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Fuel Reprocessing Facilities

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 MEETING ON A POTENTIAL RULEMAKING FOR SPENT NUCLEAR
5 FUEL REPROCESSING FACILITIES

6 + + + + +

7 TUESDAY

8 JUNE 21, 2011

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10 AUGUSTA, GEORGIA

11 + + + + +

12
13 The Meeting was held at the Hilton Garden
14 Inn Augusta, 1065 Stevens Creek Road, Augusta,
15 Georgia, at 9:00 a.m., Chip Cameron, Facilitator,
16 presiding.

17 PARTICIPANTS:

18 SVEN BADER, AREVA

19 JIM BRESEE, US Department of Energy

20 TOM CLEMENTS, Friends of the Earth

21 SUSAN CORBETT, South Carolina Sierra Club

22 YAWAR FARAZ, US Nuclear Regulatory Commission

23 JOHN GREEVES, JTG Consulting

24 BRITT HILL, US Nuclear Regulatory Commission

25 BRET LESLIE, US Nuclear Regulatory Commission

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1 ROD McCULLUM, Nuclear Energy Institute
2 ALEX MURRAY, US Nuclear Regulatory Commission
3 MARY OLSEN, Nuclear Information and Resource Service
4 WENDY REED, US Nuclear Regulatory Commission
5 KEVIN STRICKLAND, South Carolina Department of Health
6 and Environmental Control
7 DEREK WIDMAYER, Advisory Committee on Reactor Safety
8 MARK YEAGER, South Carolina Department of Health and
9 Environmental Control
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P R O C E E D I N G S

9:13 A.M.

1
2
3 MR. CAMERON: Okay, good morning,
4 everyone. My name is Chip Cameron. And it's my
5 pleasure to serve as the facilitator for the meeting
6 over the next two days. I'm going to be back in a
7 little while to talk about meeting process issues.
8 But we wanted to hear first from Jack Davis, who is
9 the Deputy Director of the Technical Directorate,
10 Division of High-Level Waste Repository Safety. And
11 he's just going to give us a short welcome. And then
12 after I talk a little bit about process issues, that
13 is going to come back to give you an overview of the
14 whole process. But thank you for all being here and
15 welcome and Jack, I'll just turn it over to you now.

16 MR. DAVIS: Well, good morning, ladies and
17 gentlemen. And welcome to the Nuclear Regulatory
18 Commission's Public Meeting on Reprocessing Regulatory
19 Framework Development.

20 Many of the folks in the room obviously
21 are familiar with NRC and its activities, but for
22 those of you that are new to this, I thought I would
23 just give you some perspective on who we are and where
24 all this fits in in the national context.

25 The NRC, obviously, is an independent

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1 agency. We're charged with the protection of public
2 health and safety in the commercial uses of
3 radioactive material which differs somewhat from what
4 DOE does. As part of our mission, we set regulations
5 that the licensees must follow to ensure public health
6 and safety and for the last several years we've been
7 working on the development of a potential rule for
8 reprocessing.

9 We conduct all of our activities in an
10 open and transparent manner and as a matter of fact
11 that's why we're here today to seek stakeholder input
12 on our activities and to make sure that we're
13 listening to the broadest community of folks that we
14 can.

15 However, I think it's important to realize
16 that NRC does not set policy for reprocessing. We
17 don't endorse it necessarily. We don't not endorse
18 it. We just follow the national mandate and we also
19 support and facilitate the needs of the industry. So
20 again, that's why it's very important for us to
21 understand from the public's perspective how they feel
22 about the various activities that are going on in this
23 area. So thank you.

24 MR. CAMERON: Thanks, Jack. And let me
25 just take a few minutes on some process issues. I'd

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1 like to talk about the format that we're going to be
2 using for our discussion over the next two days, some
3 simple ground rules to help us to have a productive
4 meeting, then do some introductions around the table,
5 and then I just want to do an agenda check with you to
6 make sure that everyone knows what we're going to be
7 doing.

8 For all of you in the audience, there's a
9 booklet out on the table if you don't have it.
10 There's an agenda and there's a list of participants.

11 In terms of the format, we're in a so-called round
12 table setting. And the objective for the round table
13 format is to encourage all of you to talk to one
14 another about the issues. This is going to give the
15 NRC and you, we hope, better information than you
16 would get in a typical town hall meeting or in the
17 written comment process.

18 We have representatives from all of the
19 affected or concerned interest on this issue around
20 the table. The NRC staff is also at the table and
21 they're here to serve as a resource for you and to
22 occasionally ask you to questions about your
23 perspectives that's going to help them to formulate
24 the technical basis for moving forward with this
25 reprocessing rulemaking. There's going to be

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1 different NRC staff at the table, depending on the
2 issue. And we'll introduce them to you when they come
3 up to the table.

4 So the NRC not only wants to hear each of
5 your perspectives, but wants to get an idea about what
6 you think about the other participants' perspectives
7 around the table.

8 The focus of the discussion today is going
9 to be right here, and tomorrow, right here at the
10 table, but periodically we're going to go out to those
11 of you in the audience to hear what your views might
12 be on the issues. The NRC is also taking written
13 comments on these issues and the comment period closes
14 on July 7th of this year.

15 Now ground rules, pretty simple. If you
16 want to talk, then I'm just going to ask you to just
17 turn your -- these things are name tents. Turn your
18 name tent up and that way I'll know who wants to talk
19 and you won't have to worry about continually raising
20 your hand or jumping into the discussion. So that's
21 one ground rule.

22 I would ask that only one person speak at
23 a time. Most important reason for that is so we can
24 give our full attention to whomever has the floor at
25 the moment, but also so that we can get what I call a

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1 clear transcript. We are taking a transcript of the
2 meeting. It's going to be the NRC's record of the
3 meeting. It's going to be the public's record of the
4 meeting and we have Brandon Paterson in the back of
5 the room. He's our court reporter, stenographer. So
6 one person at a time will help Brandon to keep track
7 of who is speaking.

8 And when I come out to those of you in the
9 audience, if you could just introduce yourself to us.

10 I think Brandon is going to be able to keep track of
11 the people at the table in terms of who is speaking so
12 that you won't have to put your name tent or you won't
13 have to introduce yourself all the time. And I would
14 just encourage you to all participate fully, try to be
15 constructive, relax, and Mary has already testing the
16 name tent up. Yes.

17 Do you have a question?

18 MS. OLSEN: I do. I am hesitating, but I
19 need to do this and it's really before you get into
20 your content. A lot of staff time could be wasted, a
21 lot of our staff time has been wasted over the
22 question of foreign participation and I understand
23 that AREVA probably knows a whole lot about these
24 issues, but what is the nature of its stake and why is
25 it at this table?

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1 MR. CAMERON: Okay, we're going to get to
2 that when we go to discussion, Mary, but thank you for
3 putting that on the table and I'll go back to you when
4 we get to the appropriate point and that will come
5 soon so that we can discuss that, okay?

6 What I wanted to tell everybody is that
7 there may be issues that don't squarely fit into the
8 agenda items that we're going to be addressing and for
9 those issues I'm going to put that in the so-called
10 parking lot and we'll come back and address that at
11 the appropriate time. So I'm just going to make a
12 note on the foreign ownership issue right there.

13 I do want to try and help you all form
14 discussion threads so that we can have as coherent
15 discussion as possible as opposed to jumping around
16 from topic to topic. So I may not take the name tents
17 in order as they're put up so that we can keep going
18 on discussion threads.

19 As I mentioned, we do have the parking lot
20 and I want to go around the table now before I do an
21 agenda check so that we all know one another. You've
22 already met Mary Olsen. Okay? So I'm going to start
23 with Mary.

24 And if you could just introduce yourself
25 and affiliations and one or two sentences of what you

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1 would like to see come out of this workshop or
2 concerns. This would be one time to do it. And I'm
3 going to keep track as sort of a beginning agenda
4 check.

5 Mary?

6 MS. OLSEN: Mary Olsen, the Southeast
7 Director of Nuclear Information and Resource Service,
8 members in all 50 states, founded in 1978 by
9 grassroots activists, here to affirm that there is not
10 a single national mandate when it comes to plutonium.

11 In our view, it is not an element. It is an
12 addiction and this meeting has to include the idea
13 that we are not necessarily here in consensus.

14 MR. CAMERON: Okay, and Susan, can we test
15 the microphones, table mics here. You have to press
16 it to be on. You don't have to continue to hold it.
17 And if you don't want any side bar conversations
18 picked up after you're done, you can turn it off.

19 MS. CORBETT: You want me to be the guinea
20 pig? Is that good?

21 My name is Susan Corbett. I am the State
22 Chair of the South Carolina Sierra Club here in South
23 Carolina. We have about 5400 members and beyond that
24 we are part of the Common Agenda which is a
25 cooperative collective of all the conservation groups

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1 in the State of State Carolina with about 50,000
2 members, including thousands of members here in the
3 Aiken, North Augusta area.

4 And we are very concerned about the issue
5 of nuclear waste and we are uniform in our opposition
6 to reprocessing. So we're here to provide some input
7 and represent the stakeholders. I am a volunteer.
8 I'm probably the only person up here that's not being
9 paid to be here, but I'm glad to be here because we
10 want to be part of this discussion. Thank you.

11 MR. CLEMENTS: I'm Tom Clements. I'm with
12 the environmental organization Friends of the Earth,
13 based in Columbia, South Carolina. Friends of the
14 Earth is based in Washington. I've been monitoring
15 Savannah River site activities for over 30 years now
16 from a public interest perspective, so I am concerned
17 about implications for reprocessing of spent nuclear
18 fuel at the site or other DOE sites. Thank you.

19 MR. CAMERON: Thank you, Tom. Jim?

20 MR. BRESEE: My name is Jim Bresee. I'm
21 with U.S. Department of Energy, Office of Nuclear
22 Energy. Our office is responsible for research and
23 development on advanced separations and waste forms
24 technology. Thank you.

25 MR. GREEVES: Is this on?

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1 MR. CAMERON: A green light will tell you
2 if it's on.

3 MR. GREEVES: Can you hear me? How about
4 now? Okay. John Greeves, JTG Consulting. And just
5 my career has taken me lots of places. I spent 31
6 years working for the Nuclear Regulatory Commission,
7 retired as Director of Waste Management, so I'm quite
8 familiar with the issues on the table here today, and
9 writing, implementing, and enforcing regulations. So
10 I've got that as a background.

11 And I've probably visited most of the fuel
12 facilities in this country and many others, so I'm
13 quite familiar with the issues, the hazards, and look
14 forward to the discussion. I was one of the authors
15 of the NEI White Paper, so I'm quite familiar with the
16 content of that and look forward to some engagement
17 today on the issues. And thank you for putting out
18 the summary of your gaps. I found that quite useful
19 and I think it's a good part of what will help us
20 engage in discussions. So thank you for your efforts.

21 MR. CAMERON: Thanks, John.

22 MR. MURRAY: Yes. Good morning. My name
23 is Alex Murray. I'm with the U.S. Nuclear Regulatory
24 Commission out of Rockville, Maryland. I have worked
25 in both government regulatory agencies and also in

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1 private industry. And I've been in and out of
2 reprocessing, spent nuclear fuel, high-level waste
3 issues for decades, which is amazing since I'm only
4 28. Thank you very much.

5 MR. CAMERON: And NRC staff is not always
6 honest with you.

7 MR. MURRAY: Twenty-nine.

8 MR. CAMERON: Thank you, Alex.

9 MR. BADER: I'm Sven Bader. I'm from
10 AREVA Federal Services. AREVA is here to continue to
11 be engaged with this process of coming up with a new
12 regulatory basis for recycling activities in the
13 United States. Obviously AREVA has some experience
14 working in France with reprocessing/recycling and
15 we've also had some activities in Japan and in the
16 United States.

17 MR. CAMERON: Thanks, Sven. Wendy?

18 DR. REED: Good morning. My name is Wendy
19 Reed and I'm working with the U.S. Nuclear Regulatory
20 Commission. For the past couple of years I've been
21 part of the staff team that has been developing the
22 draft regulatory basis document and I'm looking for
23 hearing stakeholder reaction to our proposed positions
24 in closing the various gaps on that basis. Thank you.

25 MR. MCCULLUM: I'm Rod McCullum of the

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1 Nuclear Energy Institute and I just want to thank the
2 NRC for holding this workshop. I think this is the
3 third one we've done. We found the others very useful
4 and I know the materials that are in the booklet give
5 us a pretty good window into what NRC is thinking at
6 this point and look forward to discussing it.

7 While I agree with Mary Olsen that there
8 is not a consensus on whether or not or how we should
9 reprocess yet, it's our position that a critical first
10 step as to making decisions as to whether or not or
11 how we will reprocess is having the regulatory
12 framework in place so that we in the industry and our
13 friends in the Government can make decisions and
14 having that framework informed by stakeholder input is
15 critical because we need to know that that is a
16 regulatory framework we can, in fact, go forward with
17 credibly.

18 So I appreciate all the stakeholders here
19 and appreciate NRC for holding this meeting and look
20 forward to our discussion.

21 MR. STRICKLAND: My name is Kevin
22 Strickland. I'm with the South Carolina Department of
23 Health and Environmental Control. I'm here to monitor
24 the proceedings today and to observe it and to engage
25 whatever facilities that I may deem necessary.

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1 MR. YEAGER: My name is Mark Yeager. I'm
2 with -- I work with Kevin at the Department of Health
3 and Environmental Control, Division of Waste
4 Management. We administer the Agreement State Program
5 and our interest is the ancillary licensing that may
6 occur as a result of proposed commercial facilities.
7 I'm also here to represent Conference of Radiation
8 Control Program Directors and I'll be sharing the
9 results of this meeting with the board of that
10 organization. They are a group of stake radiation
11 regulatory programs and I know that they have interest
12 in the proposed rulemaking.

13 MR. CAMERON: Okay, thanks, Mark. Thank
14 you all.

15 Let's take care -- before I do an agenda
16 overview now that you all know each other. Let's see
17 if we can put the foreign ownership issue to rest.

18 As I mentioned at the beginning, we wanted
19 to make sure that all interests that may be affected
20 or concerned about reprocessing rulemaking are at the
21 table and that's why we have all of you here,
22 including AREVA.

23 I just want to go to one of the
24 representatives from our Office of the General Counsel
25 to just state what the rule is on foreign ownership

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1 and then come back to the issue, people around the
2 table. I think Rod wants to say something about that.

3 But it's an important issue raised by Mary, so let's
4 take care of it right at the beginning and then see if
5 we can proceed from there.

6 This is Bret Klukan, Office of the General
7 Counsel, NRC.

8 MR. KLUKAN: Hi. It's Klukan, no offense.
9 My name is kind of confusing like that.

10 A reprocessing facility would be
11 considered a Production Facility under Section 103 of
12 the Atomic Energy Act. And as such, foreign ownership
13 would be prohibited, just as it is for reactors in the
14 United States. And so that prohibition would carry
15 over to this type of facility. I think that generally
16 answers the question.

17 MR. CAMERON: Okay. And let's go to Rod,
18 because that's part of the backdrop I think for Mary's
19 concern. But let's go to her concern.

20 Rod?

21 MR. MCCULLUM: Yes, I'm very glad one of
22 the first things I was going to do was ask the NRC
23 point out that rule and certainly AREVA's interest
24 here is as they are part of the U.S. nuclear industry,
25 just as Toyota is part of the U.S. car industry these

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1 days, we live in a very global marketplace.

2 I'm representing the entire nuclear
3 industry today, all of our member companies, the
4 operators of the 104 nuclear plants. There is a lot
5 of interest amongst a number of companies in the
6 global nuclear industry including U.S. companies.
7 There's two significant nuclear utilities, the
8 Tennessee Valley Authority and Duke that were very
9 interested in making sure we were represented in this
10 forum.

11 There's a representative from Westinghouse
12 as a company that may be interested in recycling
13 technologies and I know GE was very interested in --
14 they're not here today, but in participating, another
15 American company.

16 So the question of whether or not it's a
17 foreign interest, I can state unequivocally there is
18 significant U.S. interest in answering this question
19 of what would the rules for recycling be so that U.S.
20 companies could make decisions as to whether or not
21 they should buy AREVA's technology and use AREVA's
22 technology in accordance with NRC's rules.

23 MR. CAMERON: Okay, let's go to John and
24 then to Mary and see if we can wrap this up.

25 John Greeves?

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1 MR. GREEVES: I didn't totally understand
2 what Mary's question was, so hopefully she can expand.

3 It was stated very quickly and I am interested in
4 what her question was. I think you answered a
5 question. Was that her question or did she have
6 another one?

7 MR. CAMERON: I think the concern and I'm
8 going to let Mary --

9 MR. GREEVES: She can speak for herself,
10 of course.

11 MR. CAMERON: I think the concern was is
12 why is a foreign company at the table, basically. Is
13 that what your concern was? And do you still have the
14 concern?

15 MS. OLSEN: What I asked was what is their
16 stake? And I'm not asserting that they want to be the
17 licensee, but there's a hell of a lot of press rumor,
18 buzz out there, there's posture. And where I'm coming
19 from is that we have put a lot of Nuclear Information
20 Resource Service staff time into fighting Calvert
21 Cliffs which is devolved (9:34:43) down to the
22 question of foreign ownership and you know, we've got
23 laws. And you all know the laws. We just heard from
24 Office of the General Counsel what the law is.

25 So I'm not asserting what their stake is,

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1 but I'm asking, you know, if they're a stakeholder at
2 this table, what's their stake?

3 MR. CAMERON: I think that Rod probably
4 answered that.

5 Sven, do you just want to say something on
6 that and then I'm going to suggest that we move on.

7 MR. BADER: I don't know. I'm not
8 involved with the Calvert Cliffs activity, so I'll
9 just put that to rest because I can't give you any
10 experience based on there, but from a perspective of
11 us sitting at this table, what we believe is we bring
12 here is some experience. I think a lot of the
13 regulations that we're looking at, we're trying to say
14 okay, here's some of the implications. We've been
15 forthright. We've not been trying to hide things. We
16 do produce waste, so we pointed out high-level waste
17 is something that we need to look at and I think it's
18 one of the topics we're going to address today.

19 What AREVA can do is we can say this is
20 what we bring in our experience for the high-level
21 waste. There's a lot of other examples out there.
22 AREVA thinks we have a good, commercial, viable
23 process.

24 The other examples are probably not good
25 and I'm sure they're going to be brought up, talk

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1 about West Valley. We can talk about Hanford, but
2 from an AREVA perspective, we believe we bring some
3 information that's valuable to this conference here or
4 this meeting.

5 MR. CAMERON: Again, I think AREVA has
6 been at the table for the other two workshops and I
7 think you'll find the information that they have is
8 going to be useful for you.

9 Tom?

10 MR. CLEMENTS: Chip, thank you. I know
11 you want to move on, but I had a question along these
12 lines and because it relates to the Federal Register
13 announcement on which this meeting was based. I know
14 everybody in the room is familiar with the request to
15 develop the reprocessing regulations, but as related
16 to the question of AREVA or other companies and the
17 Federal Register notice.

18 I'd like it clarified if we could and let
19 me read from the Federal Register notice. "In mid-
20 2008, two nuclear industry companies informed the NRC
21 of their intent to seek a license for a reprocessing
22 facility in the U.S. An additional company expressed
23 its support for updating the regulatory framework for
24 reprocessing, but stopped short of stating its intent
25 to seek a license."

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1 I wonder if we could clarify for the
2 record which two companies were the ones. I'm aware
3 of one of them, but I'm not aware of the other and --
4 because it was mentioned in the Federal Register
5 announcement, I'd like to know more why we're here
6 because of the companies' request, if we could.

7 MR. CAMERON: Okay, fair enough, Tom.

8 Rod?

9 MR. MCCULLUM: Yes, the two companies that
10 initially expressed an interest were AREVA and Energy
11 Solutions. There have been two more recent letters
12 submitted to the NRC, one by AREVA and one by General
13 Electric. And so the interest continues out there and
14 as I said before, there really is an open question in
15 the industry as to whether or not we would proceed
16 with recycling, but there's a very strong agreement
17 that we need a good, credible regulatory framework
18 before we can make those decisions to go forward.

19 MR. CAMERON: And Susan?

20 MS. CORBETT: I think one of the things
21 we're going to be talking these next two days is the
22 terminology. And I would like to suggest that we
23 don't call it recycling at this point and that we
24 continue to call it reprocessing which is what it is,
25 until we've reached that part.

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1 MR. CAMERON: Okay, good. And we will get
2 to that during Wendy's presentation. One last
3 sentence. Is it going to be sort of e.e. cummings-
4 esqe?

5 (Laughter.)

6 MS. OLSEN: Part 50.38, I think it is,
7 says you can't even apply if you're a foreign-
8 controlled interest. It says you can't get a license,
9 but it also says you can't even apply.

10 MR. CAMERON: Okay, well, we know what the
11 situation is with the foreign ownership regulations at
12 this point and this was a good opening discussion on
13 participation. So let's move on with just a real
14 short agenda check with you. And then we're going to
15 get Dr. Wendy Reed from the NRC staff. And one of the
16 things that she's going to talk about is this
17 distinction between reprocessing and recycling as
18 Susan mentioned.

