials, that if I
20 decided to shut down the whole plant and say we're going to
21 decommission, I don't have to bury it anymore and I've got a
22 cost-benefit actually there. I don't know, I'm asking the
23 question.
24 MR. NELSON: I think that gets back to this
25 connection I was talking about between the existing license

1 termination rule and any release criteria that we come up
2 with. We have to look at the situation you're describing,
3 where you have a building and, under one scenario, if I
4 decommission the building to meet the license termination
5 rule and got my license terminated, I could then tear it
6 down and release it.
7 But if I chose not to have my license terminated
8 and wanted to rubbleize the building, well, I can't do that
9 because it doesn't meet the release criteria under the
10 clearance rule.
11 So under one scenario, I meet it, but I don't want
12 to go to that scenario point. I want to release it now. So
13 there has to be -- we have to look at the compatibility of
14 the numbers that we derive. We have to clearly look at
15 that.
16 MR. LESNIK: Thanks, Bob. Bill, I didn't mean to
17 put you on the spot, but I know you're wearing several hats,
18 folks from the solid waste, hazardous waste, low level
19 waste. Any insights you've got about, as they proceed with
20 cost-benefit on this, they pursue that analysis, particular
21 angles from that industry.
22 MR. HOUSE: Bill House, Chem Nuclear Systems. I'd
23 probably give the same response that the steel industry has
24 given and the scrap metal industry with respect to soils.
25 The volumes we're talking about here, if they were to end up

1 in a solid waste arena, it would be a minor impact to that
2 whole industry because the volumes are so large there.
3 With respect to low level waste disposal, and
4 disposal versus release decisions in general, it's going to
5 be highly dependent on where we set that dose limit.
6 Economics are going to drive, within the bounds of legal and
7 regulatory issues, to a great extent, what decisions are
8 made by the industry.
9 If we drive this thing up to 100 millirem, for
10 example, and that's an accepted public dose, maybe we drive
11 things back to traditional low level waste sites versus a
12 landfill scenario, similar to Envirocare. Then you get into
13 a situation that John is talking about, where you eat up the
14 two remaining disposal site, remaining capacities and are
15 stuck with no place for the higher concentration waste.
16 MR. LESNIK: That's a very valid point and
17 something we have to look at. Other comments about
18 cost-benefit?
19 MR. REITLER: Ed Riteler, Westinghouse. Over the
20 last two days, there have been several comments related to
21 both the health and economic impacts related to the
22 possibility of industry's dumping materials on the
23 environment.
24 The only thing I would ask the NRC to do there is
25 to -- when they look at the scenarios, to determine whether

1 that is a possibility, and there are certain ways you could
2 handle that. You could -- I mentioned this yesterday. You
3 could incorporate ALARA into any screening levels that you
4 come up with or you could identify any exceptions that might
5 result in dumping and handle those on a case by case basis.
6 But a lot of the fears of the public, whether it
7 be perception or marketing trends, we don't want that to
8 happen and dumping may cause that to happen. So just look
9 at that.
10 MR. TURNER: Ray Turner, David Joseph Company. In
11 responding to the slide on economic impact on scrap metal
12 and other industries, replacement of metal production, the
13 impacts of mining and processing of new metals to replace
14 the metals sent to low level waste, we seem to be centered,
15 in the last few moments here in the conversation, about
16 structures and buildings and that's what we're talking
17 about. We're talking about carbon steels.
18 As of the year 2000, according to our -- we keep a
19 pretty close pulse on the industry, because that's our
20 business, but as of the year 2000, recycle scrap metals and
21 alternative iron sources, there is a four to five million
22 ton per year over-supply already.
23 So I don't think you're going to have to -- if you
24 don't, you're only talking a thousand tons or so a month to
25 begin with. You're not talking about something that's going