19 And of course before we get to Wendy,
20 we're going to hear from Jack Davis on an overview and
21 there may be some other larger questions that you want
22 to ask at that point.

23 We are focusing on the regulatory
24 framework for the regulation and licensing, licensing
25 and regulation of a reprocessing facility and we've

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1 already heard from people about what they think about
2 whether reprocessing should be a viable option. So
3 that's on the table. And I'm just going to ask
4 everybody to sort of suspend their disbelief in a
5 sense and talk about what should be in the NRC
6 regulatory framework on this issue.

7 Second point on agenda is that we're going
8 to have NRC staff teeing up each agenda item with a
9 presentation and they'll tell you what the issues,
10 what the NRC has heard from stakeholders on the issue,
11 and what the NRC's initial thinking is on the issues.

12 And when they do those tee-ups, I'm just going to ask
13 you to hold your questions until they're done with
14 their complete presentation so you can get the entire
15 picture.

16 The last over-arching issue that I want to
17 mention is that we know that in this area of the
18 country, the Southeast, that there are other issues of
19 concern, for example, the licensing of the MOX
20 facility down the road. This is a meeting on the
21 reprocessing framework, so we're not going to be
22 discussing MOX, except to the extent there's an
23 implication from the MOX facility that may be
24 applicable to the development of the regulatory
25 framework for reprocessing.

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1 But if there are questions about MOX, we
2 have asked two members of the NRC staff to be here to
3 talk with you offline any questions or concerns about
4 that and we have David Tiktinsky who is here from our
5 Office of Nuclear Material Safety and Safeguards. We
6 have Brett and I won't try again because I'll probably
7 blow it. And just give it to us again.

8 MR. KLUKAN: It's Klukan. K-L-U-K-A-N.

9 MR. CAMERON: And we also have Sherry
10 Wilson here from the South Carolina Department of
11 Health and Environmental Control and she is the
12 federal facilities liaison. So if you do have issues
13 on MOX, please talk with them.

14 Let's hear from Rod and I think that --
15 you have the agenda in front of you and I'm going to
16 introduce people from the NRC staff as they come up.
17 And so that we can get to Jack Davis, I think let's go
18 to Rod and then we'll have Jack come on.

19 MR. MCCULLUM: Yes, and this might be an
20 issue for Jack to discuss. One thing I didn't see
21 specifically on the agenda, but I think it would be
22 very interesting to all the participants here,
23 particularly since we're looking at schedules upon
24 which we have to comment on things is what NRC's
25 potential budget scenarios are for this effort. What

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1 you'll be working on in Fiscal Year -- the rest of
2 Fiscal Year 2011 with your funding which ends in
3 October for those who aren't familiar with the federal
4 budget year and what your budgeted to do in 2012 and
5 beyond.

6 MR. CAMERON: Okay.

7 MR. MCCULLUM: So we can kind of -- I
8 think that goes to Mary's question of the resources we
9 all devote to these things to see what your resources
10 are going to provide.

11 MR. CAMERON: Good. I think that's a
12 legitimate question that falls into Jack's overview
13 presentation.

14 So Jack, why don't we have you come up
15 and talk to us. Again, Jack Davis, Deputy Director,
16 Technical Support Directorate, Division of High-Level
17 Waste Repository Safety in our Office of Nuclear
18 Material Safety and Safeguards which we'll be
19 referring to as NMSS. We'll use the acronym for that.

20 Jack Davis.

21 MR. DAVIS: Thanks, Chip. I will
22 actually, Rod, get to you. The answer may not be as
23 fruitful as you like, but I can tell you what I can
24 tell you on that.

25 But I thought also we would talk a little

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1 bit about who's doing the regulations, who is actually
2 going to write them and so on, because things have
3 changed recently and all folks may not be familiar
4 with that.

5 If you've been following this, you know
6 that reprocessing was underneath the Division of Fuel
7 Cycle Safety and Safeguards in our Office of Nuclear
8 Material Safety and Safeguards. That was transitioned
9 over to my division in high-level waste. And there
10 was some reasons for that to better align and
11 integrate with the back end of the fuel cycle and how
12 we are managing those things to allow fuel cycle to
13 focus on their licensing and oversight activities of
14 existing facilities.

15 So there was a numbers of reasons to do
16 that and that's why you see underneath us and it seems
17 strange perhaps to be underneath the high-level waste.

18 But there's some things under way right now that
19 we're looking at name changes and things like that
20 that would help to better understand why it's there.

21 In addition to that, we work very closely
22 with our Office of Federal and State Materials and
23 Environmental Office which actually does the actual
24 turning of the crank, if you will, for rulemaking as
25 well as supporting us in the technical support

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1 aspects. And then there's a number of additional
2 offices that have been involved, rightfully so, and
3 critically so: Office of Nuclear Security and
4 Incident Response which helps us do safeguards and
5 security, the Office of Nuclear Research which does a
6 lot of our developmental activity and one that you
7 don't actually see on here is our Center for Nuclear
8 Waste Regulatory Analysis. It's a conflict-free,
9 federally funded, research and development center down
10 in San Antonio. They support us very heavily, not
11 only in this area, but in a number of different areas.

12 And we have several of their staff here today, one of
13 which has organized the entire meeting which is Miriam
14 sitting in the back there.

15 So with regard to the process, over the
16 last several years this activity has been going on.
17 It first started with GNEP and now I don't think we
18 even talk about GNEP any more, but yet this activity
19 of doing reprocessing is still on the NRC's radar
20 screen. As such, the staff has identified about 19
21 gaps in the current regulations that would either have
22 to be adjusted or revised or a new regulation put in
23 place so that we can proceed forward with
24 reprocessing.

25 These issues range from everything from

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1 safety issues to waste management issues, safeguards
2 and security, as I mentioned, environmental issues and
3 so on. And over the next two days, our intent for
4 this public meeting is to actually get into some
5 detail on what those issues are, what our particular
6 path forward that we're proposing and then to hear
7 from the other stakeholders here today to find out
8 what they feel about our positions that we want to
9 take on them.

10 As far as how does this work and what's
11 the time frame and so on, we've talked about we would
12 have to provide a recommendation to the Commission
13 this year. The Commission then gets to decide whether
14 we actually even proceed with rulemaking or if we do
15 proceed with rulemaking, what time frame we would be
16 on. There's a number of things that they consider.

17 Obviously, there's limited resources in
18 the Agency and they have to focus on the highest
19 priority safety activities, as well as there's
20 parallel rulemakings that are going on that also tie
21 into the rulemaking for reprocessing which then
22 obviously impacts the schedule, if it gets delayed or
23 whatever schedule that they happen to be on. As well
24 as we all are familiar with the Blue Ribbon Commission
25 is deliberating on the national policy for the nation

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1 with regard to the back end of the fuel cycle which
2 would have implications to reprocessing.

3 If the Commission does direct us to
4 proceed with rulemaking, it takes considerable effort.

5 It takes several years to do. There's a number of
6 things that would have to be done, finalizing the
7 gaps, developing a rulemaking plan, developing an
8 Environmental Impact Statement, regulatory guidance,
9 SRPs, the whole nine yards.

10 The slide here doesn't show any particular
11 dates. There's a reason for that because as I was
12 saying all these things are contingent upon budgets
13 and a bunch of other things, but we have stated
14 publicly that we are on about a 2015 to 2017 time
15 frame, if and it's a big if, if we continue to get
16 consistent funding and if the Commission decides to
17 move forward with rulemaking.

18 Again, we don't know what their position
19 is going to be yet. We haven't provided them our
20 recommendation. That doesn't come until September of
21 this year and then they will take so much time to look
22 at that particular situation and then get back to us
23 through a staff requirements memorandum which would
24 either direct us to proceed or direct us not to
25 proceed and in what time frame.

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1 I think the important point here that I
2 wanted to raise with all of these things and you can
3 see the number of major deliverables that would have
4 to be done to actually make a final rule, ample
5 opportunity for public comment. We need public
6 comment, stakeholders as well, and we actively go out
7 and seek that because to do accomplished rulemaking
8 like this, clearly we need to hear from all sides and
9 what are the significant issues at hand.

10 So where are we now? As I mentioned, we
11 are going to provide a regulatory basis document and a
12 recommendation to the Commission the end of September.

13 This would include staff proposed closures to the
14 gaps. Shortly thereafter, we would have an
15 Environmental Technical Report available. This would
16 feed an EIs if we were to proceed with rulemaking.

17 And all of these documents have benefitted
18 from stakeholder interactions. We've had two previous
19 meetings this past year. We've had other comments
20 from folks coming in through our web and other means
21 and we've factored those particular things in.

22 Here, you can see just a few of the
23 examples of other written comments that we've received
24 from our Advisory Committee on Nuclear Waste and
25 Materials, NUREG 1909. We, of course, have heard much

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1 about the NEI White Paper which is the 7x which you've
2 heard John Greeves talk about earlier.

3 We've received correspondence from the
4 Union of Concerned Scientists, two letters of intent,
5 again, more recent letters of intent from both AREVA
6 and GE that they plan to proceed with reprocessing.
7 We interact very extensively with the Department of
8 Energy. We attend a lot of their seminars and so on
9 in reprocessing as they look at the future development
10 activities in various new technologies and so on.

11 And then, of course, we even consider the
12 recommendations from the Blue Ribbon Commission. They
13 haven't specifically said -- made comments concerning
14 reprocessing, but certainly it has an impact when
15 they're looking at what the country is going to do
16 with the wasted fuel.

17 For this meeting, you've already heard
18 that Chip has mentioned the booklets. I hope you find
19 them useful. That summarizes basically where we're at
20 from a staff position, not necessarily a Commission
21 position and how we propose to resolve those gaps.

22 You'll hear, as they talk over the next
23 two days, they'll actually have specific questions
24 that they're looking for comment on from the
25 stakeholders here and then if you would rather submit

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1 your comments through the web, you can do that as
2 well. Our deadline is July 7th and that's necessary
3 for us to be able to capture these comments and
4 incorporate them as necessary to meet our deliverable
5 in September.

6 And then of course, there's a feedback
7 from for this meeting. And I will be available over
8 the next two days if anyone wants to chat with me and
9 understand at a higher level what we're doing and why
10 we're doing it.

11 I don't know if that answers your
12 question, Rod, but --

13 MR. MCCULLUM: Do you have sufficient
14 funding right now, obligated for 2012 to continue the
15 effort at the same pace you're continuing now?

16 MR. DAVIS: We have funding in '12. It's
17 not what I would need, necessarily, and that's why I
18 said that the 2015 to 2017 time frame.

19 Originally, as you remember, we were on a
20 2015 time frame. That had been our public position.
21 Given the resource constraints, I personally just
22 don't see how I can do it within that time frame and I
23 think it will slip somewhat, so without talking
24 specific numbers, it's --

25 MR. MCCULLUM: But the effort will be able

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1 to continue throughout 2012?

2 MR. DAVIS: There will be some effort in
3 reprocessing in 2012, yes.

4 MR. CAMERON: Thanks, Jack. Are there
5 other high-level questions for Jack?

6 Go ahead, Mary. We've got to get you on
7 the transcript here.

8 MS. OLSEN: Was it just a typo that you
9 said EIS instead of PEIS? Programmatic?

10 (Off-mic comments.)

11 MR. CAMERON: Here, Jack. Let me get you
12 a microphone. Yes, you might as well go back to the
13 podium.

14 MS. OLSEN: What I'm trying to clarify is
15 Programmatic EIS versus EIS. Were you just doing
16 shorthand or did you forget?

17 MR. DAVIS: I'm not understanding what
18 you're saying.

19 MS. OLSEN: There's a requirement that a
20 Programmatic EIS be done for this particular activity.

21 MR. DAVIS: Right. Again, I was talking
22 from a technical perspective, right. When I mentioned
23 the Environmental Technical Report which feeds into an
24 EIS. We were doing preliminary work that would
25 support that effort.

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1 We don't have any design information,
2 right? Even though we have Letters of Intent.

3 MS. OLSEN: On the rulemaking?

4 MR. DAVIS: Huh?

5 MS. OLSEN: On the rulemaking itself.
6 Programmatic EIS? You don't know this history? I'll
7 provide it to you.

8 MR. CAMERON: Let me just jump in here
9 before Jack finishes. We do have a waste management
10 environmental presentation coming up and I'm going to
11 put this EIS issue in the parking lot for discussion
12 then. And as Mary said, she's talking about the EIS
13 which would start out with a draft EIS for the
14 rulemaking.

15 Jack, do you have anything else you want
16 to add?

17 MR. DAVIS: The only thing I was
18 clarifying was that how the process feeds from an
19 Environmental Technical Report into an EIS, that's all
20 I was trying to -- and I guess I'm missing what you
21 thought I said in that.

22 MS. OLSEN: I'm referring to a court
23 decision, historically, that would mandate the Agency
24 to do a Programmatic EIS on this rulemaking. And so
25 when you put EIS there, I didn't know if you were just

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1 having a typo moment or if you have forgotten this
2 history. So we'll provide it to you. We'll be glad
3 to do that.

4 MR. CAMERON: Okay, we'll talk about the
5 EIS and I like that. I've never heard the typo
6 moment, you know, and it can refer to many of the
7 moments that I have, typo moments.

8 Other questions for Jack? Thank you very
9 much.

10 And we're going to jump right into our
11 first agenda item and this is on the licensing
12 framework and we have Dr. Wendy Reed again from NMSS
13 who's going to do the presentation, but we also have
14 the young Alex Murray here at the table also from NMSS
15 that's going to give her support in the discussion.

16 So this is Wendy Reed. And while you're
17 fixing that up, let me just make one small addition.
18 When I was introducing people who were involved --
19 you're okay, I hope. When I was introducing people
20 who were here on the MOX issue from NRC staff and from
21 State of South Carolina, I should have also mentioned
22 that Mary Olsen and her organization, Nuclear
23 Information and Resource Service, is a party to the
24 MOX licensing proceeding. Thank you.

25 Wendy?

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1 DR. REED: Thank you. Thank you, Chip.
2 Good morning, ladies and gentlemen. Today, I'm here
3 to present to you NRC's staff preliminary position on
4 how we think that a regulatory framework for licensing
5 commercial nuclear fuel reprocessing facility should
6 be developed and also to discuss with you some
7 definitions that could be included in a new rule
8 regarding those facilities.

9 I'm going to begin by giving you a brief
10 overview of the gaps that were identified by staff and
11 staff's proposed method of resolving these gaps. I'm
12 going to provide you a brief summary of the
13 stakeholder input that we've received regarding these
14 issues at public meetings such as this one and via
15 written communication. And then I'll go on and
16 briefly discuss the specific feedback that we're
17 looking today to receive from stakeholders regarding
18 some of the issues with Gap 1 and Gap 6.

19 The specific regulatory areas identified
20 as gaps in the Code of Federal Regulations were
21 identified as issues that would need to be resolved in
22 order to license a reprocessing facility effectively
23 and efficiently, and Gaps 1 and 6, regulatory
24 framework options and definitions for reprocessing
25 related to terms respectfully at two of those gaps.

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1 And they were given the rating of a high priority gap
2 that needed to be resolved. And a full description of
3 these gaps are found in the Commission paper that is
4 referenced here.

5 With regards to Gap 1, a fuel reprocessing
6 facility would currently fall into the definition of a
7 Production Facility as defined in the Atomic Energy
8 Act of 1954, as amended. And consequently a
9 reprocessing plant would be licensed currently under
10 CFR Part 50.

11 Part 50 has evolved over time to be mostly
12 applicable to nuclear power plants and consequently it
13 would require -- a reprocessing facility would require
14 many exemptions from current requirements that are not
15 applicable and it could potentially result in a long
16 and protracted licensing process which is at odds with
17 NRC's goal of having an efficient and effective
18 regulatory process.

19 Part 70, 10 CFR Part 70 which is currently
20 used to license existing fuel cycle facilities was
21 also considered by staff to be not adequate for
22 licensing reprocessing facility, because the staff
23 believes that it doesn't adequately address the
24 potentially hazardous materials, the varied and larger
25 source term, the higher dose impacts from these

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1 radioactive materials and the higher acute dose
2 effects.

3 With regard to definitions, staff found
4 that even though there are many references to the term
5 reprocessing in the regulation, there is no formal
6 definition provided from the term reprocessing. And
7 also there needs the consideration of the term
8 recycling also. Clear definitions are very important
9 so that they can help establish the meaning of terms
10 used in the rule.

11 With regards to closing the gap, staff is
12 proposing that the most appropriate course of action
13 would be to develop a new part in the Code of Federal
14 Regulations. Right now we just refer to it as 10 CFR
15 Part 7x. And what staff's method of doing this is to
16 look at the entire suite of regulations in the Code of
17 Federal Regulations and to identify and incorporate
18 the applicable ones into the new Part 7x and obviously
19 tailor any regulations, if necessary, for the
20 attributes of reprocessing and recycling, so
21 reprocessing. We're just sticking to the term
22 reprocessing.

23 So with regards to Gap 6 with the
24 definitions is staff wants to incorporate existing
25 definitions where applicable into a proposed new rule.

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1 And we also recognize that it would be very important
2 to develop new definitions and to clarify existing
3 definitions where needed, for example, the terms
4 reprocessing and recycling. And that is one of the
5 stakeholder feedback items we would like to receive
6 today is what we should consider in these specific
7 definitions.

8 We've also talked about other reprocessing
9 related to definition such as vitrification, maybe a
10 clarification of high-level waste and also waste
11 incidental to reprocessing which is a term that is
12 used more in terms of Department of Energy waste and
13 that's going to be discussed in more detail by my
14 colleague, Dr. Brittain Hill, in the next segment of
15 this meeting.

16 With regards to previous stakeholder input
17 for Gap 1, at previous public meetings, stakeholders
18 showed general support for the new part in the Code of
19 Federal Regulations and in the NEI White Paper, they
20 have prescribed a similar approach to the NRC's
21 proposed approach, is that they would use a Part 7x.
22 However, it differs slightly in that in their view
23 that it should be based more on the existing Part 70
24 whereas NRC staff proposed looking at the entire Code
25 of Federal Regulations for development of a rule.

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1 There's been a lot of discussion amongst
2 all the stakeholders at previous public meetings about
3 the -- how the framework should be developed. And
4 there's been no strong opinion that NRC's alternative
5 approaches of modifying Part 50 or modifying Part 70
6 should be used.

7 So in regarding to definitions, at
8 previous public meetings, industry has shown support
9 for a definition of waste incidental to recycling and
10 actually using a wholesale replacement of the term
11 reprocessing in the Code of Federal Regulations and
12 related definitions in place of reprocessing and they
13 also provided a revised definition of high-level
14 waste.

15 With regards to other stakeholder input,
16 there hasn't been very much discussion in previous
17 public meetings on definitions that should be included
18 so we're very much looking forward today to hearing
19 people's views on the definitions that should be
20 included in a potential new rule.

21 Now while we were developing Gap 1, there
22 was sort of some regulatory areas that were identified
23 that were not previously identified in the gap
24 analysis. And various topics were identified and
25 these are found in great detail in the draft

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1 regulatory basis. But here are the topics that we're
2 looking for feedback today are: emergency planning,
3 fire protection, and seismic regulations and
4 requirements.

5 In addition, staff would like some
6 feedback on Appendix F to 10 CFR Part 50 which is an
7 appendix developed to codify the Commission's views on
8 policy rather on waste management at reprocessing
9 facilities. And with regards to the definition, Gap
10 6, what we'd like some feedback on is what should be
11 included in definitions of reprocessing and recycling
12 and other differences, are they interchangeable? If
13 there are differences, how should those differences be
14 expressed in a new regulation for reprocessing
15 facilities?

16 I did an additional slide and that just
17 goes to some of the other considerations that we've
18 identified in Gap 1. Thank you.

19 MR. CAMERON: Thank you, Wendy and there
20 is a number of issues here, two major ones in terms of
21 does the NRC develop a new part for this rulemaking,
22 the distinction between second issue distinction
23 between reprocessing and recycling, the definition
24 there.

25 Why don't we start by talking about the

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1 development of the new part versus use of existing or
2 changing existing regulations.

3 Rod, do you want to start off on that?

4 MR. MCCULLUM: Sure. I think we're very
5 pleased to see that NRC is proposing a new part. We
6 think that's appropriate. A reprocessing facility is
7 clearly different from the types of facilities
8 governed under Part 50 and Part 70. It's not a
9 reactor. You don't have a sustained nuclear fission
10 reaction. By the time fuel reaches a reprocessing
11 facility it's already cool enough that it doesn't
12 require the active cooling that a reactor does
13 immediately after shutdown. You don't have the energy
14 sources that can result in the releases.

15 That being said, it's not a fuel
16 reprocessing facility. There are fission products.
17 There are actinides that are not present in Part 70
18 facilities, so while you don't have the energy to
19 create the kind of release that you could get from a
20 reactor, you do have an inventory that must be
21 effectively managed. You do have a criticality
22 concern to make sure you don't get an unintentional
23 fission reaction. So it is something that needs a
24 regulatory approach somewhere in between the way Part
25 70 facilities are currently regulated and Part 50

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1 facilities are regulated.

2 I think what we're reading in this
3 document indicates that that is the direction NRC is
4 going in and we encourage you to continue going in
5 that direction.

6 MR. CAMERON: Okay, thanks, Rod. Does
7 anybody around the table have any strong feelings the
8 opposite way in terms of this process issue of the
9 development of the new part for these reprocessing
10 regulations?

11 Mary?

12 MS. OLSEN: It's extremely difficult to
13 like any regulation that has to do with licensing
14 nuclear facilities, but we defended Part 50. We
15 defended it every single step of the way. And it took
16 Congress to override the will of the people and so
17 this whole thing about Part 52 and one-step licensing,
18 well, oh boy, we're just going to go off and start all
19 over. Well, there's some elements of Part 50 that we
20 will continue to defend. And one of them has to do
21 with the fact that the local impacted community has
22 rights that should be considered not only in terms of
23 construction, but also in terms of operation, so
24 there's elements of Part 50 that we'll continue to
25 defend.

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1 MR. CAMERON: Okay, and that's a good
2 point and we're going to throughout the next two days,
3 when we get to some of the specific topical issues,
4 talk about those pieces of Part 50 that should be
5 incorporated into this new regulation. So as I
6 understand it, it's going to be a new part, but you're
7 going to be considering, and Wendy, correct me on
8 this, you're going to be considering and we're going
9 to be talking about what aspects of Part 50 should be
10 incorporated in the new part?

11 DR. REED: That is correct.

12 MR. CAMERON: Okay, Rod?

13 MR. MCCULLUM: Yes, I just also want to
14 agree there are aspects of Part 50 that should be
15 retained and specifically on the issue that Mary
16 mentioned, that the one step versus two step
17 licensing. It is industry's proposal that an
18 applicant have the option to go either way. Once
19 technology is more established like a reactor, Part 52
20 may make more sense.

21 There may be applicants for the initial
22 recycling facilities that would want to pursue a two-
23 step process and would want to test that stakeholder
24 piece in that forum earlier on. So we agree that --
25 and we would like to see the option to go either way

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1 provided.

2 MR. CAMERON: Okay, and I need to make a
3 slight apology here is that the one part, two part
4 issue is going to be addressed, I think, in not
5 Britt's perhaps, but John's presentation tomorrow.
6 And maybe it should have been here, but if we can just
7 hold that discussion, or if we finish early with this,
8 we may be able to go there.

9 MR. MCCULLUM: No, holding is fine, but
10 since it was brought up, I wanted to go on record
11 agreeing.

12 MR. CAMERON: Okay, thank you. Thank you,
13 both. How about the distinction between recycling and
14 reprocessing and Susan mentioned something previously
15 about well, let's call it reprocessing until we have
16 -- know it's something else, basically.

17 Let me go to Tom Clements first on that
18 issue and then Mary and Susan and whomever.

19 Tom?

20 MR. CLEMENTS: Thank you. First, let me
21 raise another term and then I'll talk about recycling.

22 In the Nuclear Waste Policy Act, the term spent
23 nuclear fuel is defined and in DOE regulations the
24 term spent nuclear fuel is consistently used. There
25 has been a move lately, and I've asked for

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1 clarification from DOE where it's cited in the
2 regulations and have not received a response after
3 months of trying, where the term "used nuclear fuel"
4 is used.

5 So I would first recommend that the NRC
6 stick with the legally-defined terms under law which
7 is spent nuclear fuel, unless there is some kind of
8 congressional action or otherwise to change the law to
9 redefine used nuclear fuel. It doesn't exist. So I'm
10 quite familiar here around the Savannah River site the
11 term used nuclear fuel is being used, but as far as I
12 can determine, there is no regulatory basis for that.

13 Second, I'm aware of the definition that
14 the NRC -- the NEI put forward in its White Paper
15 about recycling. I'm sorry, I'm fumbling for that
16 here. And I think that the definition put forward was
17 inadequate. As we all know, there are a host of waste
18 streams that come from reprocessing including so-
19 called low-level waste, a large volume of greater than
20 Class C waste, high-level nuclear waste, fission gas.

21 To my knowledge and the reprocessed uranium which may
22 be another definition you may want to look at, RepU.

23 All these materials are not recycled. And
24 I would ask the question if NEI or AREVA or someone
25 else would present, what percentage of materials and

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1 I'm talking about all of the radioactive materials
2 that come from reprocessing at the UP2 facility which
3 was dedicated to reprocessing of foreign spent fuel
4 before every country pulled out except -- now it's
5 only France is left reprocessing at La Hague, because
6 every other country has stopped sending spent fuel.

7 What are the waste streams and how much of
8 that material is reprocessed, recycled, or reused?
9 How much of the uranium, including reprocessed uranium
10 is taken to Russia for further processing or the
11 majority of it actually for dumping, how much of the
12 material from THORP has been recycled, including
13 plutonium and reprocessed uranium? And I think we all
14 know the answer to that is zero, zero grams of both of
15 those materials.

16 From the Mayak facility, the RT1 facility,
17 how much of the material -- what are the waste streams
18 including plutonium and reprocessed uranium, how much
19 of that material has been recycled? And as far as I
20 know, the answer is zero.

21 And I would add, just for your background,
22 I have been outside the reprocessing plants at La
23 Hague for -- not Rokkasho, but Tokaimura. I have
24 visited the RT2 plant, the crumbling ruin at
25 Krasnoyarsk. And I've been inside the West Valley

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1 reprocessing plant. So I've been following the issues
2 quite closely.

3 So I think the term recycling is quite
4 misleading, particularly when AREVA has only reused
5 some of the plutonium and a small fraction of the
6 reprocessed uranium. So I urge extreme caution in the
7 definition of recycling which I do not believe exists
8 and I believe that the NEI definition put forward was
9 incomplete and inaccurate. Thank you.

10 MR. CAMERON: Okay. Thanks, Tom. You
11 raised a number of issues and the people around the
12 table may not be able to answer all of the specific
13 examples, but maybe they can address some of them at
14 this point. In terms of the issues that the NEI
15 definition is inadequate and perhaps misleading, but
16 before we go to that issue, Jim, do you have anything
17 to say on the used nuclear fuel versus spent nuclear
18 fuel that Tom raised?

19 MR. BRESEE: Yes. I do apologize on
20 behalf of those who have been asked for information
21 and have not responded. I don't know the origin of
22 the problem. But used versus spent is simply a
23 convenience within our own organization. We assume at
24 some point in the future the United States will make a
25 decision on how to proceed with the handling of the

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1 fuel which has been used in a nuclear reactor. If the
2 decision is made to reprocess or recycle or there are
3 so many other terms that might be used, for example,
4 I'll be at a meeting with a number of other countries
5 in Vienna next week to discuss partitioning which is
6 another term applied to the issue of processing fuel.

7 Back to the issue of used versus spent.
8 If the decision is made to recycle or reprocess, that
9 would be for the purpose of using some portion of the
10 fuel as new fuel. If the decision is that it will not
11 be recycled or reprocessed or partitioned, then it
12 would be disposed of in -- probably in a deep,
13 geologic repository.

14 What we've done internally for the purpose
15 of keeping our terminology straight is saying that
16 used fuel has some potential value in the future and
17 spent fuel does not. It's a convenience for
18 discussion purposes only. It has nothing to do with
19 regulatory definitions, with congressional bills of
20 the future, modifications to nuclear regulatory
21 activities.

22 So I apologize that we haven't responded
23 and if Tom, if you will provide me a copy of the
24 particular letter in which you've requested the
25 definition, I will see to it that it comes back to you

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1 in print.

2 MR. CAMERON: Okay, thank you very much,
3 Jim.

4 MR. CLEMENTS: Tom Clements. Could I ask
5 if the NRC would mention what definition they use, if
6 it's a matter of convenience or it's defined under
7 law?

8 MR. CAMERON: Okay, we'll see if the NRC
9 has anything to add on that in a minute. Let's go to
10 the caution that Tom gave to the NRC staff about using
11 the NEI definition. Let's continue talking about that
12 and hear from Rod and Sven. And then we'll go to Mary
13 Olsen and then perhaps we'll be able to -- do you want
14 to talk about this used spent right now?

15 A very simple answer. And please
16 introduce yourself.

17 DR. HILL: I'm Brittain Hill. I'm with
18 the Office of Nuclear Material Safety and Safeguards
19 at the NRC and there's a very simple answer to Tom's
20 question. We're continuing to use the definition of
21 spent nuclear fuel as established by the Atomic Energy
22 Act which is through the Nuclear Waste Policy Act of
23 1982. That's the only term that we're using
24 consistent with existing statutory language.

25 MR. CAMERON: Okay, and as Jim pointed

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1 out, the use in DOE is purely for a matter of DOE
2 convenience and doesn't have any connection to any
3 regulatory framework. So I think that's particularly
4 clear and thank you Britt and let's go to Rod and then
5 Sven.

6 Rod?

7 MR. MCCULLUM: Yes, there's a lot of
8 questions there and I definitely want to defer to Sven
9 on some of the details. I mean first of all take some
10 ownership of the used spent thing. That term did
11 originate in industry. We appreciate the Department
12 of Energy and others using that term.

13 We did a lot of communications, research,
14 focus groups, determining that used fuel was a more
15 understandable explanation of what it is, particularly
16 as Jim, I think, very eloquently put it. We all felt
17 spent at the end of a day and when we feel spent, we
18 don't feel like doing anything else. And used nuclear
19 fuel, there's more energy left in the fuel than has
20 been derived from it in its initial use in a reactor,
21 significantly more, depending on the what process.

22 As far as the definition of recycling
23 versus reprocessing goes, our intent there and we
24 recognize the legal definition of spent fuel is what
25 it is and Britt's very correct. When I speak publicly

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1 I always say used fuel and my communications people
2 demand that I do, but then when I write a comment
3 letter to NRC, I have to write spent fuel because I'm
4 responding to the legal regulatory term.

5 But recycling versus reprocessing is a
6 little bit more complicated. Again, we think
7 recycling does convey what we're doing in a similar
8 manner that used fuel does. I'll get to that in a
9 second. But really our intent with that definition
10 and if that intent can be captured while still
11 conforming to the legal terms that are out there and I
12 will point out that the legal definitions of
13 reprocessing occurred decades ago. And the
14 technologies we may be regulating will occur decades
15 in the future.

16 To say that what we understood as
17 reprocessing in the '70s and '80s is what we will be
18 regulating in the future, we need to be comprehensive
19 enough in our definition so that we can cover the
20 range of technologies that are currently being
21 considered. I'll point to this -- in terms of is it
22 really recycling? Is that a misrepresentative? This
23 is a clear, Diet Pepsi container that I finished now.

24 It may have been a red dashboard in a car in its
25 previous life. It might be part of a blue tennis shoe

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1 in its future life. And in both cases, it would have
2 a slightly different chemical make up than it does
3 now.

4 In recycling, there are always waste
5 streams. Not every chemical that goes into one
6 plastic product is in the next plastic product that it
7 gets recycled into. And I'm not an expert in how
8 recycling centers handle their waste streams in terms
9 of bottled recycling, plastic recycling, newspaper
10 recycling. Obviously, you don't get the newsprint on
11 the next newspaper you read, but there is no such
12 thing as a process that perfectly vaporizes everything
13 that's hazardous in something you recycle.

14 So I think it's analogous. Again, we have
15 to respect legal definitions. We have to make sure
16 that what definitions we use go forward encompass a
17 technology-neutral framework.

18 I know, and again, this is why our foreign
19 owner is here at the table. They have a lot of
20 experience in France reducing the waste streams.
21 They've learned a lot in the years they've done that.

22 I don't know if it's quite the same as the Pepsi
23 bottle example yet, but I would like Sven to speak to
24 the fact that we do have a good handle on the waste
25 streams and can, in fact, as these technologies

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1 continue to advance and we want a definition that
2 allows them to advance, get more and more energy out
3 of it and less and less waste streams.

4 MR. CAMERON: Before Sven goes and this is
5 also something for him to think about, you talked
6 about the future in technology development and why the
7 NEI definition is the way it is.

8 And you've heard Tom's concerns. Is there
9 anything that could be -- is there any way to address
10 Tom's concerns in the definition for the NRC to also
11 consider? That's a question. You may not have an
12 answer now and I just want to comment that you
13 referred to being spent at the end of the day. Well,
14 I hope that after the end of the day today that you
15 don't feel that you were used.

16 (Laughter.)

17 You know --

18 MR. MCCULLUM: Well, I do, I'll be ready
19 to be used again tomorrow.

20 (Laughter.)

21 MR. CAMERON: There are a number of ways
22 here, guys.

23 (Laughter.)

24 MR. MCCULLUM: But I think the answer --
25 and I will believe the answer to your question is yes.

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1 I think whether we ultimately end up calling it
2 recycling or calling in reprocessing, we can agree on
3 a definition that is forward-looking, encompasses the
4 range of technologies, not just what we know the
5 French do that is called reprocessing, but what
6 General Electric, Westinghouse might do that they
7 would prefer to refer to it as recycling. Just don't
8 get ourselves too tied to the specific meaning of a
9 legal definition that was invented 20 years and
10 several technology iterations ago.

11 MR. CAMERON: Okay. Thanks, Rod. And
12 we're going to go to Sven and I think Alex and John
13 have something on this issue. But after Sven, I just
14 want to jump over to Mary to make sure that she
15 doesn't have to wait too long to make her point.

16 But Sven, go ahead.

17 MR. BADER: I'm not sure if this is the
18 appropriate time, Chip, to go into the waste. I know
19 this is the specific section related to waste. But I
20 can definitely try to address some of Tom's comments.

21 In general, we do have presentations out
22 in the public domain that discuss the waste streams
23 from a recycling facility. I know you've commented on
24 them in the past. So they're out there. The bottom
25 line is 96 percent of the fuel assembly is recyclable,

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1 because 95 percent of it is uranium, 1 percent is
2 plutonium, the other 4 percent is fission products.
3 Fission products go into a vitrified waste stream.
4 The plutonium gets recycled into a MOX fuel assembly
5 or into a fast reactor fuel assembly. So we're
6 talking transitions here.

7 And also the 96 percent uranium is right
8 now is considered a resource. We do re-enrich some of
9 that. I think right now, I don't remember the exact
10 numbers and I'll get those for you, if you'd like to
11 see them. We have a brand-new facility that just came
12 on line, George Besse II in France where that material
13 will be recycled through and creating uranium UO2 fuel
14 assemblies.

15 There is quite an extensive amount of that
16 material stored right now. France considers that a
17 resource. It is not considered a waste. And that's
18 something I think we're all interested in in how we're
19 going to define these things. Do we consider
20 something a waste form now versus something that might
21 be a resource in the future?

22 I think it's something that's difficult to
23 establish in the United States and with respect to the
24 low-level waste streams there's another fundamental
25 difference in France. In France, we minimize the

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1 volume of low-level waste produced. When we come to
2 the States and say here's what our volume is, everyone
3 starts saying it's a lot of greater than Class C. A
4 lot of it is the reason we have minimized the total
5 volume.

6 If we were to take a different approach
7 and try to maximize the Class A waste, the volume goes
8 up, clearly. So it's really a different effort, you
9 know, how things are done in Europe, which are
10 consistent with the IEA regulations versus what we
11 have right now in the United States and a framework
12 such as 10 CFR 61. So it's difficult for us to come
13 over here and tell you here's the equivalent waste
14 stream that we have in La Hague that's going to get
15 licensed here in the United States. It's because the
16 licensing regulations are completely different.

17 MR. CAMERON: Sven, thank you for the
18 reminder is that when we get to Britt's waste
19 presentation that maybe we'll talk more about
20 specifics on this in regard to some of the questions
21 that Tom has.

22 I'm running us until about a quarter to
23 take a break. We're a little bit behind, but we have
24 lots of flexibility. We have an hour and a half for
25 lunch, so we may cut that back. We'll see where we

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1 are at 12. But let's hear from Mary and then we'll
2 jump over to Alex and John and then come back to
3 Susan.

4 Mary.

5 MS. OLSEN: You know, Chip, I have to say
6 these stakeholder moments are great because I'm
7 agreeing with Sven. I think that the industry should
8 go with total honesty and scrap reprocessing, scrap
9 recycling and call it plutonium recovery. Get it out
10 on the table. We are talking about a plutonium
11 economy. Get it honest. Get it on the table. Get
12 what we are talking about.

13 Now this is supposedly also a value-based
14 discussion because we're talking about mandates and
15 you know, tricky things like inadvertent criticality
16 and you know, West Valley is a huge mess. It's going
17 to be \$10 billion to clean up that baby and it's only
18 been admitted that there was one underground spill and
19 one blowout of a stack, \$10 billion. Huge mess at
20 West Valley. Now half of it is from the so-called
21 low-level waste that got its foot in the door because
22 of the reprocessing, but it's still \$5 billion for two
23 incidents. I mean it's an enormous responsibility.

24 So in our value, we talk about isolation
25 of radioactivity from the environment for its

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1 hazardous life. We talk about zero release. We talk
2 about protecting people's bodies. And you know,
3 that's where we really need to go with this
4 discussion. So if we're talking about plutonium
5 recovery, I have to say that I was going to do this
6 first today, but I got all off on that foreign
7 ownership issue which is very important to us. We do
8 believe in laws and we do believe that if you look at
9 our current laws, this whole discussion is kind of
10 like cognitively weird that we're even in this room
11 having this discussion because all of the waste that's
12 generated in the United States is subject to the
13 standard contract.

14 The standard contract is for disposal,
15 right? Well, okay, if you don't dispose of it, are we
16 actually talking about nuclear utilities? Sending
17 their own fuel for resource recovery? Because if they
18 want DOE to take it under the standard contract, it's
19 no longer civilian waste is it? It's DOE waste. And
20 I've had little toe-to-toes with NNSA about plutonium.

21 I'm an intervenor in the MNFF and they will tell me
22 straight up that all the plutonium is plutonium is
23 plutonium and all they're committed to is in the MNFF,
24 you know, dual-track MOX Surplus Plutonium Disposition
25 program is a certain number of tons. They won't tell

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1 me that any given shipment is for MOX fuel or any
2 given shipment is for future new pits or any shipment
3 might be for that canceled program called
4 Immobilization.

5 No, it's all just plutonium to them. So
6 if this is all going into the DOE pile, I don't know
7 what NRC is doing licensing this thing.

8 Now tell me that the industry is going to
9 start sending their fuel for resource recovery, I'm
10 going to just end up with one more reiteration of
11 Tom's point, one percent. Are you going to call that
12 recycling? One percent. Now he says 96 percent is
13 because he includes the uranium being reused. That
14 was tried in the United States. And just like West
15 Valley is a huge mess. Look at the stories on
16 Paducah. Look at Joby Warrick's series in the 1990s
17 in The Washington Post. Look at the number of people
18 who got access cancers over and above what they would
19 have had if they had only been processing enrichment
20 of uranium.

21 Instead, they had fission products going
22 through there. They had plutonium going through
23 there. That's what we have in the weapons now, in the
24 DU weapons all over the battlefields. They're
25 wondering where the fission product is coming from.

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1 Well, it's because they sent some of that uranium back
2 through and that DU is laced with fission products and
3 plutonium.

4 So let's get really brass tacks in this
5 room and call it resource recovery, call it plutonium
6 separation, call it plutonium economy which is where
7 we're going with this if we go there. And really look
8 long and hard at the security issues. I'm not going
9 to go there because I don't want to sign all those
10 contracts with you all.

11 Sign them with each other and really look
12 at this, because this is not recycling. This is a
13 plutonium economy.

14 MR. CAMERON: Okay, thank you, Mary. I'm
15 going to give Sven a quick opportunity clarify the
16 agreement with Mary. Go ahead.

17 MR. BADER: Just real quick about
18 plutonium recycling. If you burn a core greater than
19 30 percent MOX, you're actually reducing the total
20 plutonium in the inventory. So this is actually a
21 means of removing Pu from the cycle.

22 MR. CAMERON: Okay. And --

23 MR. CLEMENTS: Could I ask Sven a quick
24 question, follow up?

25 MR. CAMERON: Sure.

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1 MR. CLEMENTS: What percent of the
2 irradiated MOX fuel is reprocessed?

3 MR. BADER: You're talking about MOX
4 itself, okay? It has been done. I don't know what
5 fraction has been done. I know it's a small fraction,
6 obviously. The one thing about the United States is
7 there's tons of spent fuel that's available so we
8 wouldn't really have to go towards spent MOX recycle.

9 But La Hague has done recycling of spent
10 MOX fuel. It's on the order of 100 metric tons, maybe
11 200 metric tons. I can get you the numbers
12 specifically. So it is a process that we can perform.

13 But then again, that's really more for uranium
14 recovery process.

15 MR. CLEMENTS: But just to be clear, the
16 recycling or reprocessing as far as the spent MOX
17 goes, the so-called recycling of the plutonium, it
18 stops after one cycle.

19 MR. BADER: I'm not quite sure I follow
20 that question. It stops after one cycle.

21 MR. CLEMENTS: The spent MOX is stored.
22 There was a demonstration that the MOX could be
23 reprocessed. There were problems with that. It's
24 simply stored, so any definition considering recycling
25 as a definition, you have to look how far that goes.