1 to force you to go out and mine some more metal to replace
2 that 300,000 tons of recyclable buildings and carbon steel
3 spread out over 30 years. I don't think there's any impact
4 there.
5 On the other hand, on the issues of non-ferrous
6 metals, like nickels and copper, I haven't heard the total
7 quantity; neither have I heard the term of the recycling or
8 disposal or whatever we're going to do here.
9 If that's going to be spread out over 30 years,
10 also, then certainly that economical impact would be
11 minimized. But if that nickel or copper supply is
12 significant and in inventory and is placed into the public
13 mainstream of recycling, it would have a devastating impact
14 on the nickel and copper producers or marketers in the US
15 today.
16 MR. NELSON: You mean if it showed up as a lump
17 sum?
18 MR. TURNER: Stockpiled or dumped, as opposed to
19 spreading it out over the entire 30 years or whatever the
20 term is going to be. Yes. If it was lump sum recycling,
21 nickel and copper would be much more volatile. I don't
22 think you're going to see any economic impact as far as the
23 price of scrap metals or mining of new sources on carbon
24 steel.
25 MR. NELSON: So you're saying that nickel and

1 copper are more volume -- that are volume-sensitive, whereas
2 iron isn't.
3 MR. TURNER: That's correct. They're traded in
4 much smaller volumes, but they're also traded in cost per
5 pound as opposed to cost per ton. But extremely smaller
6 volumes than carbon steels.
7 MR. NELSON: That's very good input. Thank you
8 very much.
9 MR. LESNIK: Any other last comments before we
10 break so you can check out of the hotel, about cost-benefit?
11 Is there anything you would want to raise? If you have
12 something after lunch -- let's break for one hour.
13 MS. STINSON: I think what we're going to try to
14 do this afternoon, if you're willing, is to mine the
15 expertise, to use a phrase, of this group to take a slightly
16 different twist on the summary discussion. We have one more
17 discussion period slated, which is what are the pros and
18 cons of various alternatives.
19 We're kind of getting into that in this whole
20 discussion. So I would ask you to think about a slightly
21 different twist to that question, which is what is it going
22 -- from your point of view, what do you see the NRC's
23 greatest obstacles and opportunities in implementing some of
24 these alternatives, what are some of the implementation
25 factors that they should be considering.

1 So obstacles and opportunities and factors in
2 implementation, and kind of -- maybe we could kind of have a
3 comparative discussion. We've been talking about, well, if
4 you do this scenario, these are the likely impacts on
5 environmental or economic side, what if they pursue one
6 versus another and try to do some comparative examination on
7 implementation.
8 We'll probably take just about an hour of
9 discussion on that and anything else you want to talk about,
10 and I would imagine we'd be out of here by 2:00. Is that
11 safe to say? So you can plan accordingly, if you can make
12 travel adjustments. So back here at quarter to 1:00.
13 Thanks.
14 [Whereupon, the meeting was recessed, to reconvene
15 at 12:45 p.m., 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 [12:57 p.m.]

3 MS. STINSON: Let's get started, if we can. We've
4 lost some folks. Let me just say that we have a member of
5 the public interest community here, Glenn Carroll, from
6 Georgians Against Nuclear Energy is going to come in and
7 read a statement that I think is signed by quite a number of
8 her colleagues. I don't think it's very long, and she may
9 have other -- she may stay and have other comments to make,
10 et cetera, but she'll be joining us shortly.

11 What we thought we'd do for the remainder of our
12 time together is talk about any implementation issues that
13 you all can raise for the NRC to consider. Again, keeping
14 in mind, this is all pre-decisional for them. They have not
15 only not decided about proceeding with the rulemaking, they
16 haven't decided about proceeding with any particular
17 alternative, but need to complete a thorough analysis of not
18 only what it would mean to do a rulemaking or not, but also
19 what it would mean to do a rulemaking under the various
20 scenarios that we've been talking about.

21 So with that in mind, why don't we just open it up
22 and see if anybody has any thoughts to kick off the
23 discussion. Yes, Tom.

24 MR. HILL: Tom Hill, from Georgia. If nobody else
25 is going to start others, I will do the agreement states'

1 comments, that I think I would be remiss not to, and further
2 the discussion this morning from the compatibility
3 perspective.
4 From what I have seen and heard here, I'm sure
5 there are some issues that may be interstate commerce
6 related and, therefore, some strict compatibility may be
7 seriously considered. But I think as usual, the agreement
8 states would be looking for flexibility in the rule and the
9 opportunity to be more restrictive if their particular state
10 had that need. So I'll get that on the record.
11 I don't think that's anything new to NRC as far as
12 the analysis and review goes, but do work with the agreement
13 states in this issue, please.
14 MR. MECK: Bob Meck, from the NRC. One of the
15 things that comes up is the awareness that the agreement
16 states regulate norm or at least some of them do, and that
17 those norm standards are different from agreement state to
18 agreement state. And so the question is, if the NRC has
19 some sort of a dose level, what ramifications would that
20 have with respect to the things that the NRC does not
21 regulate or the agreement states don't regulate under their
22 relationship to the NRC and the relationship of the norm and
23 the variability that that might be from state to state.
24 That's kind of a scattered comment, but I think -- I hope
25 you get the gist.