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1 The spent MOX, as of now, it has -- it's been
2 demonstrated, but not a matter of commercial basis,
3 that it's reprocessed and separated materials are
4 stored or reused.

5 MR. BADER: It can be reprocessed. It's
6 not because there's so much available spent fuel that
7 we don't need to process MOX fuel. However, once the
8 next generation reactors move along and there's an
9 opportunity to produce the fast reactor fuel from that
10 recycled MOX.

11 MR. CAMERON: Okay. And this may be grist
12 for the mill for a hallway conversation, too, to
13 develop further information on this.

14 What I'm going to suggest is we go to Alex
15 and John and Susan. And then we'll go back over to
16 Rod and then let's take a break, unless someone says
17 something really provocative and gets us going again.

18 (Laughter.)

19 I'm sorry I have to go to Alex on that
20 note.

21 MR. MURRAY: Gee, Chip, come on.

22 MR. CAMERON: Go ahead, Alex. I'm sorry.

23 MR. MURRAY: I'm just a young dude. One
24 of the reasons that we're having this meeting is to
25 try and solicit some feedback here and we seem to be

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1 talking a little bit across each other, recycle, you
2 don't want recycling; one percent, no, it's more than
3 that.

4 Can I just ask the assembled minds here,
5 Mary, Susan, Tom, Sven, Rod, anyone else who wants to
6 chip in, how would you define those terms? Would you
7 define recycling as recycling just a little bit, just
8 the plutonium? Is that plutonium recycled, is it 50
9 percent? Is it all reprocessed uranium? Is there
10 some sort of purity or cleanliness level associated
11 with it, you know, i.e., no fission products or
12 something like that which was what happened with
13 Paducah.

14 Please, can we rather than just talking
15 across each other, give some thought as to what these
16 definitions might entail. The staff at the NRC,
17 safety is our job. And we want to make sure that the
18 appropriate definitions are in this proposed new rule
19 and we have some feedback from the minds at this table
20 as to what those definitions might include, might
21 incorporate.

22 So I throw it open, what would the people
23 here consider to be recycling? Is it anything from
24 spent nuclear fuel? Is it again, the -- I'll say
25 useful components, whatever those might be? What are

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1 useful components? What definitions should we put in
2 this proposed new rule.

3 So please, chip in, everybody.

4 MR. CAMERON: And let's -- we may hear
5 something from John or Susan or Rod on that particular
6 issue, but maybe that's the issue we should start with
7 when we come back from the break. And have a good
8 discussion on that.

9 Let's hear from John and Susan and Rod,
10 then we'll take a break.

11 Thank you, Alex.

12 MR. GREEVES: I guess I would like to
13 raise this to a little bit higher plane. We started
14 talking about definitions and having written and
15 worked on a number of regulations, it's just a part of
16 the regulation. And the NEI White Paper actually
17 provided a draft definition for fuel recycling
18 facility. I almost wish we would put it up on the
19 screen. Somehow it's been identified as inaccurate,
20 incomplete, and misleading.

21 I'm reading it here now and I'm having
22 trouble understanding how somebody could conclude that
23 it's inaccurate and misleading. Incomplete, anyhow --
24 the regulator is going to have to put a set of
25 definitions in the rule and it's not going to capture

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1 all of the things you've just been talking about.
2 Those, to me, are in a technical basis document. And
3 so some point, either the NRC or other stakeholders,
4 if you don't like the definition that the NEI White
5 Paper presents, give us something lese to talk about.

6 I think it's unfair to call it inaccurate and
7 misleading. If you have something better, please
8 bring it forward.

9 And a lot of the content we've just gone
10 through, to me, is content for a technical basis
11 document, so that once the rule is implemented, you
12 can look back and see what the people meant when they
13 put this rule in place. But the definition is not
14 going to contain all the things we've just talked
15 about. Look at any other rulemaking. I'm familiar
16 with -- it doesn't get to that level of detail. What
17 it needs to do is introduce the concept that if you're
18 going to recycle, you need a regulation to allow that
19 to proceed and part of that recycle is a processing
20 activity. So simple statement, higher plane. I think
21 we need a definition of recycle and I enjoy hearing
22 what other people think that should be. If not, what
23 is in the NEI White Paper. Thank you for your
24 attention.

25 MR. CAMERON: Okay, John, and we'll be

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1 coming back to you with that threshold question that
2 Alex raised to try to get to that definition, but
3 you're also putting another thing on the table for us,
4 which is a sort of a regulatory structure issue about
5 what's appropriate for the rule, versus what's
6 appropriate for what you called a technical basis
7 document which may be an NRC guidance document. Okay?

8 But thank you for doing that and let's go to Susan
9 and Rod.

10 Susan?

11 MS. CORBETT: I would just like to say as
12 a representative of the conservation community, we
13 think that calling reprocessing/recycling is
14 greenwashing it at its worst. I can see why they want
15 to do this because in South Carolina, we have such a
16 problem with what went on at Savannah River site and I
17 know considering the mess that they've made around the
18 world at reprocessing sites, I can see why they don't
19 want to use the word reprocessing any more because it
20 has a negative connotation in a lot of places,
21 especially in this country and in places in other
22 countries as well.

23 So they need to rename it in order to sell
24 it in the future. And that's what they're trying to
25 do. They're trying to equate this as some sort of

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1 fuzzy green warm clean thing activity and we know
2 that's not what it is. It's a marketing tool that
3 they are trying to employ, they're using to sell this.

4 We got a good example of that this past year. I
5 think it was Senate bill 232, what was it, Tom? They
6 tried to sell this in the South Carolina Senate and of
7 course, you get these legislators who don't really do
8 their homework. So they attach this oh, recycling
9 spent -- yeah, it's recycling. It's got to be green.

10 It conservation community is going to love it. We're
11 going to vote for it.

12 No. That's what they're trying to do, use
13 it as a marketing selling tool and we oppose it. We
14 don't want it to be called recycling. We want it to
15 be called what it is, reprocessing. We've always
16 known or if we want to call it plutonium recovery,
17 that's fine. But we oppose the use of the term
18 recycling.

19 MR. CAMERON: So Susan, you're bringing up
20 this perception issue. Are you suggesting that no
21 matter what would be in the definition, what would be
22 in the definition may be acceptable, but the term
23 that's used, in other words, what's being defined,
24 that might be offensive to people? If you understand
25 what -- where I'm going. You're talking about the

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1 perception, call it greenwashing, okay. All right.

2 Rod, let's finish up with you and take on
3 whatever you want to take on at this point.

4 MR. MCCULLUM: I'll try to stay on a high
5 plane and say absolutely nothing provocative.

6 (Laughter.)

7 I think this entire discussion is
8 emblematic of why we need a technology-neutral
9 definition. I hope -- I think this has been good
10 input. In the interest of full disclosure and total
11 honesty, yes, in recycling, you do recover plutonium.

12 But the reason you recover is because you intend to
13 destroy it. When you turn MOX fuel or whatever fuel
14 you burn in your next reactor, you split the plutonium
15 in half and as Sven mentioned, you end up with less
16 plutonium at the end of the day.

17 While we don't want to be accused of
18 greenwashing this and misrepresenting it, so if
19 recycling and reprocessing is an outdated term, maybe
20 there's a need to come up with a new word. You know,
21 we do need to recognize that there is a substantial
22 environmental benefit to do this. You are taking
23 plutonium out of the environment when you do this.
24 You're also potentially with some technologies, taking
25 other things.

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1 Americium is one of the things that is the
2 most challenging radionuclides in disposal. If you
3 reprocess the fuel at a certain time after it's been
4 initially burned in a reactor, you can actually
5 shorten or cut back on the amount of americium that
6 builds up under time in the used or spent fuel.

7 Some advanced processes may, in fact, burn
8 actinides such as americium and neptunium and with all
9 the fission products, you're taking these fission
10 products, some of which are gases that are entrained
11 inside the cladding of the fuel and you're putting
12 them in solid forms so that they are less able to be
13 released into the environment. So we don't want a
14 definition that people think we're just greenwashing
15 and maybe because we recycle these bottles it has an
16 image that you just -- you can apply to nuclear.

17 We do need a definition that recognizes
18 that this is something different than what the
19 definition of reprocessing recognized years ago and
20 that does allow for the fact that the reason -- half
21 the reason we would be doing this is because there is
22 an environmental benefit. I'll concede the other half
23 is you generate more electricity which when it's 101
24 degrees today, I think we all appreciate.

25 So that's it.

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1 MR. CAMERON: Okay. Thanks, Rod. Let's
2 take a break. And I just -- before we break for
3 lunch, we're going to go out to all of you in the
4 audience. But let's take a break right now and come
5 back and address the broad issue that Alex raised and
6 keep in mind that an appropriate definition for a
7 rulemaking and maybe there needs to be a new term.
8 We've heard some suggestions on new terms, but let's
9 take a break until how about five after?

10 There's complimentary coffee by the front
11 desk. There's water right over here. And if you want
12 a snack of any type, there is a pantry, market pantry
13 where you can buy snacks. But complimentary coffee.
14 I don't know how long it will last, so we'll stampede
15 out of the room. But thank you very much for this
16 morning's discussion.

17 (Whereupon, the above-entitled public
18 meeting went off the record at 10:48 a.m., and resumed
19 at 11:12 a.m.)

20 MR. CAMERON: Let's spend some more time
21 on the definition and -- I want to give -- we're going
22 to go to Alex. I want to give Rod a chance to clarify
23 something, but sort of an interesting issue that I was
24 talking to Susan Corbett about, and the term
25 "greenwashing" -- this is just sort of a question for

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1 thought.

2 If you took the NEI definition that's in
3 there now, instead of it being the definition for
4 recycle, you used the term reprocessing, or some other
5 term, as you suggested, does that solve any problems?

6 I'm just putting that out for you. And
7 Alex is sort of our muse, so to speak, here. Well,
8 Wendy's really a better muse than Alex.

9 But we're going to go to Alex, and then --
10 let's spend time on that definition, but I don't want
11 us to miss -- what I have up here is other topical
12 areas, on Wendy's slide.

13 There's a bunch of regulations, regulatory
14 areas, such as emergency planning, fire protection,
15 seismic whatever. And it's, should these be
16 incorporated into the new part?

17 That's perhaps an easy answer. It's,
18 well, yes. But I guess the harder question is, what
19 aspects of those should be incorporated into the new
20 part on reprocessing.

21 So we want to get some definition, or some
22 discussion for the NRC staff on that. We'll run till
23 12:15. We'll spend some time with those of you in the
24 audience before we break. So let's go to Alex. And
25 we're on the definition now. And Alex, we're

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1 following up on what you said before.

2 MR. MURRAY: Okay. Thank you very much,
3 Chip. Yes. I just want to just take a few more
4 minutes and ask some of the panel members at the table
5 a little more related to the definitions.

6 Specifically, should a term like recycling
7 be used? Should a term like reprocessing be used?
8 Are they or are they not interchangeable? And what
9 types of activities, operations, materials, what have
10 you, would be encompassed by those terms, whether it
11 be reprocessing, recycling, or some combination
12 thereof?

13 Would it include things like waste
14 vitrification, or high-level waste vitrification?
15 Would it include things like, I don't know, fuel
16 fabrication? Would it include spent fuel storage?

17 So I open that up. Should it also be
18 phrased technology-neutral? I think it's in some of
19 the high-level waste regulations, or the guidance
20 documents, where reprocessing is used in terms of
21 chemical separations, or first-cycle separations.

22 I think in one place it even has first-
23 cycle solvent extraction separations of spent nuclear
24 fuel. Should it be tied to a technology?

25 So let me throw that out to the panel

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1 members, and see what feedback the NRC staff can
2 obtain, please. Thank you.

3 MR. CAMERON: Thank you, Alex. And I
4 think you all realize what Alex and Wendy are trying
5 to get on this issue is some help with how that
6 definition will be written.

7 Let's go to Mary and then Susan. Mary?

8 MS. OLSEN: Well, again, these stakeholder
9 moments. I'm going to speak against my colleague to
10 my left, because I actually -- if you haven't gotten
11 it, it's that song: "We will, we will fight you."

12 So call it recycling, please. Because
13 it's going to make a whole bunch of the old-guard
14 activists flaming mad.

15 So my focus group says "Yeah, it's good.
16 Call it recycling, because I can get people really
17 cooked up on that one."

18 Now, I just want to, for the sake of
19 record, say that while you may, in fact -- you know,
20 I'm advocating for resource recovery, plutonium
21 separation, plutonium recovery as the honest terms.

22 But I don't agree that it is recycle of
23 plutonium, because you're going to assert at the same
24 table, in the same morning, that you're going to
25 destroy this resource, that that's the purpose of

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1 recovering it, is to destroy it.

2 But I contend that that's a false
3 statement, because it's materials accounting that
4 doesn't include the DU that's in the same picture of
5 the same fuel rod of the same fission moment, and the
6 new plutonium that is engendered in that fission.

7 So when you do your full materials
8 accounting, you do not reduce plutonium in this
9 picture. So get it straight. Are you resource
10 recovery for resource destruction, and then "Oh, boy,
11 now we have this new plutonium. What are we going to
12 do about that?"

13 So this is a very complicated story. I
14 think you're trying to simplify it down, and if you
15 simplify it down to calling it recycling, you'll make
16 me very happy.

17 MR. CAMERON: And Susan?

18 MS. CORBETT: We started out by asking
19 whether the term reprocessing would solve any
20 problems. I think you should have said "Would it
21 solve or create any problems?"

22 Because I think that if you stick with
23 reprocessing, you're creating a problem for the
24 industry, who doesn't want to use that term, for the
25 reasons that I discussed earlier.

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1 And they need this new term, recycling, to
2 sell these new technologies. Because it goes in line
3 with the green economy, and the warm fuzzy feelings
4 that come with the idea of true recycling.

5 So I think you're creating a problem for
6 the industry when you make them stick to the
7 terminology of reprocessing.

8 MR. CAMERON: And by what you said before,
9 the use of the term reprocessing would be bad, so to
10 speak, because of the fact that it really has a bad
11 reputation.

12 MS. CORBETT: It has an association, in
13 our state, with what's going on with the tanks, and
14 the waste that's been created, and having a hard time
15 cleaning it up. And that's true in other places as
16 well.

17 So they're trying to distance themselves
18 from this word, because of the negative connotations
19 that it's had, here and other places.

20 MR. CAMERON: Okay. Thank you, Susan.
21 Tom, and then we'll go to John?

22 MR. CLEMENTS: Thank you, Chip. It seems
23 to me that, in response to Alex's question, that
24 reprocessing, as far as the overall process with
25 various waste streams, with the reprocessed uranium

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1 stream, with the plutonium stream, is what needs to be
2 defined.

3 Now, there may be some subset of that
4 where some of the materials are reused, but what we've
5 heard from the industry in part -- and this creates
6 another dilemma for the NRC -- is that there's
7 speculative presentation that some of these materials
8 might be able to be reused.

9 And I think that makes it much more
10 difficult to you if we're talking about some future
11 possible reuse of more of the reprocessed uranium, or
12 a second cycle of reprocessing MOX, or whatever it
13 might be.

14 But I think the easiest thing, on the
15 first cut, is to define reprocessing as what we know
16 it is, with separating some of the materials via
17 whatever process, with all the waste streams.

18 Now, I would agree that, flawed as it is,
19 that reprocessing in France, some of the plutonium is
20 used the first time for mox. Now, that creates
21 another dilemma for you, because the so-called
22 recycling ends, as it stands now, and then it becomes
23 speculative.

24 I think you need to not get into
25 speculative issues. The industry has not really

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1 presented percentages of materials recycled. What
2 happens to the waste, is it recycled?

3 So I recognize your dilemma in this, but I
4 think the easiest thing is to call the process what it
5 is, reprocessing. Thank you.

6 MR. CAMERON: Thanks, Tom. John, and then
7 we'll go over to Rod?

8 MR. GREEVES: Okay. I think, Alex, you
9 asked a couple of right questions. And should recycle
10 be used in the definition? My answer is yes.

11 And for clarity, I'll point to you, Alex,
12 because you're sitting right next to me, the
13 definition that was in the white paper. It's very
14 short, simple. What it really defines is fuel
15 recycling facilities, so recycle is in the word.

16 And your second question was, what
17 activities would that include? And right in the
18 definition, which is here for you and others to read -
19 - I'm sorry, I can't put it up on the screen -- it
20 gives an applicant -- it defines what the applicant
21 can, in fact, do.

22 And the complex for a recycling facility
23 requires you to receive materials -- it would give you
24 the opportunity to receive and store materials. So
25 the word storage is in here.

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1 It would give you -- you need to process
2 materials. So the word process is in this definition.

3 It would include, in most contexts, fuel fabrication.
4 Take it, put it in a different form: fuel
5 fabrication.

6 So fuel fabrication is in this definition.

7 In some contexts, you have a waste stream, and it
8 would be vitrified. So this definition would
9 anticipate vitrification and other associated
10 activities.

11 So the NEI group tried to craft that
12 definition as is normally done for a regulation, which
13 during my career, I have worked on many of them.

14 So I think Alex asked the right question.
15 My answer is "Yes, the word recycle should be
16 included. It should include all the things that are
17 already in there, and you can add others."

18 And I have no objection to the word
19 reprocessing also being contained in here, but -- so
20 I'm giving my answer to your question, Alex. And I
21 think it's not inaccurate or misleading. And if it
22 has any chance of being either of those, we'd
23 certainly like to improve on that.

24 MR. CAMERON: Let me ask all of you, in
25 light of what John just said, that the NRC slides pose

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1 this in terms of a definition of reprocessing versus
2 recycling.

3 As John is pointing out, the definition
4 that is in the NEI white paper is the definition of a
5 facility. And as John just described, the types of
6 things that might go on at that facility.

7 Is there any help looking at it from the
8 definition of a facility, which would include where
9 you might reprocess, where you might recycle, blah
10 blah blah.

11 I mean, I would have to turn to Wendy,
12 first, and ask why isn't this framed, why isn't this
13 issue framed in the definition of a facility? Or am I
14 missing the point?

15 Wendy, do you want to talk to that? To
16 what Greeves just said?

17 DR. REED: Yes, I was actually going to
18 follow up with asking John how he envisioned all of
19 the operations being licensed. Because you mentioned
20 fuel fabrication, and would you consider that to fall
21 under Part 7(x)? Or would you consider it --

22 MR. GREEVES: Absolutely. It's -- Sven,
23 help me out here. But the agency is about efficiency
24 and effectiveness, and the enemy of efficiency and
25 effectiveness would be to have a facility that had

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1 four or five different licenses associated with it.

2 So the goal, in the NEI white paper, was
3 to recommend a Part 7(x), which apparently has been
4 accepted. And that that 7(x) encompass all the
5 activities necessary to do -- and I hate to use the
6 word, but recycle.

7 And it includes the things that I just
8 mentioned in the definition. To do that, you've got
9 to account for vitrification. You've got to account
10 for receipt of the material. You've got to account
11 for storage of it before it goes somewhere else. All
12 of those things under one regulation.

13 MR. CAMERON: And as -- we're going to get
14 to a little bit more when we hear about Brit's
15 presentation. This issue that Wendy is raising and
16 John is referring to is what I call the scope issue.
17 In other words, should there be separate licenses
18 under Part 72, et cetera, et cetera? Should all these
19 different types of facilities be all licensed under
20 7(x)?

21 So that's another angle on this, but are
22 we really barking up the wrong tree here, and focusing
23 on whether the term recycle should be used or
24 reprocessing? Or should they both be used, because
25 they're both going to happen at this facility?

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1 John?

2 MR. GREEVES: I don't see how you can
3 avoid the word recycle somewhere. And what it's about
4 is public health and safety. And the single license
5 for this facility should be looking at the
6 consequences on and off site.

7 And we're going to get to licensing safety
8 issues later. And I look forward to that discussion,
9 also. So that's why I strongly believe it should be
10 one license, and integrate the risks across these
11 facilities.

12 Trying to separate it out would, I think,
13 be a mistake. Hopefully, I'm answering your question,
14 Wendy.

15 DR. REED: Yes, thank you.

16 MR. CAMERON: Okay. And let's go to the -
17 - did that take care of it?

18 DR. REED: Yes, it did.

19 MR. CAMERON: Okay. Thanks, Wendy.
20 Thanks, John. Let's go to Rod, and I just would like
21 to ask all of you around the table, including South
22 Carolina DHEC, Department of Health and Environmental
23 Control, and Tom, Susan, all of you, does this
24 discussion that we've been having about the definition
25 of a facility and what should be included under that

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1 definition, does that help us get away from the
2 greenwashing, blah, blah, blah, blah, blah?

3 Okay, Rod?

4 MR. MCCULLUM: Yes. And really, John, I
5 think covered much of what I would have said. But I
6 have been asked by folks in the audience to clarify.
7 And I think what we've been talking about for a lot of
8 this time is word association.

9 You know, we associate recycling -- and I
10 started it with my bottle thing, maybe. I'm sorry.
11 But we associate certain things with recycling. And
12 if our focus groups tell us that we're going to get
13 accused of greenwashing if we do that, we probably
14 won't use it in our communications materials.