1 MS. ROGERS: Norma Rogers, Allied Signal. I would
2 just like to state that some of the case by case situations
3 that exist today already, a lot of time, effort and expense
4 has been put into those situations by the licensees that
5 have them.
6 I would like to encourage the NRC to remember that
7 and look at that in a grandfathering type situation when it
8 comes to these type materials, so that we do not have to
9 reinvest a lot of resources to show, again, that material is
10 okay.
11 MS. STINSON: What other issues, what other
12 implementation problems can you see in converting towards a
13 -- in the direction of a rulemaking? Obstacles or just
14 things that the NRC is going to have to address. Paul?
15 MR. GENOA: Paul Genoa, with NEI. One of the
16 things that was mentioned earlier yesterday was the recent
17 existence of an industry consensus standard by the American
18 National Standards Institute, ANSI, that has established a
19 standard that covers a full range of materials.
20 One of the obstacles I see currently is that while
21 NUREG-1640 establishes a very fine construct for developing
22 some relative concentrations in dose and some scenario
23 situations, it only covers a range of materials and although
24 it appears that our conversation is focused on steel for 80
25 percent of the discussion, I think steel recycling probably

1 represents about ten or 20 percent of the problem and that
2 there are many other materials that we deal with every day,
3 and steel is not the biggest one.
4 So I guess I see an obstacle in that you will need
5 to do quite a bit more technical basis to cover all the
6 other materials that are needed in a comprehensive release
7 standard.
8 I would just encourage you -- of course, we've
9 only seen early drafts, because the document is not yet out,
10 but I would encourage the NRC to consider establishing a
11 rule and perhaps, if ANSI does cover all the materials
12 adequately, that that might be an approach towards
13 implementation to be able to actually refer to an existing
14 standard in implementation space, one that covers the whole
15 range of materials of interest.
16 Thank you.
17 MS. STINSON: Yes.
18 MR. TURNER: Ray Turner, David Joseph Company. I
19 would like to suggest that if we're talking about -- whether
20 it's free release or restricted release into the recycling
21 industry and we evaluated pathways, or the NRC has evaluated
22 pathways in the electric arc furnace scenarios and basic
23 oxygen furnace, or BOF, scenarios, I'd like to suggest they
24 go further and look at cupolas and induction furnace, the
25 other types of furnaces that could recycle that type of

1 material, as well.

2 MS. STINSON: Good. Thank you. What else? Other

3 analysis that should be completed? Paul?

4 MR. GENOA: I only did the halfway raise because I

5 don't know if it's other analysis, I guess. But if we're

6 asking for input on what the NRC needs to think about in

7 moving forward, particularly in the idea of public

8 communication of information, I think it's extremely

9 important how the issue is framed.

10 We heard yesterday, in a discussion of the broad

11 scope of NRC activities and how this fits in, we heard words

12 like 100 millirem standard has been determined to adequately

13 protect public health and safety. That's not going to cut

14 it.

15 The public doesn't want to hear adequate. They

16 want to hear definitive. If I set this standard, it is

17 clean and it is protective public health and safety, period.

18 If you can't get up and say that, don't go forward.

19 So I think that whatever this material is called,

20 once it is cleared, it has to be called clean, it has to be

21 called safe, whatever. And if we hedge on that and if we

22 don't believe that, then you can't go forward, and I think

23 that's really important.