15 We associate certain things with
16 reprocessing, and we tend to associate very specific
17 technologies with reprocessing. And the idea of using
18 recycle, if it's the right term -- and maybe the
19 answer here is a third term.

20 But very clearly, what John said is, we
21 need a definition -- and more importantly, we need a
22 regulation. You know, the definition is the easy
23 part, and then writing the regulation that covers all
24 the activities that will be done on this facility from
25 the time the used fuel is received at the gate to the

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1 time both fresh fuel leaves the site, and also the
2 waste products to go to disposal leave the site.

3 We are having a lot of experience, at our
4 current plants right now, with regulating storage
5 under Part 72 and regulating the operations that load
6 the storage cast under Part 50. And we are finding
7 difficulties, and incredible inefficiencies, where you
8 get to the interfaces in the regulations.

9 So the most important thing here is, we
10 define this in a way that is both comprehensive and
11 forward-looking, in that it's not just aqueous
12 technology we're talking about.

13 So my clarification is, I don't care what
14 word you use, and I don't care what that word gets
15 associated with, as long as it is defined in a way
16 that allows every aspect of the facility to be covered
17 by the regulation.

18 MR. CAMERON: Okay. Susan, what do you
19 think about this new look at this definition issue?
20 In other words, a third term that covers all the
21 activities at the site.

22 MS. CORBETT: Before we go there, I want
23 to ask a question of AREVA. I mean, I'm assuming they
24 do all of these things at La Hague, right? Or no?
25 What do they call it in France, I guess, is what I want

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1 to ask you?

2 MR. BADER: Actually, the word is
3 recycling, but it's French.

4 (Laughter.)

5 MR. CAMERON: Thanks for that, Sven.

6 MR. BADER: So we use the French word for
7 recycling.

8 MS. CORBETT: What's the French word?
9 Maybe we should use that.

10 MR. BADER: The French word is recycling,
11 and if you interpret it, it's probably reprocessing in
12 English. But to clarify your position, you bring up a
13 good point, that in France we have two separate
14 facilities: the recycling/reprocessing activities are
15 in La Hague, and then the fuel fabrication facilities
16 are down in Avignon, in the south of France.

17 So any facility that Areva or some other
18 company would propose in the United States would
19 probably not separate those facilities. You don't
20 want to go through the transportation hassles of
21 transporting mixed oxide or plutonium.

22 MR. MCCULLUM: Sven, are they under the
23 same regulation, both of those facilities?

24 MR. BADER: In France, all facilities,
25 nuclear-related, are under one regulation, one

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1 umbrella regulation. And then they have accords,
2 basically, with each of the operating facilities. So
3 there's -- it's a model of efficiency, if you ask me.

4 But it's significantly different than here in the
5 United States.

6 And the accord is basically to -- you
7 license each facility individually, and you're only
8 given a timeframe in which, in case you have to go
9 through renewal, they go through a constant process of
10 not accepting the standard, that they expect constant
11 improvements at your facility.

12 So the waste is one aspect of that. And
13 for La Hague, the waste streams have constantly come
14 down, because the regulations -- not because of the
15 regulations. We've made the process more efficient.
16 But in the process, the regulations have also come
17 down.

18 So the regulator there is chasing the
19 design of the facility, the improvement of the
20 facilities.

21 MR. CAMERON: Okay.

22 MS. CORBETT: Your question was -- I think
23 maybe a new name is in order here. Because I think
24 the industry doesn't like reprocessing, and the
25 conservation community doesn't like recycling. So

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1 maybe we have to come up with something totally new.

2 MR. CAMERON: Okay. Maybe we had a little
3 breakthrough here. Tom, what do you think?

4 MR. CLEMENTS: Well, I don't necessarily
5 want to beat the reprocessing horse, although I think
6 that's the term we already have. But I -- just for
7 the record, I do recognize, as far as the NRC
8 regulations go, some weaknesses in both Part 50 and
9 Part 74 reprocessing facilities.

10 I don't think that we're going to be
11 moving towards a reprocessing facility, and I think
12 the Blue Ribbon Commission is going to basically
13 affirm that, perhaps some R&D.

14 So I have some mixed feelings with this
15 point. I don't see any problems with coming up with
16 new regs, though I do have some concern that NEI is
17 more in the driver's seat here, and I wish the Nuclear
18 Regulatory Commission would be more assertive that
19 they're in control, and they're not just following
20 along with the NEI white papers.

21 But I do recognize that there may need to
22 be regs if this is going to proceed towards
23 reprocessing, which I don't think is the case right
24 now.

25 MR. CAMERON: Okay. Thank you, Tom.

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1 Let's move to what I call the other topical areas, and
2 the slide I have isn't numbered, but it's a list of
3 things, like are there emergency planning aspects that
4 are unique to reprocessing and recycling? What
5 standards and current requirements should be
6 incorporated into fire protection regulations? Should
7 -- and then there's something on the seismic
8 standards, and 10 CFR Part 50, Appendix F, which I'm
9 sure someone will explain what that is to us.

10 But these are issues. And Wendy, could
11 you just characterize? I'm doing a very bad job of
12 this. Can you just characterize what you would like
13 to know from people in terms of these other areas?

14 DR. REED: Yes. I mean, these areas, I
15 would say, were identified because we do recognize
16 there are some sort of unique aspects of reprocessing
17 facilities, and not necessarily totally akin to
18 reactors and to current fuel cycle facilities.

19 And so these, we have focused more
20 attention on these sort of areas, and then some of the
21 other regulations that we're considering adapting for
22 a new part in the Code of Federal Regulations.

23 MR. CAMERON: Okay. And just thinking
24 about what Tom said, is that sometimes you're going to
25 see the NRC refer to the NRC white paper, which is not

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1 -- I'm sure the NRC would say it's not necessarily
2 giving more deference to what the industry is saying.

3 But it is an organizational tool, at any rate, to
4 start looking at some of these questions.

5 What did the NEI white paper say about
6 these issues? But let's think about that. Since we
7 have Mary and Tom, let's hear from them. Mary, what
8 about these other issues? Mary Olsen.

9 MS. OLSEN: I want to speak to the
10 question of fire. This really helps build the
11 credibility of the agency tremendously if you get your
12 feet wet and go look at some actual data of lessons --
13 get some lessons learned.

14 So I'm going to recommend a few things to
15 look at in terms of the fire situation. There were a
16 lot of fires at West Valley. It's why they decided
17 they needed to go offline, was because of the amount
18 of problems they were having with fires, and the
19 problems they were having with worker exposure, partly
20 due to the fires.

21 Rocky Flats. Different kind of plutonium
22 facility. Again, lots of fires. Strong record of
23 what happened there, and the types of releases that
24 happened because of fires.

25 Fukushima. They're looking at --

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1 apparently June 14th, there was another fuel pool
2 fire. And then I would say that I don't know very
3 much about it, but I think we should all be looking
4 back to the first really big accident, which was
5 Kishtim.

6 And that was associated with the waste
7 generated from plutonium recovery, and I've heard
8 there was an earthquake involved. I don't know. I'm
9 giving you hearsay. But you are in the position to do
10 some fact finding.

11 And there's a whole lot of collaborative
12 relationship that wasn't there in the 1950s, people
13 who were discovering about Kishtim because there were
14 journal articles about high exposures of radiation and
15 they couldn't imagine how it happened. And that's how
16 it came out.

17 Now there's a lot of interchange possible.

18 So I would really love to see you guys actually go
19 look where the problems have been, and learn from
20 them.

21 MR. CAMERON: Great.

22 MR. MCCULLUM: Yes, I think we have done
23 that, and we do continue to do that. Certainly, that
24 is the very foundation upon which our industry
25 maintains safety, is that everything that happens,

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1 anywhere in the world, in a nuclear facility, gets
2 analyzed and addressed at every facility in this
3 country. And hopefully other countries will be the
4 same way.

5 On the issue of fire, I do have to respond
6 to one thing Mary said. There have not been any fuel
7 pool fires at Fukushima. We have data on the Unit IV
8 pool. We have video of the Unit IV fuel. We do know
9 that perhaps some debris fell into the Unit III pool
10 as a result of the very severe explosion, but we have
11 not had a fuel pool fire there. Certainly not a
12 confirmed one, in any case.

13 On fire protection -- I apologize, the
14 reason I was looking at my Blackberry -- and I'll
15 reserve this for something we'll probably put in a
16 written comment, but we do want to ask the NRC why
17 you're choosing NFPA 801 as your fire protection
18 standard, instead of 905, which I think we would
19 prefer.

20 And I'm not the expert in this area, but I
21 think that also gets to making sure that we've learned
22 all the right lessons and looked at everything, that
23 we are using the latest fire protection knowledge out
24 there.

25 I had something I was going to say on

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1 emergency preparedness, but maybe we'll get to that
2 discussion next. I'll table that for now.

3 MR. CAMERON: Okay. Thank you. Thanks,
4 Rod. Wendy, did you have a clarification, before we
5 go to other people?

6 DR. REED: No. I just wanted to say thank
7 you to Mary for providing that information. I mean,
8 we have been looking at historical reprocessing
9 operations.

10 Some of the ones that you mentioned.
11 Another one, in the early '90s, was Tomsk. And so
12 yes, we are definitely taking into consideration
13 previous experiences, both in the United States and
14 other countries.

15 And the NRC has also begun a task force
16 that will look at Fukushima. And I imagine any
17 recommendations that came from that would impact the -
18 -

19 MR. CAMERON: Okay. So it's not just
20 you're going to adopt existing fire protection
21 regulations wholesale. You're actually going to look
22 to what's the best that should be done, in terms of
23 fire protection. What's necessary.

24 DR. REED: Yes.

25 MR. CAMERON: Okay.

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1 DR. REED: Unfortunately, in response to
2 Rod's point about the different national fire
3 protection standards, I'm not a fire protection
4 expert. Our fire protection expert who worked on this
5 section of this document isn't here.

6 But his recommendation was that we use 801
7 because it is for fuel cycle facilities. However, we
8 will take into consideration --

9 MR. CAMERON: Okay. So you've thought
10 about that distinction?

11 DR. REED: Yes.

12 MR. CAMERON: All right. Let's go to Tom,
13 and then to Sven.

14 MR. CLEMENTS: Thank you. Chip, should I
15 -- there were some questions to the public concerning
16 this Gap 1, and I can give some brief answers to a
17 number of these, if I could.

18 MR. CAMERON: Sure. Go ahead.

19 MR. CLEMENTS: There were six questions --
20 it's on page nine of this spiral -- and I just jotted
21 down some things on my computer. There was also a
22 question prior to the line, where it says "Questions
23 to the public concerning seismic design."

24 And my opinion is that the seismic design
25 standards should be the same for the reprocessing

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1 plant as for a reactor, given -- and associated
2 buildings, particularly because of the spent fuel
3 storage risk.

4 Just running down the questions, number
5 one was related to 10 CFR Part 50 Appendix X.
6 Appendix F, sorry. I think there's a problem in this,
7 that it mentions "high-level radioactive waste shall
8 be transferred to a federal repository no later than
9 10 years following separation. Fuel reprocessing
10 plant's inventory of high-level liquid radioactive
11 waste will be limited to that produced in five years."

12 I can foresee, particularly as we see at
13 Savannah River Site, that those timelines are not --
14 could be unrealistic, particularly if there's problems
15 on the high-level waste storage end of things. So I
16 would question that.

17 As far as decommissioning and financial
18 requirements, just a brief comment here. Because this
19 would be a public facility, I don't think the nuclear
20 waste fund should be taken into account on the
21 decommissioning part of this, and it would have to be
22 resources from the company.

23 Number four, what does NRC need to
24 consider when updating NUREG-1140? Please correct me
25 if I'm mistaken, but just in looking through it, when

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1 discussing dry cask storage, it said the fuel burn up
2 for this analysis is soon to be 33,000 megawatt days,
3 and I don't think that that's -- per metric ton of
4 uranium -- I don't think that that's accurate, because
5 of a higher burn up of fuel.

6 It may have been mentioned somewhere else
7 in the document. And also I think, under this, you
8 need to look at spend MOX fuel, if that were to go to
9 such a facility, and the additional heat burden that
10 it might place on a spent fuel pool.

11 The last two points. Number five,
12 emergency planning zone, I think it would be --
13 because of the quantity of spent fuel in the spent
14 fuel pool, it should be pretty much the same as
15 reactors, which I question if that's adequate, but I
16 don't think it can be less.

17 If such a facility were to be located on a
18 DOE site, we've seen here at Savannah River where Shaw
19 AREVA tried to get the emergency planning zone at the
20 site boundary of the entire Savannah River site,
21 rather than the immediate area around the facility.

22 If were a DOE site were located, it could
23 not be the site boundary, particularly of a large DOE
24 site, like Savanna River site. The site boundaries
25 would have to be right around the facility itself.

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1 And that raises a question, but what about
2 impact to DOE site workers that would be on the site,
3 versus the public, who may be beyond the further site
4 boundary?

5 In emergency planning aspects you need for
6 reprocessing, I didn't really see adequate discussion,
7 at least in NUREG-1140, about transportation of high-
8 level waste into the site. I think that needs to be
9 considered.

10 And just one more point. As far as the
11 spent fuel pool goes, it's my understanding that the
12 Rokkasho site, for example, the pool is already full.

13 It has about 3,000 metric tons of spent fuel in it.
14 So the radioactive inventory is quite high, so that
15 the seismic question comes into play here, if the pool
16 were to be drained.

17 I understand in the earthquake, the water
18 sloshed out of Rokkasho, by the way. If there is, as
19 Rod raised, an issue of recriticality -- but he may be
20 right that there may be some less risk because the
21 fuel is old.

22 But I think that needs to be demonstrated,
23 what the risks are of boiling the water, and how much
24 cooling is needed, plus the recriticality issue in
25 case of earthquake. And we here are in an earthquake-

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1 sensitive area.

2 Thank you.

3 MR. CAMERON: Thanks, Tom. Thank you very
4 much. Sven?

5 MR. BADER: Yes. I just wanted to add
6 that the fire issue -- I've had a lot of events here,
7 past history, but we actually have operating
8 facilities as well that I think are good role models
9 for how safety analysis should be done for fire, and
10 that would be La Hague and the more recent Rokkasho
11 facility.

12 So in consideration of all these other
13 events, these old facilities, yes, there's clearly
14 lessons learned for the industry, and those have been
15 applied in the existing facilities.

16 MR. CAMERON: Okay. Thanks, Sven. And
17 Rod?

18 MR. MCCULLUM: Yes, I just want to say
19 both with respect to emergency preparedness and
20 seismic, it involves a lot of these issues that -- and
21 this gets into being technology-neutral. We think the
22 regulation should be hazards-based.

23 The type of emergency planning zone, and
24 the type of emergency planning that you need, should
25 be driven by the type of event you can have at the

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1 facility, what the safety analysis would tell you. Do
2 you have a potential event? Do you have the
3 inventory, do you have the energy where you could trip
4 the Environmental Protection Agency's protective
5 action guidelines?

6 That's what would trigger certain levels
7 of emergency planning. Do you have the possibility of
8 a general emergency? Same thing in seismic. I mean,
9 if you have the potential of an event with off-site
10 consequences that would trip those guidelines, you
11 would certainly want to design against the worst-case
12 earthquake, the same way you do at a nuclear plant.

13 I mean, the plants in California obviously
14 have very severe earthquakes that they're designed
15 against, and if you had an event with an off-site
16 consequence, you'd want to be at the same level. But
17 again, it has to be -- and I'm not suggesting we're
18 going to build the reprocessing facility in
19 California, but it has to be hazards-based in both
20 cases.

21 And I think if you can succeed in doing
22 that, I'll refer last to the criticality. If you --
23 rather than try to regulate a specific process and how
24 you would prevent that process from creating a
25 criticality by mixing too much plutonium in the wrong

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1 geometry, or whatever, you certainly want to regulate
2 what is needed to prevent criticality in terms of the
3 levels and controls, and that you need to be able to
4 do that in the face of a design-basis earthquake,
5 whatever is the appropriate earthquake hazard
6 specified for that site.

7 Certainly the regulation should require
8 that the applicant demonstrate that they would not
9 have a criticality should that earthquake occur.

10 MR. CAMERON: And I think that's a good
11 preview of the discussion we're going to have tomorrow
12 morning on safety in licensing and general design
13 criteria, and things like that. So that's something
14 to keep in mind.

15 What I'd like to do is go on to the
16 audience now, and see if people have any comments out
17 here. We had a pretty wide-ranging discussion on a
18 number of issues, and if anybody has anything that
19 they want to ask, or anybody wants to add anything,
20 including the lady with the Eeyore shirt on.

21 Let's go to Bobbie, and then we'll go to
22 this lady. Do you want to go? And please introduce
23 yourself to us.

24 DR. HAYES: Good morning. I'm Doctor Rose
25 Hayes. I'm on the Department of Energy Site-Specific

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1 Advisory Board for the Savannah River site, and I
2 chair the Nuclear Materials Committee for that Board.

3 And I just have a few comments to make.

4 First of all, I think the discussion on
5 the need for a good, credible framework for regulating
6 and licensing reprocessing facilities in the U.S. is
7 premature.

8 I think such operations and facilities
9 should be U.S. Government-developed and managed. They
10 should also occur within existing and available or
11 modified U.S. Government Nuclear Labs or Sites. I
12 think such operations should be under government
13 security forces. I think such operations or
14 facilities should be sited based on public opinion and
15 buy-ins.

16 And I would remind you all that Thomas
17 Jefferson said "Public opinion is the lord of the
18 universe." And a lot of operations have fallen
19 because they ignored the important factor of public
20 opinion.

21 I think such operations and facilities
22 should be developed and operated within a
23 comprehensive U.S. nuclear waste management policy,
24 which actually already exists.

25 Remember that we do have a 1982 Nuclear

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1 Waste Policy Act. And following the findings of the
2 Blue Ribbon Commission, then we probably need to
3 rework that act.

4 But we already have an act that would --
5 within which this kind of consideration --
6 reprocessing facilities, recycling facilities,
7 whatever you want to call them -- should be based.

8 Finally, for those of you who attended the
9 Nuclear Waste Management Symposium in Phoenix this
10 past March, you're aware that very few countries in
11 the world are considering reprocessing or recycling as
12 a solution for their nuclear waste management
13 problems.

14 Those countries that are considering that,
15 the interests there are based more on financial
16 considerations than public acceptance, public opinion,
17 public welfare. Thank you.

18 MR. CAMERON: Thank you very much, Dr.
19 Hayes. Bobbie, could you please introduce yourself to
20 us?

21 MS. PAUL: Hi. My name is Bobbie Paul,
22 and I'm the executive director of Georgia WAND, which
23 stands for Women's Action for New Directions. We were
24 founded about almost 30 years ago as Women's Action
25 for Nuclear Disarmament.

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1 We have been fervent watchdogs of Savannah
2 River site for about 20 to 25 years, so we have a lot
3 of concerns in the area. And I've made a lot of
4 notes. And thank you for the opportunity. Some might
5 be points that you could discuss, or not.

6 One of my questions is, why isn't Georgia
7 more represented here? I know we have South Carolina
8 DHEC, but I don't know whether Georgia EPD, Alan
9 Barnes, was asked to attend.

10 But as we know, radiation doesn't
11 acknowledge state boundaries, and we would hope, as a
12 representative of a lot of members in Georgia, that
13 Georgia would be consulted in this. As well as, I
14 would say, the public at large. It was through a lot
15 of inter-emails that I finally discovered this meeting
16 was occurring.

17 And I don't know how much public
18 participation was sought, but I think very often
19 having more transparency and openness and
20 participation would be really good on the front end,
21 even in the discussion, and even though there may be
22 even trade secrets involved.

23 I have a question -- oh. First of all,
24 Dr. Hayes, I'm glad you brought up reprocessing,
25 because at the Blue Ribbon Commission, of which we

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1 took part when they were here in Augusta, I believe
2 the outgoing president made a statement that they were
3 supportive, the CAB, the SRS CAB, of reprocessing.

4 I don't know whether that is still the
5 case of the CAB.

6 (Off-mic comments.)

7 MS. PAUL: Okay. Well, it was announced
8 at the CAB, and --

9 (Off-mic comments.)

10 MR. CAMERON: We should really get that on
11 the record.

12 MS. PAUL: Get that on the record?

13 MR. CAMERON: On the microphone. If you
14 could just repeat that, please?

15 DR. HAYES: Yes. The Citizens' Advisory
16 Board for the Savannah River site has not taken any
17 position on reprocessing. We have, in our
18 recommendation to the Department of Energy,
19 Recommendation Number 265, suggested that one possible
20 future potential for the use of H Canyon Facility
21 might be R&D of reprocessing technology, but not
22 reprocessing.

23 The R&D. And that is because there are
24 materials that could be fed to the site, or to H
25 Canyon, and utilized in such R&D.

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1 MR. CAMERON: Okay. Bobbie?

2 MS. PAUL: I'm glad that GNEP has gone the
3 way that it has gone, but I do remember testifying
4 about GNEP way back when, and about reprocessing.