24 I think for ten or 15 years, we've had a sort of

25 nebulous response to the regulations. We don't see that out

1 of the EPA. They set a standard, five part per million lead
2 is hazardous, 4.99999 is not hazardous. We need to have the
3 same thing here. It either is or it isn't.
4 MS. STINSON: Dale?
5 MR. RANDALL: Dale Randall, with the State of
6 Maine. I would only comment that under the present
7 regulation -- namely, the 5,000 dpm per hundred centimeters
8 squared, perhaps I'm incorrect in calling it a regulation --
9 obviously a different measurement technique is being applied
10 and if the NRC were to go forward, some thought should be
11 put to volumetric counting standards and maybe some guidance
12 in situ gamma spectroscopy and other techniques that are
13 available today that weren't when 8107 came out.
14 MS. STINSON: What other comments? Go ahead.
15 MR. LEMASTRA: Tony LaMostra, AISI. On that issue
16 of volumetric determinations, just be aware of small sample
17 size, if you do in situ measurements, that you may not have
18 uniformity throughout.
19 So if you're looking at a one-by-one jelly
20 detector or a one-inch diameter, rather, jelly-detector, you
21 may find hot spots even volumetrically throughout your mass.
22 So whatever protocols are developed, you're going to have to
23 look at good sampling technique and good statistics.
24 MS. STINSON: What about any other implementation
25 suggestions or concerns that you have regarding different

1 scenarios, sort of getting at the comparative discussion a
2 little bit? Restricted -- some of the restricted release
3 issues that we talked about earlier and different slices of
4 that versus pursuing an unrestricted release scenario. Any
5 comments on really comparing any of them?
6 This is kind of your final chance to weigh in with
7 some advice to the agency for this meeting anyway; certainly
8 not your final chance in the process. Anything?
9 I see Glenn Carroll in the back. I don't know if
10 this would be a good time. Would you like to -- I'll
11 introduce Glenn Carroll. She's President, CEO, Organizer of
12 Georgians Against Nuclear Energy.
13 I'll let you introduce yourself further, Glenn.
14 MS. CARROLL: My name is Glenn and I'm with GANE,
15 Georgians Against Nuclear Energy, and I'm bringing a message
16 from 125 entities that signed a letter laying out as clearly
17 as we can our position and why we have chosen not to
18 participate in this meeting.
19 Letter to the United States Nuclear Regulatory
20 Commission, against radioactive recycling and release.
21 To the United States Nuclear Regulatory
22 Commission. The environmental and public interest
23 communities are declining to participate in the Nuclear
24 Regulatory Commission's Atlanta rulemaking workshop for two
25 reasons. First, the concept of release of radioactively

1 contaminated materials into the marketplace is
2 unconscionable, morally abhorrent, and contrary to the NRC's
3 mission to protect public health and safety.
4 Second, we told you that in 1990, with the BRC,
5 below regulatory concern, hearings, and again in 1993, when
6 we participated in the NRC rulemaking procedure which
7 established the decommissioning criteria for nuclear power
8 plants.
9 The final decommissioning standard flies in the
10 face of input the NRC was given by public interest groups
11 and the American people, to allow zero release above
12 preexisting natural background. In fact, by the NRC's own
13 estimates, thousands of people could die if NRC standard is
14 used.
15 I'm going to make an aside. That's a pretty wild
16 claim, and we've footnoted, we've documented and worked out
17 the basis for that figure. So there are copies of the
18 letter, if you want to check that out.
19 Our position remains. Where's Don? I want to
20 look at Don. Don. Our position remains, the NRC's enforced
21 standard must be to contain radioactive wastes, isolate them
22 from the environment.
23 Two other controversial and environmentally
24 unacceptable practices are showcased in the current NRC
25 process; dumping of so-called low level radioactive waste

1 and dismantling and landfilling of used nuclear power
2 plants, the source of massive amounts of contaminated metal
3 and soil.
4 We share a common concern for the high volume of
5 contaminated metals, materials and earth that have been
6 spoiled for other uses by the nuclear industry. It is high
7 time our species faces the grim reality of nuclear waste and
8 comes to terms with it.
9 There is no known safe level of exposure to
10 radiation. Let us not be seduced by short-term economic
11 concerns, to make decisions that can wreak irrevocable
12 damage in the gene pools of every species of animal and
13 plant on our earth.
14 The honorable nuclear work now is towards
15 developing and implementing effective technologies for
16 nuclear waste containment. We call on the NRC to prohibit
17 the release of radioactive materials and wastes to the
18 marketplace and the environment.
19 Please enter these comments into the National
20 Environmental Policy Act record.
21 This letter was on the internet for three days and
22 received 125 signers. Nearly 100 groups at the local and
23 national level signed, 12 international groups, and although
24 we weren't even soliciting individual signers, 16 people
25 came out of the woodwork and designated themselves as

1 backing this statement.