5 In regards to your discussion about
6 recycling and reprocessing, I can't remember the name
7 of the gentleman from DOE who used to come on the
8 screen in the beginning of all these discussions and
9 said -- he wore a bow tie, but I cannot recall his
10 name -- who said to all, as that dog and pony show
11 went around the country, that "Just think of
12 reprocessing as simple recycling, just as you would
13 recycle your newspapers."

14 So that had been put out there for years
15 from DOE, and specifically with those terms. And I
16 believe the word "benign" was used. One thing that
17 just flummoxes me in all of this is why AREVA would
18 want to do this, when we have such an enormous waste
19 problem in this country.

20 And knowing how lucrative this whole
21 nuclear so-called renaissance and everything is coming
22 up, and thinking about the MOX and the billions being
23 spent on that job site at Savannah River Site, I keep
24 wondering about the volumes of waste that are going to
25 be made, and wondering, why would someone want to get

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1 into this business just to be taking more and more
2 waste?

3 And then I got to thinking, well, all of
4 the sites now, the 64, or five, or six, or seven sites
5 where the 104 reactors sit, are being paid by the
6 Department of Energy to hold that waste. And I'm
7 wondering, is there a financial gain to be -- how much
8 is the Department of Energy actually paying these
9 sites, and is this a financial consideration in AREVA
10 being interested in moving forward with such a plan?

11 And I have more, but I'll save that till
12 later.

13 MR. CAMERON: Okay. Thanks, Bobbie. And
14 I'm going to see who else in the audience wants to say
15 anything, and then we'll go back up to the panel to
16 see if they want to add anything to the comments that
17 were raised.

18 Yes? And please introduce yourself to us.

19 MS. TATUM: Hi. My name Gloria Tatum, and
20 I'm not an industry person. I'm not even on an
21 environmental group. I don't know what you people
22 know. I'm not an expert.

23 I'm just an individual, but I don't want
24 nuclear anything. I don't want mining, I don't want
25 transportation, I don't want recycling, I don't want

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1 reprocessing, I don't want energy, I don't want
2 weapons.

3 I don't want nuclear anything, and the
4 reason I don't want it is because it's dirty,
5 expensive, dangerous. It causes -- there's cancer
6 clusters around these things. There's accidents.
7 There's spills. There's boo-boos.

8 And it goes on, and on, and on.
9 Thousands, and thousands, and thousands that the
10 public really doesn't know about.

11 When I was eight years old, back in 1950,
12 I got to be at the forefront of the development of the
13 nuclear industry, with Lockheed having a nuclear plant
14 across the creek from me.

15 I watched my community die of cancer. I
16 looked at deformed animals. So I guess that's my
17 expertise as a small child, watching everybody around
18 me die and be deformed.

19 And you can deny responsibility, but it's
20 still there. Because not even here, in this area, the
21 soil, the water -- it's not being tested. I don't
22 know if the turnip greens and the collard greens, if
23 you're getting radiation from them when you eat them,
24 when they're grown in this area.

25 You know, I don't know. It's not even

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1 tested. The soil, the people -- they are beginning to
2 prove that there is cancer clusters around these
3 plants. But nobody really wants to do any research
4 into that, because they don't want to know what they
5 may find.

6 This is -- my opinion of nuclear is that,
7 from my own experience with my family and community,
8 is that it's a death industry. It's supported by a
9 death cult that worships at the altar of profit, and
10 that's what this is about.

11 We could have solar. We could have wind.
12 We could have other energy sources that have been
13 developed, but not allowed to come to market, because
14 maybe they're not as profitable for some people.

15 I oppose this. I may be the minority in
16 this room. I may be the minority in this country and
17 the world, but I won't be in the future, when the
18 truth about this dirty, nasty, dangerous, cancer-
19 causing death industry gets out to the public.

20 Thank you.

21 MR. CAMERON: Okay. Thank you, Gloria,
22 for those comments.

23 (Off-mic comments.)

24 MR. CAMERON: Okay. Bobbie?

25 MS. PAUL: In regards to one thing that

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1 Ms. Tatum said, I would just like you to know that
2 there is currently no radiological testing in the
3 state of Georgia.

4 This program of DOE emissions specifically
5 was cut in 2003/2004. And though I believe DOE
6 continues to fund South Carolina to the tune of about
7 a million and a half a year to monitoring our leafy
8 greens, deer, cattle, water -- specifically rain, the
9 river itself -- and a lot of our area in about a five-
10 county area directly across from Savannah River site
11 has been without those monitoring funds.

12 We're currently in discussion with DOE for
13 the last two years to try and restore them, but we're
14 nowhere near signing a contract as of yet.

15 MR. CAMERON: Okay. Thank you, Bobbie.
16 Before we break for lunch, do we have anybody at the
17 table who wants to say anything in regard to -- we
18 have one NRC staffer who wants to add something.
19 Introduce yourself, Bret.

20 MR. LESLIE: I'm Bret Leslie from the NRC
21 staff. But it's kind of a teeing up for tomorrow. It
22 was a useful clarification in terms of the framework
23 for all the facilities that would be licensed, but
24 that has a real impact in terms of what is the
25 appropriate technique for evaluating safety at such a

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1 diverse facility.

2 And so it's just something to keep in mind
3 when John Stamatakos goes tomorrow, because that's
4 something that we're struggling with. So that's all.

5 MR. CAMERON: And Bret's going to be with
6 us later on today, talking about financial. But so
7 that we don't lose that point, make that again when --
8 if it doesn't come up when John is doing his
9 presentation.

10 Mary?

11 MS. OLSEN: I want to appreciate and
12 acknowledge Gloria's courage to come into this room,
13 her courage to say what she said, and to acknowledge
14 that I work with impacted communities that are
15 astoundingly sick.

16 The latency periods are up, and house
17 after house after house has sick people in it. And I
18 want to thank her for coming and speaking about this,
19 because we as specialists insulate ourselves,
20 including those of us who have NGO, Non-Governmental
21 Organization type jobs, we insulate ourselves, because
22 it's very difficult to see the fact that radiation
23 causes cancer, and cancer causes death.

24 MR. CAMERON: Okay. Thanks, Mary. And
25 I'm just reminded of the fact that, as we listen to

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1 people from the public and I listen to all of you
2 around the table, that there's a lot of things that we
3 can all learn from each other.

4 And not just in these formal discussions,
5 but in the informal breaks that we're taking over the
6 next few days. And including -- I think we have an
7 informal open house scheduled tomorrow afternoon,
8 after we break up.

9 With that, amazingly enough, we're only
10 five minutes behind schedule. So let's take a lunch
11 break. Oh. Roger Hannah, NRC Region II, Regional
12 Public Affairs Officer. Roger, would you wave your
13 hand?

14 If anybody has questions about what's
15 going on in Region II, nuclear-wise, Roger is there.
16 He's the so-called font of knowledge. So I just
17 wanted to let you know he's back there.

18 Let's be back at 12:30. What, 25 minutes
19 isn't enough? No, I'm sorry. Let's be back at 1:30.

20 (Whereupon, the above-entitled public
21 meeting went off the record at 12:05 p.m, and resumed
22 at 1:33 p.m.)

23 MR. CAMERON: We have Derek Widmayer with
24 us, who had some flight problems, and Derek is with
25 the Advisory Committee on Reactor Safety. Do you want

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1 to testify your microphone? Let's see if you can work
2 it.

3 MR. WIDMAYER: There's a green light. Is
4 that working?

5 MR. CAMERON: It is. And if you want to
6 say anything, what you do is you do that.

7 MR. WIDMAYER: Oh, yes. Okay.

8 MR. CAMERON: The rest of us introduced
9 ourselves.

10 MR. WIDMAYER: Okay. I'm Derek Widmayer.
11 I'm a Senior Staff Scientist with the Advisory
12 Committee on Reactor Safeguards. And I apologize for
13 being late, but I guess I chose the wrong airline or
14 something. Anyway, I'll try to contribute twice as
15 much this afternoon to make up.

16 MR. CAMERON: Okay. Thanks, Derek. I
17 didn't want to make too big a point of this, but on
18 the issue of representation around the table and the
19 State of Georgia being here, we work through a number
20 of state groups, Conference of Radiation Protection
21 Control Directors, and some other groups to see who we
22 could get at the meeting. And I'm assuming that the
23 State of Georgia was told about it. We got South
24 Carolina. I know that -- but I should have called
25 them directly, especially if I would have known that

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1 Bobby was going to be here.

2 But any rate, that's that issue. And we
3 have Dr. Brittain Hill, Britt, who's going to do waste
4 and environmental. And Wendy Hill is with us -- Wendy

5 Reed, sorry. And we do have a parking lot issue
6 from this morning on the Environmental Impact
7 Statement Mary Olsen raised for this rulemaking, so
8 we'll get into that at some point.

9 And we talked a little bit about scope
10 this morning, what I call scope. In other words,
11 there might be a number of different licenses for the
12 facilities that may be located on one of these sites.
13 And do you have separate licensing requirements, or do
14 you fold them in? Britt is also going to talk to that
15 issue, and I'll just turn it over to him. Britt.

16 DR. HILL: Well, my talk is being
17 redefined as we speak. Thanks, Chip.

18 MR. CAMERON: Okay.

19 DR. HILL: I'm glad that everybody has had
20 a bit of lunch, and after having a nice bit of lunch
21 here in the beautiful south, what could be more
22 fascinating than talking about garbage?

23 So, the topic of waste really doesn't have
24 all the allure of technical specifications, or
25 emergency planning, but it does represent a very

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1 important consideration for any facility that proposes
2 to reprocess spent nuclear fuel.

3 Now, we know that for any potential
4 reprocessing facility, there's a number of important
5 considerations for high-level waste, or other kinds of
6 waste coming out of that facility.

7 We're going to have to have the storage of
8 spent nuclear fuel, the management of high-level
9 waste, which includes the storage of high-level waste,
10 but also its solidification. We'll need to be
11 clarifying what kind of waste would be considered
12 high-level waste, or those that could be considered
13 low-level waste. And, also, we have to have
14 appropriate controls for the monitoring of effluents.

15 Now, within these considerations, NRC has
16 to develop a regulatory framework to license spent
17 fuel reprocessing at a facility that is both safe and
18 secure, while keeping these considerations in mind.

19 For the past several years, Staff have
20 been working on our higher priority technical issues
21 that support rulemaking for reprocessing, and we've
22 come up with some ideas on how we can address these
23 technical considerations involving our waste and
24 effluent streams.

25 So, as you know, we've put these technical

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1 considerations into a number of gaps, and this
2 afternoon we'll be talking about five of these gaps
3 that are all related to waste. Gap 2, our independent
4 storage of high-level waste; Gap 3, what has been
5 called waste incidental to reprocessing; Gap 15 on
6 waste confidence; 16, waste classification; and
7 finally Gap 19 on effluent control and monitoring.

8 So, rather than worry about more
9 introduction, let's just jump right into the gaps;
10 first one being our gap on waste storage.

11 The simple issue is that our current
12 regulations allow for the storage of spent nuclear
13 fuel at reactors, or at independent spent fuel storage
14 installations, but there's really no mention of
15 reprocessing facilities in our current regulations.
16 Also, there really are no regulatory provisions for
17 the storage of high-level waste at any commercial
18 facility in the United States.

19 In our current framework, high-level waste
20 would need to be stored at a monitored retrievable
21 storage installation that is operated by the
22 Department of Energy. Now, somebody can correct me,
23 but I haven't heard anything from the Department of
24 Energy that they plan to develop a monitored
25 retrievable storage installation, so really there's no

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1 path in our current regulations to allow for the
2 storage of high-level waste that would be produced by
3 a potential reprocessing facility.

4 What Staff is proposing to solve this
5 storage gap is that we would expand our existing Part
6 72 regulations to include the storage of both spent
7 fuel and high-level waste at a commercial reprocessing
8 facility. This approach would mirror the general
9 licensing authority approach that currently exists at
10 Part 50 for the storage of spent nuclear fuel at a
11 licensed power reactor.

12 A new regulation that we are being
13 proposed, as Wendy talked about this morning for
14 reprocessing, which we're commonly referring to as our
15 Part 7x, would contain general design criteria for
16 storage of spent nuclear fuel, just like you see in a
17 Part 50 Appendix for general design criteria for a
18 nuclear power plant.

19 We would also bring forward the applicable
20 parts of Appendix F in Part 50 that are related to the
21 storage and treatment of waste at a reprocessing
22 facility. Those would be brought in to our Appendix -
23 - excuse me, that would be brought in to our Part 7X.

24 And I believe the terms that we would not be carrying
25 forward, at least in our proposal at this stage, would

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1 be the policy considerations in Appendix F that
2 currently exist about high-level waste would have to
3 go to a national disposal site within 10 years. We
4 believe that's a policy issue, and not a technical
5 issue, and the NRC is not in a position to establish
6 national policy on when waste should be disposed of.

7 We believe that this approach, the
8 modifications to Part 72, would allow for a general
9 licensed authority to store both high-level waste and
10 spent fuel to a entity that is licensed to operate a
11 potential reprocessing facility.

12 These modifications, which again mimic the
13 ones we have for Part 50, would also allow for a
14 certification of casks to store high-level waste
15 similar to the current process that allows for storage
16 of spent nuclear fuel in these storage casks.

17 Now, as part of the general license
18 considerations for spent nuclear fuel storage at a
19 reprocessing facility, we believe that reasonable
20 limits would need to be established on the amount of
21 spent nuclear fuel that could be stored on site in
22 order to accommodate the reprocessing operations.
23 These limits, we believe, are needed in order to
24 distinguish the storage needs for spent fuel
25 operations from those for the intent to have long-term

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1 storage of spent nuclear fuel on site.

2 If the desire of an applicant is to
3 establish a large field of spent fuel storage casks in
4 order to accommodate long-term storage, then the
5 avenue already exists in our regulations under Part 72
6 to apply for a license for a specific independent
7 spent fuel storage installation that could be co-
8 located next to the potential reprocessing facility.

9 So, again, we believe the general
10 licensing authority that we would establish under Part
11 7x would accommodate some spent fuel storage to allow
12 for operational efficiency of the reprocessing
13 facility, but would not result in a de facto
14 independent spent fuel storage installation on the
15 site.

16 Now, some of the alternatives we heard
17 primarily focused on taking our existing Part 72
18 requirements and folding them into our new Part 7x.
19 While that theoretically is possible, we looked at
20 Part 72 rulemaking would still be needed in order to
21 accommodate cask certification. And this would be a
22 significant departure if we did that approach from the
23 currently established practice of general license
24 authority that we're using for power reactors.

25 That's why at this stage, Staff is more

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1 comfortable with using the same sort of approach we
2 use at reactors for spent fuel storage than we would
3 be using by bringing a whole new series of regulatory
4 requirements into a new regulatory framework.

5 Some of the concerns that we're trying to
6 address with this action is insuring that waste is
7 removed from the site. There are no provisions, and
8 Staff is not contemplating any provision to allow for
9 any disposal of radioactive waste at a potential
10 reprocessing facility.

11 Our intent is that all significant amounts
12 of radionuclides would be removed from this facility
13 prior to, or as part of the decommissioning. And, of
14 course, we want to make sure that whatever is done has
15 safe storage for both spent fuel and high-level waste
16 on site.

17 We received stakeholder input, of course,
18 on this issue. A lot of the input focuses on a need
19 for the government to develop an effective plan for
20 nuclear waste storage and disposal in the United
21 States. Obviously, that's a little bit beyond the
22 scope of our ability to rulemake, but we are aware
23 that, of course, the National Strategy for high-level
24 waste and spent fuel disposal is being rewritten as we
25 speak.

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1 There's also concerns that have been
2 raised about reprocessing would be adding additional
3 waste to the current waste inventory. And absent a
4 national strategy for disposal, this would not be the
5 right thing to do at this time.

6 So, I'd like to tackle a little more
7 difficult issue, if you want to view it that way, and
8 what to do about the incidental waste issue. It's a
9 very simple question for us. What sort of waste
10 resulting from reprocessing would be considered high-
11 level waste versus those that would be low-level
12 waste?

13 Just recall our definition from the
14 Nuclear Waste Policy Act of what is high-level waste,
15 is those materials that are highly radioactive
16 resulting from reprocessing that includes liquid waste
17 produced directly in reprocessing, and any solid
18 material derived from such liquid waste that contains
19 fission products in sufficient concentrations.

20 Now, those words originate in the Nuclear
21 Waste Policy Act of 1982, which was put together to
22 talk about a framework for disposal. It's important
23 to remember the intent of these words, is to talk
24 about what materials require geologic disposal,
25 permanent isolation from the environment. It's those

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1 materials that are highly radioactive and contain
2 fission products in sufficient concentrations.

3 NRC Staff believes that reprocessing
4 wastes that are not highly radioactive, in other words
5 not requiring geologic disposal, those lower activity
6 wastes can be safely disposed of in a near-surface
7 disposal facility if the requirements for disposal
8 specified in 10 CFR Part 61 are met.

9 We need to develop a practicable approach
10 in order to distinguish those highly radioactive
11 materials resulting from reprocessing that require
12 deep geologic disposal from those lower activity
13 materials that could be safely disposed of in a near-
14 surface facility that meets the radioactive disposal
15 requirements in 10 CFR Part 61.

16 Now, there are several options that Staff
17 is exploring in order to meet that practical
18 application. The first is, we could go back to
19 Congress and ask them what did you all mean by highly
20 radioactive, and sufficient concentrations? We could
21 add those questions to our NRC's proposed legislative
22 agenda.

23 We are concerned, though, that getting
24 that answer from Congress may take a while, may take
25 some iterations, and wouldn't really address within

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1 the framework -- time frames that we're developing the
2 new regulation under. We may not get the timely
3 answer, and the right answer in order to support the
4 ongoing rulemaking. But it is an option. We will be
5 asking the Commission to weigh in on this, because it
6 really is a policy option rather than a technical
7 option.

8 Staff's preferred approach would be to
9 clarify through the rulemaking process the terms
10 "highly radioactive," and "sufficient concentrations."

11 We believe that we can develop some functional
12 framework to allow a potential licensee to distinguish
13 between those highly radioactive materials that need
14 deep geologic isolation from those materials that
15 could be safely disposed of in a low-level waste
16 facility.

17 And, of course, the third option is the
18 no-action option. We could just allow the existing
19 statutory language to stand, and have this be a issue
20 that could be addressed as part of the hearing
21 process.

22 We received input from a number of
23 stakeholders on this issue that primarily focused on a
24 desire for us to include the definition of Waste
25 Incidental to Reprocessing, or WIR, as part of our

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1 regulatory definitions. These stakeholders believe
2 that including that definition would clarify what
3 would not be high-level waste.

4 The language that's been discussed would
5 be from the WIR definition that exists in the National
6 Defense Authorization Act of 2005, that was all
7 established for how we deal with places like residual
8 tank waste at Savannah River site, Hanford, et cetera,
9 where a legacy of large volumes of liquid high-level
10 waste and the resulting solid products has to be dealt
11 with.

12 Staff was concerned that adopting a WIR-
13 type definition would send the wrong message, and give
14 the wrong intent, because there is no intent at a new
15 recycling or reprocessing facility to dispose of any
16 waste, or allow any residual waste of significance to
17 be remaining on that site after decommissioning. And
18 the intent of WIR is to talk about what materials
19 could be safely disposed of on site after they had
20 been cleaned to the extent practical. We just don't
21 believe those conditions exist, and promulgating a
22 definition to WIR would not be the right framework in
23 the current regulatory environment.

24 A third gap results, and is about waste
25 confidence. And for folks that haven't been familiar

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1 with that issue, NRC recently did a redetermination of
2 the technical information that was available to say
3 whether they had confidence that spent nuclear fuel
4 from any reactor could be safely stored until such
5 time that the country developed a permanent disposal
6 option.

7 Now, NRC determined that there was enough
8 information that spent nuclear fuel from any reactor
9 can be stored safely and securely for at least 60
10 years beyond the licensed life of operation of any
11 reactor, and there wouldn't be any significant, or no
12 environmental impacts.

13 The question for this gap is, can NRC
14 Staff make a generic finding that there would be no
15 significant impacts of long-term storage from high-
16 level waste from reprocessing? Can we, essentially,
17 expand our waste confidence determination for spent
18 fuel to include high-level waste? Or, alternatively,
19 would an applicant need to address these potential
20 impacts as part of their environmental report, and
21 this would be a licensing issue.

22 After looking at the available
23 information, NRC Staff believes that an applicant
24 would need to evaluate the potential environmental
25 impacts from high-level waste storage. We just don't

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1 believe that there is sufficient information at this
2 time for NRC Staff to make a generic determination
3 that we have enough technical information to say that
4 high-level waste could be stored for at least 60 years
5 beyond the licensed life of any potential reprocessing
6 facility with no significant environmental impacts.

7 Some of our concerns are that we just
8 don't have a long history of doing this storage in the
9 United States. Under this proposal, the available
10 technical information would have to be analyzed by an
11 applicant. The Staff is recommending that the time
12 frame of that analysis should include at least 60
13 years beyond the licensed life of the facility. And
14 then NRC Staff, as part of its licensing review, would
15 evaluate that information, and give the results of
16 that evaluation in the NRC's Environmental Impact
17 Statement, or Environmental Assessment.

18 Our concerns with expanding the Waste
19 Confidence Rule really focus on when the original
20 Waste Confidence Rule was promulgated back in 1984 for
21 nuclear power plants. We have had decades of
22 experience in licensing and going through hearings on
23 nuclear power plant operation. And the record at that
24 time showed that there really were no significant
25 environmental impacts associated with the storage of

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1 spent fuel until such time that it could be disposed
2 of. That led the Commission to establish the 1984
3 Waste Confidence Rule in order to increase the
4 efficiency of the hearing process, rather than
5 requiring people over, and over, and over again to
6 analyze that there were no significant impacts.

7 However, we don't believe there's
8 sufficient information on high-level waste storage.
9 We don't have decades worth of licensing experience,
10 for example, on high-level waste storage. We don't
11 have any experience on that in this country. We don't
12 know what the issues would be in licensing, because we
13 don't have a licensing hearing record to speak of.

14 We also are concerned that we currently
15 don't have any casks that are certified for the
16 storage of high-level waste, and the technical issues
17 that would be associated with potential long-term
18 monitoring of those casks also haven't been aired out
19 in hearing process.

20 So, we don't believe this is a significant
21 concern for a licensee to address these potential
22 impacts. We just don't believe that at this time, the
23 NRC Staff can make a generic finding that there are no
24 issues that would need to be raised associated with
25 long-term storage of high-level waste from

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1 reprocessing.

2 We received some input, of course, on this
3 issue. Many stakeholders believe that the license
4 application for reprocessing should address the
5 environmental impacts of solidified high-level waste.

6 There is also concerns that any addition of
7 reprocessing waste to the existing waste disposal
8 issue would put an additional burden on the
9 Commission's confidence for disposal of high-level
10 waste in the United States.

11 I'm afraid that last issue is kind of
12 beyond the scope of what we can address today, but we
13 are sensitive to the needs of giving a clear and
14 transparent record for the decision on whether high-
15 level waste storage can be accommodated safely and
16 securely as part of the reprocessing facility.

17 On the waste classification issue, the
18 essential issue here is that some radionuclides in
19 reprocessing waste may not be in our classification
20 tables in 10 CFR 61.55. For example, krypton-85 isn't
21 in the current tables. There are some noble metals
22 and some isotopes from the lanthanide series that we
23 would expect from reprocessing. They just aren't in
24 the existing waste classification tables, and weren't
25 considered as part of developing those tables back in,

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1 I think it was the 1970s.

2 By default, those wastes could be
3 considered Class A waste with the caveat that that's
4 not always the case. The Commission still has the
5 authority to require the specific disposal issues
6 associated with any waste stream if they believe that
7 there is a safety issue that would have to be
8 addressed. So, even though by the ruling in the
9 regulation these non-classified radionuclides might be
10 considered Class A, it doesn't mean that they would
11 have to be considered Class A, in the same way that
12 the depleted uranium issue was addressed as a unique
13 waste stream.

14 Now, when this gap was originally
15 proposed, we weren't at the NRC doing anything under
16 Part 61 as part of rulemaking. But right now, there
17 are several efforts that are ongoing on the NRC not
18 related to reprocessing, but as part of an overall
19 framework for low-level waste classification and
20 disposal. These ongoing actions have sort of subsumed
21 our waste classification gap. And this issue is being
22 addressed by ongoing rulemaking at the NRC.

23 Staff has been directed by the Commission
24 to consider a comprehensive revision to 10 CFR Part
25 61, and that just occurred last year in the SECY Paper

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1 I've got listed here. That is a Position Paper that
2 the NRC Staff is working on. They're going to
3 exploring options for that next year, and there will
4 be some opportunities for input to that process.
5 They'll be announced by our FSME Group later this
6 year, or early next year.

7 Also, the Staff currently is in rulemaking
8 over unique waste streams. And that's discussed in our
9 SECY Paper from 2008, Number 147 there. And that's in
10 response to the depleted uranium issue. Here's
11 depleted uranium, it wasn't in the waste
12 classification tables, would that be considered Class
13 A waste? The Commission said no, you need to site-
14 specific performance assessments, make sure it can be
15 disposed of safely and securely.

16 That rulemaking is being expanded or
17 considered to be expanded in order to accommodate
18 different unique waste streams. The isotopes that
19 we're talking about could be considered unique waste
20 streams, as well, in which case Staff's proposal is
21 for this rulemaking, Staff's proposal would be to
22 require a site-specific performance assessment to see
23 whether these unique waste streams could be disposed
24 of safely and securely in a low-level waste disposal
25 facility.

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1 As part of that rulemaking that's
2 currently ongoing, there are several alternatives
3 being considered by Staff. The one I just talked
4 about would be risk-informing the Part 61 waste
5 classification framework, giving a comprehensive
6 revision, or site-specific criteria. Again, all this
7 is under the specific rulemaking that's ongoing right
8 now for unique waste streams. So, the bottom line is
9 our waste classification gap is being addressed by the
10 ongoing rulemaking as part of the Part 61 framework.

11 Stakeholder input on waste classification,
12 we had the overall view that treatment of large
13 quantities of radionuclides would be needed. They have
14 the same concerns that we do about are we getting the
15 right safety issues addressed for any of these
16 disposals.

17 There's also a view that some of the low-
18 level waste rules need to be rewritten before a
19 reprocessing plant can be considered. Staff believes
20 that the current regulatory framework is sufficient to
21 provide for safe and secure disposal, and that our
22 Part 7x can accommodate whatever the changes are that
23 result in Part 61. And, again, this input of a
24 hazardous-based approach for classifying waste seems
25 to be the direction that NRC Staff is going.

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1 Our final issue, and I thank you all for
2 bearing through an iteration of many waste issues
3 here, or final issue is on effluents; that, basically,
4 any reprocessing facility is going to need regulations
5 for effluent monitoring and control. We're concerned
6 that there is a greater source term and greater
7 potential for emissions from reprocessing than there
8 are in many other types of nuclear facilities.

9 The radionuclides from reprocessing would
10 be in potentially mobile form, such as liquids and
11 gases. And there's also these isotopes of concern,
12 primarily gaseous radionuclides, and krypton-85,
13 tritium, iodine-129, carbon-14.

14 The question is, how do we go about
15 regulating effluent monitoring and control? Staff is
16 proposing that we would use the same basic approach as
17 in Part 50, as the basis for developing regulatory
18 requirements for effluent monitoring and control.
19 We're considering developing criteria very similar to
20 those in Part 50, Appendix I, which would provide
21 numerical guidelines and meeting our as low as
22 reasonably achievable requirements. We recognize that
23 we would need to develop some risk-informed
24 performance-based approach to determining what those
25 release limits are.

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1 We received input on the NEI White Paper.
2 It was, basically, very similar to the approach that
3 Staff is proposing to drive our regulations from
4 existing Part 50 requirements. Our old Advisory
5 Committee on Nuclear Waste and Materials had done a
6 very extensive review of reprocessing issue back, I
7 believe it was 2008, and their report to the
8 Commission recommended that NRC should hold
9 interagency discussions on it with EPA on whether our
10 existing release limits for krypton and iodine needed
11 to be reexamined to reflect current technology. And,
12 also, whether we needed to establish release limits
13 for tritium and carbon-14. That option is still on
14 the table for NRC Staff.

15 One approach to help with the effluent
16 monitoring and control would be to use aged nuclear
17 fuel, spent fuel that was more than 5-years old, for
18 example, to help reduce the release of krypton-85 and
19 tritium. Although we recognize that that approach
20 found functionally help limit effluents, NRC Staff at
21 this time is not considering any sort of a regulatory
22 requirement to use specific aged fuel.

23 The releases, the dose, and release
24 criteria that currently exist would just need to be
25 met. And we're not going to specify the mechanism for

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1 meeting that.

2 Stakeholders certainly believe that any
3 requirements should be up-to-date with our latest
4 radiation protection science. And applicants would
5 not want fuel aging or siting attributes specified by
6 specific regulatory requirements. And, again, Staff
7 is not looking to establish those aging or siting
8 requirements.

9 There's certainly a desire to impose
10 reasonable limits on radionuclides due to collective
11 impacts, which is within our existing regulatory
12 framework. We recognize that siting issues are
13 important, and some of this may be very difficult to
14 make a generic statement about siting, and what sort
15 of effluents would have to be considered. We
16 recognize that we're just developing a regulatory
17 framework, and some of the specific issues would have
18 to be part of the licensing process. We won't be able
19 to resolve all concerns about siting within this
20 regulatory action.

21 Also, there's a desire that individual
22 releases should be considered, as well as the
23 collective dose issues.

24 So, I hope I've given you a fortunately
25 brief overview of where we are on the waste and

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1 environmental issues associated with waste. Our
2 objective is to establish safe onsite storage for both
3 spent fuel and high-level waste, give the applicant
4 the framework to plan for appropriate disposal
5 pathways. We need to establish confidence for longer-
6 term waste storage, and insure that the appropriate
7 treatment of low-level waste, high-level waste, and
8 effluents is occurring in the right regulatory
9 framework.

10 So, the questions that are up in the
11 handout are the last slides in the presentation. And
12 with that, I'd like to thank you for listening, and
13 open the floor to the discussions.

14 MR. CAMERON: Thank you very much, Britt.
15 That was an ambitious undertaking on all those gaps.
16 And I don't know how we want to do the discussion,
17 but before I go to Rod, you've got Jim Bresee's
18 attention with the MRS statement. And, Jim, do you
19 want to just deal with that?

20 MR. BRESEE: Yes. Britt raised a question
21 of whether the MRS exists as an ongoing activity of
22 nuclear energy, Department of Energy. It does not.
23 Let me quickly provide a little background for others
24 who may not be familiar with it.

25 The MRS, Monitored Retrievable Storage,

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1 was explicitly identified as one of the tasks under
2 the Nuclear Waste Policy Act of 1982. And by 1986,
3 that process had been carried out to a considerable
4 extent, including the identification of a site, and a
5 design sufficient to describe its characteristics
6 actually submitted to Congress, so that the process
7 had gone fairly quickly over a relatively short time.

8 It represented at that time the only hope,
9 the only reasonable hope that the Office of Nuclear
10 Energy had to meet the 1998 requirements of the law,
11 which was that the Department of Energy begin to
12 accept used fuel. And in 1987, when the Nuclear Waste
13 Policy Act was amended, that process ended, again by
14 legislation. The legislation at that time and the
15 amendment of the 1982 Act ended the Monitored
16 Retrievable Storage Program.

17 Since that time, there has been no
18 specific activities related to creating a new
19 equivalent to Monitored Retrievable Storage. There's
20 a lot of interest. You probably all have seen a lot
21 of recent legislative activities in that regard. It
22 certainly was an area that was thoroughly explored by
23 the Blue Ribbon Commission, so you can expect the
24 final report of that Commission to contain a lot of
25 very specific recommendations in that area.

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1 Incidentally, following the 1987
2 amendment, there was an office created specifically to
3 seek volunteers throughout the country to be willing
4 to establish locally a -- something equivalent to
5 Monitored Retrievable Storage, Interim Storage.

6 The difficulty with all interim storage
7 activities, and that is as much true today as it was
8 in 1982, is that there is a lack of trust,
9 understandable lack of trust of any site for interim
10 storage that it will be interim. And the recent
11 experience with the Yucca Mountain project, which had
12 gone pretty far down its pathway toward actual license
13 application, in fact submitted a license, that history
14 does not add confidence to the process of interim
15 storage being truly interim, and not de facto
16 permanent.

17 So, I'm a little -- personally, a little
18 pessimistic about the potential for that path, but at
19 least at the moment there is no specific Department of
20 Energy project to create such a facility.

21 MR. CAMERON: Thanks, Jim. And we can
22 start wherever you want to start on these issues. I
23 just don't want to mix them up.

24 MR. McCULLUM: Right. I have a process
25 proposal in that regard.

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1 MR. CAMERON: Good.

2 MR. McCULLUM: I think Britt gave an
3 excellent presentation, and it really helped
4 crystalize some of those things in my mind even over
5 reading the materials.

6 I think maybe, as we touch on each issue,
7 and I -- we can go in whatever order you want, but the
8 order they were presented, put the proposal slide up,
9 and we can react to NRC's proposal. And if it looks
10 like the proposal isn't being favored, maybe we go
11 back to the alternative slide that was -- the option
12 slide that was before that. Then you'll know when to
13 close off discussion on that issue, then move to the
14 next proposal slide. And kind of use Britt's
15 presentation to get us through this.

16 MR. CAMERON: Okay. I think that makes
17 sense. Let me check in with Tom and Susan, who may
18 have had a reaction to what Jim was talking about.

19 MR. CLEMENTS: Well, I just had a couple
20 of questions of Britt, actually. But because there
21 were some questions presented to us in the Gap
22 Summary, I don't know if you have a way to put those
23 up, but it might work just as well, as Rod suggested.

24 But I'd like to be able to ask my questions of Britt,
25 if I could.

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1 MR. CAMERON: Okay. The questions roughly
2 follow the gaps, but I think that it might be useful
3 to put, for example, the Gap 2 proposal up, and let's
4 talk about that.

5 MR. McCULLUM: Yes, you've only got three
6 questions there to cover five or six gaps. I think
7 you need to go gap-by-gap on those.

8 MR. CAMERON: Yes, I think you're right.
9 So, Miriam, if you could put Gap 2 up. And, Tom, are
10 we -- do you want to pose your questions before we get
11 into the discussion?

12 MR. CLEMENTS: Yes, just to be very clear,
13 if I could --

14 MR. CAMERON: Okay.

15 MR. CLEMENTS: -- at least ask one of
16 them.

17 Dr. Hill, you mentioned depleted uranium.
18 And I assume you were referring to the reprocessed
19 uranium stream coming out of a reprocessing plant,
20 which I think is different from depleted uranium
21 coming from an enrichment plant, as far as how it
22 should be handled and disposed of. But that's maybe
23 another issue.

24 DR. HILL: No, my mention of depleted
25 uranium was in the context of unique waste streams,

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1 and what the Commission had done for directing Staff
2 to develop rulemaking for unique waste streams; came
3 out of the depleted uranium disposal issue.

4 MR. CLEMENTS: Right, right.

5 DR. HILL: I was not trying to make a
6 generic statement about depleted uranium from
7 reprocessing. It was solely that that issue of DU
8 disposal was what prompted the Commission to direct
9 Staff for the ongoing rulemaking in Part 61 for unique
10 waste streams.

11 MR. CLEMENTS: Okay. Yes, I understand
12 that. Thank you. Is the reprocessed uranium that
13 would come out of, which I call reprocessed uranium,
14 that would come out of the reprocessing plant, could
15 you see that that is a unique waste stream?

16 DR. HILL: I couldn't make that as a
17 generic determination, because I don't know what the
18 other radionuclides would be in that reprocessed
19 material. If it was purely depleted uranium and no
20 other radionuclide, then I believe it would be the
21 same issue that we have before us with existing
22 depleted uranium, because that isotope of uranium is
23 not in the waste classification tables. And it would
24 then be considered, potentially, a Class A waste.

25 But looking at the quantity that would

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1 have to be disposed of, and how it, potentially, would
2 be disposed of could direct the Commission, if it
3 happened today, to have the same position it had on
4 the existing DU issue, of a site-specific performance
5 assessment would have to be done if the proposal was
6 to dispose of that depleted uranium in a shallow land
7 burial site.

8 So, I'm afraid I just don't know how pure,
9 if you will, that depleted uranium from reprocessing
10 might be, and whether there are other considerations
11 that would have to be met.

12 MR. CAMERON: Okay. We will go back as we
13 go through the gaps, we will go to that particular
14 gap.

15 Before we start with Gap 2, and I'm going
16 to go to Rod to do that, let me just see if Susan and
17 Mark have some issues that we should think about
18 before that. Susan Corbett.

19 MS. CORBETT: I just want to make a
20 general statement about the citizens of South Carolina
21 are very skeptical about any waste ever leaving here
22 that's brought here. Our past Governor, Dick Riley,
23 had a statement. He said, "The first law of nuclear
24 waste is it tends to stay where it was first put."
25 And I'm not sure that any waste that was ever created

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1 in the reprocessing here has ever left our state. In
2 fact, we got stuck with a bunch of stuff that we
3 weren't supposed to get stuck with, so we are
4 justifiably skeptical about any kind of new missions
5 that would create nuclear waste here.

6 When you mentioned Monitored Retrievable
7 Storage, I was reminded of when the Barnwell Compact
8 debacle was taking place, and we were supposed to be
9 part of this compact where North Carolina would take
10 their turn, and they were going to build a Monitored
11 Retrievable Storage facility for the low-level waste.

12 And we tried to convince South Carolina to do that,
13 instead of the kitty litter, dig an unlined trench,
14 dump in there and cover it up method. We thought that
15 would be preferable. And, indeed, vinyl has leaked
16 and has migrated offsite much earlier than was ever
17 expected.

18 So, we are very suspicious here of any
19 statements that nothing will be left here, and it will
20 all be gone, because we haven't seen that happen in
21 our state over the last half century.

22 MR. CAMERON: Thank you. Thank you,
23 Susan. And, Mark?

24 MR. YEAGER: Actually, Susan provided me a
25 good segue. As a regulator, and a regulator at the

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1 Barnwell facility, Mr. Hill's initial statement that
2 NRC is technical, they aren't going to deal with the
3 policy issue. And just like Susan says, there's a lot
4 of legacy waste that's been a concern to all South
5 Carolinians for a very long time.

6 And I just want to point out and go on the
7 record as saying that until the policy issue regarding
8 high-level waste is addressed, and that you have a
9 vision of where it's going to wind up, I don't know if
10 it's wise to proceed with the rulemaking dealing with
11 high-level waste storage. Because just like Susan
12 points out, what tends to be generated somewhere tends
13 to stay there. That's the historical fact. But there
14 has been improvement in waste leaving our state, the
15 transuranic waste going to Carlsbad, as an example.
16 So, it's not like things don't work, but things need
17 to be improved.

18 One of the burdens that would be put on a
19 state at the state level and the local government
20 level would be, basically, a financial burden, and a
21 psychological burden on the residents around that
22 facility that have to deal with potential emergency
23 responses to facilities that store anything long term.

24 So, I don't think you can just -- I'm not
25 saying you're being flippant, but there's definitely a

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1 link between policy and rulemaking on this issue. And
2 I don't think you can do one without another one in
3 hand.

4 MR. CAMERON: Okay, thanks. Mark, do you
5 have a -- or, Britt, do you have a quick thought on
6 that?

7 DR. HILL: Yes, just a quick
8 clarification. Do you believe that requiring the
9 Environmental Assessment as part of the licensing
10 process could address many of those concerns?

11 MR. YEAGER: I think it could, but one of
12 the concerns I have is that the Environmental
13 Assessment is done exclusively by the license
14 applicant. I think each part of it should be done
15 jointly. Each part of it should be submitted in
16 pieces.

17 MR. CAMERON: Now, just to clarify that,
18 though, the license applicant's document is typically
19 called the Environmental Report, the ER. Is that
20 correct? And the EA is something that the NRC would
21 do initially on the basis of the license applicant's
22 ER.

23 MR. YEAGER: I was using lower case A, not
24 capital A for that.

25 MR. CAMERON: All right, thank you. Thank

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1 you, Mark. Derek, before we go to Gap 2, do you want
2 to say something?

3 MR. WIDMAYER: I just wanted to react to
4 what Mark said. I understand where you're coming
5 from, and I recognize that we have a lot of policy
6 issues that need to be taken care of.

7 My reaction to what the Staff put together
8 from a technical basis is, I think they can make these
9 decisions on a technical basis. I think they can do
10 this regardless of the fact that there may be --
11 there's waste where there's no path. I recognize
12 that. But I think they could, given this framework,
13 make these decisions on a technical basis.

14 MR. CAMERON: Okay. And finally, Mary,
15 sort of an overall comment. This is Mary Olsen.

16 MS. OLSEN: I just want to revisit briefly
17 the parking lot item, and I apologize that I don't
18 have the materials with me. But NRC Staff came up to
19 me in the break and said well, there's generic EISs.
20 And those go with generic rulemakings, like the
21 ISFSIs, and the generic licensing. And I think a
22 programmatic EIS is different, because it actually
23 would encompass the kind of question that Mr. Yeager
24 just brought up.

25 I mean, programmatic means cradle-to-

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1 grave. And it would not only include the huge super
2 theme park of rulemaking that's being proposed by NEI
3 as a single rule, it would include the licensing of
4 the reactors, and what happens to the fuel that comes
5 out of those reactors. It would include everything,
6 cradle-to -- uranium coming out of the ground to
7 whatever the hell anyone is going to do with the
8 irradiated MOX fuel.

9 I'm sorry, you're right. I'm being bad.
10 But I just wanted to throw in here the fact that I
11 think that the reason this is so important is that
12 we're talking about not wanting to slice off impacts.

13 Right? We're really here talking about this whole
14 picture together. And we have work that solidly shows
15 that the impact of a major accident like Chernobyl, or
16 like Fukushima with plutonium fuel in the core, is a
17 disproportionate impact compared to uranium fuel in
18 the core.