2 Thank you.

3 MS. STINSON: Thank you, Glenn. And Glenn also

4 brought copies of this and, Mike, maybe you can distribute

5 those around.

6 Glenn, I'll just say that a number of the issues

7 and topics that you've raised and the concern of public

8 perception came out throughout the discussion and is of

9 concern to many folks in this room, and what we're doing is

10 preparing a -- we're taking the flipchart notes from every

11 session and quickly translating them into a document. It's

12 just meeting highlights, which we will distribute to

13 everyone, so -- and really everyone who has sort of been

14 interested in and involved in this issue or interested, but

15 boycotting this particular discussion, so it'll get broad

16 distribution, and then there is a meeting summary.

17 So you call can see for yourselves what other

18 interest groups are raising concerns similar to yours and it

19 really kind of -- the public concern that is expressed out

20 there cuts across all, and everybody takes a different view

21 of it, but it really cuts across all interest groups.

22 Okay. What other issues would you like to raise

23 or implementation questions, anything else really that you'd

24 like to raise before we close this afternoon? Mike?

25 MR. LESNIK: I would like to address two comments.

1 One, I'd like to address to Glenn, as well as to those that
2 are in here. And that is, historically and up to this
3 point, the Institute of Scrap Recycling Industries, which is
4 the trade association that represents scrap recyclers, both
5 in the United States and abroad, as well as a number of
6 manufacturers, has had a position, a very general position,
7 in that radioactivity doesn't belong in the scrap recycling
8 stream.
9 That position came about because of the years of
10 battles that the recycling and the steel industry has had
11 with orphan source material, as well as naturally occurring
12 radioactive material, getting into the recycling stream.
13 So it's always been a concern that this material
14 that was never designated to get into the recycling stream
15 has gotten there and has complicated the livelihoods, as
16 well as the product of many companies; has forced many
17 companies to purchase radioactivity detectors, simply to
18 protect the companies, their employees, and their product.
19 The discussion now with these issues is going --
20 is looking at a couple of issues that I'll simplify, because
21 that's how we best understand them. One is, is there ever
22 some level that's above zero of radioactivity that can be a
23 part of the recycling stream. That's a reason why we're
24 participating in these discussions and the reason why we
25 haven't taken a position on this, other than the position

1 I've alluded to, because we wanted to hear all of the facts,
2 listen to all of the concepts, not only the science, but the
3 concerns.
4 One of the issues that has been of concern is that
5 we've listened to the scientists at both the NRC and the
6 EPA, two entities who have been tremendous friends of the
7 recycling industries and who have responded in areas such as
8 generally licensed sources and better control and orphan
9 sources and how to get them out of the hands of the
10 recycler.
11 But we've also listened to the concerns of
12 representatives of many environmental groups and the one
13 problem that we have is that in listening to both sides, at
14 least we have been hearing some common ground. We've been
15 hearing that there are some areas where there are some
16 agreements, although when we hear public statements and read
17 material that's been published, there's indication that
18 there isn't a common ground.
19 And the other concern that we have is that for the
20 recycling industry to really be able to put our thumb on a
21 position, it would greatly benefit to hear the nuclear
22 representatives make a point and have it rebutted by the
23 environmental industry, and have the environmental industry
24 make a point and have it addressed by the nuclear industry,
25 so that we can hear both sides in the same room, rather than

1 hearing them in different forums.

2 I think we -- and I'm speaking for myself --

3 understand why many entities in the environmental arena have

4 wanted to not attend these meetings. We understand your

5 concerns and your reasons for doing that.

6 What I would ask is, is it possible that at some

7 point, maybe not under the auspices of an NRC meeting or an

8 EPA meeting or even an environmental meeting, but in the

9 auspices of can we hear all parties discuss the issues, so

10 that we could come to some conclusion and maybe others can

11 come to some better conclusion, because it's the age-old

12 argument that if you listen to two people discuss the same

13 issue, but you hear them at different times, they both make

14 sense, and in some cases, they may be saying the same thing;

15 in some cases, they may be saying the different things.

16 But until you can hear them address each other is

17 it possible to say I understand what our position should be

18 because I've heard the issues debated.

19 And so what we would ask is hopefully all sides

20 could agree to such an exchange of ideas in person,

21 one-on-one, so that we can hear the debate and we could then

22 better understand what are the common points, what are the

23 differences, and make a better informed final decision on

24 where the scrap recycling industry needs to fall to.

25 MS. STINSON: I can well imagine that there are

1 other interest groups who are also not here that are in the
2 same position. As Meridian discussed the development of
3 these workshops with many other interest groups, such as
4 solid waste officials and the unions, that they did not feel
5 they knew the issues to a degree that they were completely
6 up to speed, and yet there is this intense public debate
7 going on in the media and elsewhere, and people are talking
8 to the same issues and yet past each other in some
9 instances, and there are some real, real differences and
10 what are the basis of those differences.
11 So it sounds like what you're suggesting, Mike, is
12 the creation of some kind of a forum where all parties can
13 agree that they will sit down together and face-to-face
14 address those issues, and I think it would be helpful to get
15 more of people's thoughts at some point about how to
16 construct such a thing. It's not an easy thing to do on
17 this issue.
18 What else, Paul?
19 MR. GENOA: Paul Genoa, NEI. I hear and
20 understand a lot of what you're saying and we had hoped that
21 through the public workshop process, such an opportunity
22 would be created. It appears there are some obstacles
23 there. If there were creative solutions that we could get
24 past to bring parties together, we would participate or we'd
25 certainly think about it, and we have thought about how to

1 do such a thing.

2 MS. STINSON: Rick?

3 MR. BUTTON: I believe there's a UN, United

4 Nations committee that's been formed or being formed to

5 discuss the same issue, possibly meeting later this month in

6 Geneva, I think. I also believe that the European community

7 is debating the same issue, and I would encourage the NRC to

8 at least forward the results of these meetings to those

9 committees for their reference, as well.

10 MS. STINSON: Thank you. Don?

11 MR. COOL: Don Cool, with NRC.

12 MS. STINSON: In the back.

13 MR. COOL: I think probably it is worth taking

14 just a moment and letting me reaffirm, from the Commission's

15 standpoint, that our desire is, in fact, to have the exact

16 dialogue that we've been talking about here for the last few

17 minutes. Our original hope and desire was that this set of

18 workshops would, in fact, be that kind of forum, where that

19 kind of dialogue and back-and-forth and understanding could

20 take place.

21 I guess I remain optimistic, with two workshops

22 yet to be held, that that is a possibility that can occur

23 even within the meetings that have already been envisioned.

24 However, I would expect that if that's not the case, that we

25 would still be very open and interested in having those

1 kinds of discussions as we proceed through the process,
2 because this set of four meetings is not a start and a
3 finish.
4 It is a start. It is a step in a process to
5 determine what to do, how to do it, and what its
6 implications are.
7 I fully expect that there are going to be other
8 opportunities, perhaps many other opportunities as we move
9 through this particular process to try and have those
10 discussions. And at least from the standpoint of the staff,
11 if there is an opportunity in other forums, whether the
12 steel manufacturers, NEI, some of the citizen or
13 environmental groups or others, which would not carry the
14 imprimatur of an agency's meeting or something else, which
15 might facilitate that dialogue, we'd be quite interested in
16 examining that issue and presuming that we had an
17 appropriate legal basis from some of the other constraints
18 that I have to deal with in terms of how the agency conducts
19 its business, participating in that process.
20 MS. STINSON: Okay. Thank you, Don. Any other
21 final comments? Okay. Thanks everyone for your
22 participation. You will receive, immediately after this
23 meeting, highlights, as well as a listing of everyone who
24 did attend.
25 NUREG-1640, anybody who wants to put a big check

1 mark by their name can get a copy of NUREG-1640 mailed to
2 them. We really apologize they weren't here.
3 MR. LESNIK: Leave that on the front table there
4 maybe.
5 MS. STINSON: Put it right here. Thanks
6 everybody, safe travels home.
7 [Whereupon, at 1:25 p.m., the meeting was
8 concluded.]
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REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

NAME OF PROCEEDING: RELEASE OF RADIOACTIVE MATERIAL WORKSHOP

PLACE OF PROCEEDING: Atlanta, GA

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Bob Addington

Bob Addington
Official Reporter
Ann Riley & Associates, Ltd.