19 It is proportion to the amount of
20 plutonium that's in the core, but this is the kind of
21 issue that would get addressed in a programmatic EIS
22 that was part of this whole matter of regulating the
23 process at all.

24 So, I just want to point out that I really
25 don't know enough about France. I think we know it is

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1 a democracy, we know it's socialist, but do they have
2 the same provisions in their constitution? We say we
3 provide equal protection under the law, so if you know
4 you're going to increase the risk to communities
5 disproportionately, how are you going to address that?

6 How are you going to say, at least in your paperwork,
7 that you've doubled the safety if you're doubling the
8 risk?

9 MR. CAMERON: I think that we could
10 legitimately put the French constitution in the
11 parking lot.

12 MS. OLSEN: I think so, too, but I don't
13 think we should put our constitution in the parking
14 lot.

15 MR. CAMERON: All right.

16 MS. OLSEN: And I'm just saying that I
17 think that these are -- the whole ball of wax, you
18 know, you say you're getting at the whole ball of wax,
19 but really your programmatic EIS would get at the
20 whole ball of wax.

21 MR. CAMERON: And did you use the term
22 "rulemaking theme park?"

23 MS. OLSEN: I did.

24 MR. CAMERON: That's good, Mary.
25 (Laughing). Whether you call the EIS programmatic or

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1 generic, the threshold issue is whether there will be
2 an Environmental Impact Statement done on a
3 rulemaking. And I think that by its very nature, any
4 EIS on a rulemaking that covers all these subjects is
5 going to accomplish what I think you want to see
6 accomplished.

7 MS. OLSEN: Reactor licensing, too?

8 MR. CAMERON: But we can do that. We can
9 talk more about that when we get -- so, should we go
10 to Gap 2? Do you want to lead off?

11 MR. McCULLUM: Yes, I'd like to go on one
12 of the specific rides in the rulemaking theme park, if
13 I could.

14 MR. CAMERON: You want to go on one of the
15 rides? Okay.

16 (Laughter.)

17 MR. CAMERON: And what do you call it?

18 MR. McCULLUM: Gap 2.

19 MR. CAMERON: Gap 2. Okay.

20 MR. McCULLUM: It's a lot of fun, kids
21 love it.

22 (Laughter.)

23 MR. McCULLUM: I just want to go on
24 record, and we will endeavor, industry to provide you
25 some written comments more specifically, but we oppose

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1 the proposal to do a rulemaking in Part 72. This goes
2 back to what John Greeves had said earlier, we want a
3 holistic comprehensive regulation for the recycling,
4 reprocessing, plutonium green washing, whatever
5 facility it is.

6 And, in fact, a couple of reasons for
7 that, as we are discovering between Part 50 and Part
8 72, and I know NRC Staff that works in those areas is
9 trying to work out some of the interface issues.
10 There's a thing called "stack-up" that occurs in the
11 loading inside the Part 50 with a Part 72 cask.

12 If you try to put -- if you try to do a
13 rulemaking in Part 72, you're going to create
14 interface issues. Also, the nature of reprocessing,
15 you have materials in process streams, and then they
16 pause for a while, and then they go through more --
17 so, the question of when is it in process, does it
18 jump back and forth between Part 72 space and Part 7x
19 space? It's just much cleaner to have a holistic
20 regulation where everybody can understand what's
21 needed to assure safety.

22 Also, Part 72 will probably be undergoing
23 changes from other directions. It has to look at
24 extended storage now. Staff has a separate initiative
25 on that. And it also has -- there's a staff initiative

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1 on near-term improvements to the Part 72 framework.
2 So, that would probably be more changes than it could
3 bear. We, again, would vote for the holistic approach.

4 And one last, before I get off the ride
5 and the thing goes up here, there is a question here
6 on should NRC limit the amount of spent nuclear fuel
7 that can be stored in the facility? That's a policy
8 question, and also a business question. I know AREVA
9 has proposed a pilot facility, others might propose
10 bigger facilities, but whatever facility anybody
11 proposes, or the government might mandate as a matter
12 of policy, they need to show that they can meet the
13 regulations.

14 If you put a regulation in that
15 holistically describes what it takes to assure safety,
16 I want to propose an 800 metric ton a year facility
17 that stores up to 2,000 tons, or I want to propose a
18 900 metric ton facility that stores up to 20,000 tons,
19 it's up to me to show that with that amount I meet the
20 regulation. And one of my options is, is that if it
21 looks like I can't meet the regulation, is I go for a
22 smaller license. So, I don't think that's something
23 that should be prescribed by regulation.

24 MR. CAMERON: Okay. Thank you, Rod. Let
25 me just ask Britt and Wendy, on this Gap 2, Rod was

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1 talking about some of the moving parts here. The
2 substantive issue in Gap 2 is what to do about the
3 storage -- I mean, forget how the process works, it's
4 what to do about -- how do you deal with the storage
5 of the high-level waste, not to spent fuel, but to
6 high-level waste? Could you just elaborate on that
7 for our participants?

8 DR. HILL: Well, there is a spent fuel
9 storage issue, as well, and what sort of material
10 would be coming into this new installation. And then
11 what material the high-level waste storage on the back
12 end, that's a little more vexing problem in the sense
13 the high-level waste storage is a little more vexing,
14 because we just don't have any regulatory framework
15 right now for dealing with that.

16 It's all -- the intent of the Nuclear
17 Waste Policy Act was the Department of Energy would
18 operate a storage installation for high-level waste,
19 mainly because well, it was only envisioned at that
20 time that the Department of Energy would do
21 reprocessing. But we are now sitting here almost 30
22 years later, and we're looking at the commercial
23 storage, and the commercial production of high-level
24 waste as being expressed as an intent to the
25 Commission.

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1 So, we're looking at this within our
2 existing regulatory framework. If we are going to
3 promulgate changes to Part 72 because there are
4 certain storage requirements that are needed for
5 longer term safety, or longer term inspection process,
6 using the 72 regulatory framework allows us to
7 propagate those changes for existing license holders
8 under Part 50, as well as another potential license
9 holder, anybody that has that general license, or a
10 specific license for the storage of spent nuclear
11 fuel. Rather than if you say, just to speculate, in
12 the future you wanted to change Part 72 for longer
13 term storage requirements then you would need to go
14 back, and if you had incorporated those requirements
15 under 7x, you'd also have to do a rulemaking under
16 Part 7x to accommodate that, as well.

17 So, you end up with the same requirements
18 in different regulations, rather than granting
19 authority from a single regulation out to specific
20 licensees, which is our current approach for general
21 license for nuclear power plants.

22 MR. CAMERON: And let me just go to Rod
23 quick. Did you want to say something in regard to
24 what Britt was saying?

25 MR. McCULLUM: Yes, I think that --

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1 MR. CAMERON: Because I want to make sure
2 that everybody understands what the issue is.

3 MR. McCULLUM: Yes, I think you talk about
4 the issue of spent fuel, and you still have Part 72.
5 And, certainly, a commercial entity that wanted to
6 reprocess would have the option of building a Part 72
7 facility over on Acre One, and then on Acres Six
8 through Eight, building a reprocessing facility. It
9 could receive spent fuel at its Part 72 facility. Once
10 the spent fuel went inside the reprocessing facility,
11 it would go under Part 7x, and it would stay there.
12 They could not then send the high-level waste back to
13 the ISFSI, but the way La Hague is configured, they
14 have a building that stores high-level waste. It's
15 licensed. Well, they have a much simpler regulatory
16 framework, the analogy breaks down.

17 As far as having to do multiple
18 rulemakings to do the same thing, I think that's less
19 problematic for addressing the spent fuel. Once it's
20 inside the Part 7x facility, you can take the
21 regulations from Part 72 and just cut and paste some
22 of the same sections in there; and yes, you have a
23 change control issue that every time you have to make
24 sure that they conform, but I think that change
25 control issue is less significant than the issue that

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1 would occur for the folks who have to operate the
2 facility, folks who have to actually be safe, when
3 they have to be making decisions as to am I in Part 7x
4 territory, am I in Part 72 territory, am I in process
5 now, or because I set this container -- it's between
6 two parts of the process now, am I in storage space
7 again? How long I store it.

8 From the standpoint of the facility
9 operator, the holistic regulation is the only way to
10 go. And Part 72 should stay in force, and we should
11 have the option to build a Part 72 facility next door,
12 if that's the way they want to operate.

13 MR. CAMERON: Okay. So, one part of this
14 is what's the most efficient way to build the
15 regulatory framework.

16 MR. McCULLUM: Yes, it's efficiency, and
17 the best way to assure safety. Because questions
18 about where you are in the regulatory framework make
19 it harder to assure safety, not easier. And when you
20 build those questions in by having two regulations
21 inside the same facility, that's not good regulation.

22 MR. CAMERON: And is there also an issue
23 besides how you build the regulatory framework, in
24 terms of the high-level waste, not the spent fuel, but
25 however you build that regulatory framework, you need

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1 to address the question of what criteria you're going
2 to use to regulate that high-level waste.

3 Go ahead, Derek.

4 MR. WIDMAYER: Yes, I -- as far as the
5 waste management gaps that Britt was going to bring
6 up, this one seemed to me to have the most challenges.

7 The two questions, one and two, that he asked at the
8 end from a technical standpoint, Staff considers
9 storage of high-level waste not significantly
10 different from the storage of spent nuclear fuel. And
11 their bases for that is from 1986, and I don't know --
12 I felt like it was problematic that that same
13 conclusion would be drawn today, and that you'd have
14 an easy time justifying that that conclusion was one
15 that you could technically justify.

16 And then the second one, I also have an
17 issue, or I think it's a challenge to consider that
18 you could store high-level waste under a general
19 license based on, basically, the conclusion that
20 you've drawn in number one. So, I felt like this one
21 was an area where you have a lot of challenges, as far
22 as the gaps.

23 I understand where your thinking is coming
24 from, but I'm not sure that you'd be successful in
25 going down this path.

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1 MR. CAMERON: And, Mary? Thanks, Derek.

2 MS. OLSEN: One quick little correction
3 of something I said earlier, just for the transcript.
4 I called MOX fuel twice as hazardous, and I think
5 it's actually -- I mean, I called it twice as
6 dangerous. I think actually the word would be
7 "hazard," because what I'm talking about is latent
8 cancer fatalities. That is the issue, is that more
9 cancer is engendered if you have a major reactor
10 accident with MOX fuel. So, I just want to be clear
11 that that's what I was talking about.

12 But I'm having my eyes crossed right now,
13 and I know it's because maybe I really like rules.
14 And I like knowing what they are, I like knowing how
15 they work. And somehow in this whole little bit of
16 history, I've gotten really envious of those
17 contracts, and I want a contract, because those waste
18 contracts are driving this whole picture. So, I'm
19 like really trying to struggle over here, and maybe
20 someone at the table could walk me through how those
21 contracts work in this picture.

22 I mean, if DOE picks up the waste, then
23 the contract is executed, and they're just going off
24 the map, and they are not disposing until afterwards.

25 And then like then there's all this waste that's

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1 sitting there that you're talking about storing, and
2 it's got to have a path forward. And it's going to
3 have a place it's going to go. And I assume that some
4 of it is going to be into a new repository program,
5 because everybody is talking about that at BRC.

6 But like what -- I thought those contracts
7 were to insure that the plutonium generated would not
8 end up on the open market. That's why I defend those
9 contracts, and I do. I have friends who wanted to
10 stop having contracts, that the new reactors shouldn't
11 have them any more, that it's wrong that the taxpayers
12 should take responsibility for the waste that's
13 generated. And I actually defend those contracts, but
14 today I can't even follow where they are. What the
15 hell happens with those contracts? Somebody explain
16 it.

17 MR. CAMERON: Well, there's two issues
18 here, and one is about what's going on with the
19 contracts, generally. And maybe someone can give us a
20 real quick summary on that. But there's the other
21 issue, what are the implications for the contracts, if
22 any, from a reprocessing facility that has spent
23 nuclear fuel and resulting high-level waste from
24 reprocessing? Are there any --

25 MS. OLSEN: Let me just help. Like who

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1 has the contract? Like if you've generated high-level
2 waste that's supposed to be disposed, is there a
3 contract? And, if so, who has it? And what happened to
4 the old contract? I'm lost.

5 MR. CAMERON: Britt, do you want to -- can
6 you talk to this?

7 DR. HILL: Yes, Mary, you're raising some
8 really challenging questions about -- they would
9 involve legal interpretations that I'm just not
10 qualified to give.

11 I can say, though, that I'm familiar with
12 the Nuclear Waste Policy Act that has provisions in it
13 that any producer of high-level waste, and it doesn't
14 mean just the Department, but it says any producer of
15 high-level waste will enter into a contract with the
16 Secretary of Energy to contract for the disposal of
17 that high-level waste with a fee to be established
18 based on, I forget the exact details, but there is a
19 basis in the NWPA for how you would establish the
20 disposal fee for the production of any high-level
21 waste, which would be resulting from reprocessing.

22 So, I can't answer all of your questions,
23 but the sense of the disposal fee you would have to
24 have a standard contract in place if you're going to
25 produce high-level waste. That contract would be with

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1 the Department of Energy, and the fee to be
2 established as part of the contractual process.

3 MS. OLSEN: Just one quick follow --

4 MR. CAMERON: Let's --

5 MS. OLSEN: Okay.

6 MR. CAMERON: For a minute, let's go to
7 Greeves, John Greeves, and see if we can put some more
8 light on this, and then go back for questions.

9 MR. GREEVES: I respectfully submit we're
10 off the page. The contracts can go in the parking
11 lot. It's going to get in the way of us talking about
12 this gap. And the gap is about independent storage.
13 The questions were, should we do a general license?
14 And there's been some voice that no, we think the best
15 thing to do is comprehensively have the ability to
16 address storage within 7x.

17 The only really new piece is the glass,
18 the storage of spent fuel glass, so somehow we do need
19 to cover that. But it isn't really entirely new,
20 because the Commission has already been looking at
21 that issue. So, I think we're asking for 7x to address
22 that totally, and it'll take time.

23 MR. CAMERON: And I don't -- it may be
24 that the contract issue is something that we should
25 talk about offline, but I just want to make sure, and

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1 try to give Mary some information. I just want to
2 make sure that, what the implications are, if any,
3 from the contracts for the regulation of reprocessing
4 facilities. And Rod --

5 MR. McCULLUM: Yes, I can't answer that.
6 I'm not a lawyer, but I've stayed in many Holiday Inn
7 Expresses in my life. And, also, this comes from the
8 lawyers at NEI. All of the contracts, as they've
9 drilled it into me many times, all of the contracts
10 are still in force. The courts have ruled that DOE is
11 in partial breach of those contracts, meaning DOE is
12 liable for damages.

13 Those damages are being handled in two
14 ways. The courts are litigating, and utilities are
15 being paid for their damages. And, of course, the
16 longer DOE waits to pick up the fuel, the more they
17 get damaged. There are several utilities that have
18 settlements whereby they send DOE a bill every year,
19 and that gets in an arbitrated situation for their
20 damages.

21 In no case is the contract -- well, if the
22 contract is fulfilled, you mentioned the taxpayers on
23 the hook. The taxpayers are only on the hook when the
24 contract is not fulfilled. If DOE fulfills the
25 contract, that's all paid for by the Nuclear Waste

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1 Fund that was paid for by the consumers of nuclear
2 electricity through their bills. If you live near a
3 nuclear plant, or in the nuclear service territory,
4 you have paid into the Nuclear Waste Fund.

5 The taxpayers only end up on the hook when
6 DOE is assigned damages. The damages come out of
7 something called the Judgment Fund, which is paid by
8 the taxpayers.

9 In no case is any of this a Part 7x issue,
10 however, because those contracts will continue to
11 remain in force. And the contract holder may transfer
12 the waste to DOE, and DOE may become the customer of
13 the reprocessing facility. The contract holder may
14 commercially reprocess, and still be responsible for
15 the waste until DOE starts making good on the
16 contracts. Either way, that contract relationship
17 stays in place. Even if you overturn the Nuclear
18 Waste Policy Act, you can't by law overturn the
19 contracts. And there's an industry lawyer in the room
20 to keep me honest here.

21 MS. OLSEN: Therein lies my contract envy.

22 MR. McCULLUM: Well, yes. Exactly. So,
23 this is clearly not a Part 7x issue. It really
24 depends on the business model for the reprocessing
25 facility, and how -- who the customer is, and how that

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1 customer addresses his or her, its contractual
2 situation with DOE.

3 MR. CAMERON: Okay. And with your
4 forbearance, Mary and possibly with Don Silverman's
5 assistance, perhaps you could talk about this a little
6 bit offline about some of the contract issues.

7 MS. OLSEN: I was just going to offer that
8 my business cards are here, and if anybody has
9 anything to contribute on this subject, we will leave
10 it now, but, obviously, I'm very interested.

11 MR. CAMERON: Contract envy and rulemaking
12 theme park. You put these on there? Okay.

13 Britt, Wendy, what else do you need to
14 know on Gap 2 before we go on to another gap? Have
15 you heard enough? Does anybody have anything more to
16 say on this? Let's go to Tom.

17 MR. CLEMENTS: I'm just kind of confused,
18 given that the Blue Ribbon Commission is going to be
19 making some recommendations, and we've already seen
20 two of the three subcommittees, and the draft
21 recommendations. And some of those draft
22 recommendations are for one or more consolidated
23 interim storage sites.

24 Just revealing my ignorance, I'm not sure
25 if they were only talking about spent nuclear fuel, or

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1 if they speculated on high-level waste, vitrified
2 high-level waste coming from a reprocessing plant.
3 So, do you think there's going to be impact for a
4 consolidated interim storage site on the high-level
5 waste, vitrified high-level waste end of things. I
6 mean, if the material were stored longer on the front
7 end, I guess there could be some impact there, too.
8 But I would suspect that there's going to be impact on
9 NRC rulemaking and DOE policy from what the BRC
10 recommends.

11 And we have this discussion, it's really
12 becoming clear if we're following what is Appendix F
13 of Part 50, that the material will be removed from the
14 site after 10 years, and I know there's been a
15 newspaper article that AREVA wants to get to
16 discussions about a reprocessing plant in 2015, have
17 it operating in 10 years; that there's going to be an
18 impasse on operating that facility if there's no
19 geologic disposal. They're not going to be able to
20 store longer than 10 years if that Appendix stays in
21 place.

22 But just in general, do you get a feel of
23 what BRC is going to require you to do, or what are
24 you preparing to do from their recommendations?

25 DR. HILL: Well, just to make sure

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1 everybody clear, the Blue Ribbon Commission on
2 America's Nuclear Future is a Federal Advisory
3 Commission to the Department of Energy. We would have
4 to wait and see if there was any change to the
5 national legal framework before we would take any
6 direct action, absent the Presidential Directive or
7 something else to that effect.

8 The best that I can understand the initial
9 recommendations from the subcommittees which have been
10 published, would be first, that the BRC is
11 recommending that a new entity be created to solve the
12 whole back end of the fuel cycle problem. So, the
13 nature of that entity could be private, semi-private,
14 semi-public, or even governmental.

15 I guess we don't know what they're going
16 to propose in terms of the final, should this be a
17 public entity, or a semi-public entity. But right
18 now, if they go forward with a centralized interim
19 storage recommendation, our regulatory framework is
20 already in place for a private or darned near any
21 entity to ask for licensing authority for interim
22 storage, private or public. We have the existing
23 regulatory framework, so I don't see any specific need
24 for spent fuel.

25 You asked, though, about high-level waste.

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1 I don't recall if the BRC really specifically talked
2 about high-level waste storage, given that they have a
3 fairly neutral stance on reprocessing. I don't think
4 that's prominent in their thinking. But they're
5 driving concern that they expressed was to at least
6 begin to address the spent fuel that's at commissioned
7 reactor sites, is their highest priority. And that was
8 what they cited as their driver for moving to
9 centralized interim storage.

10 So, the simplest answer I can give at the
11 end of all that is that we don't see an immediate need
12 to respond, because that key BRC recommendation for
13 centralized storage already can be accommodated within
14 the existing regulatory framework.

15 MR. CAMERON: Okay, thank you, Britt.
16 Let's have one more comment from Sven, and then let's
17 go to Gap 3.

18 MR. BADER: Unfortunately, mine is going
19 to be more of a question than a comment. And the
20 process you were saying, there's not a whole lot of
21 U.S. experience regarding high-level waste storage.
22 And, clearly, I think DOE would probably say that's
23 not true. La Hague is another example of where we have
24 waste storage.

25 But when I was thinking about DOE, I was

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1 thinking, if you want to modify Part 72 to include
2 high-level waste, would you be clear that that would
3 be from a recycling facility, or could that also be
4 DOE waste?

5 DR. HILL: Well, I think, certainly, our
6 intent would be for commercial reprocessing. We do not
7 regulate the storage of Department of Energy defense
8 activity waste. The disposal aspect is a unique
9 requirement from the Nuclear Waste Policy Act, but we
10 would not be talking about storage of Department of
11 Energy high-level waste. That's not within the scope
12 of our activities.

13 MR. CAMERON: Okay, thank you. Gap 3,
14 perhaps a little bit -- all of this takes place in a
15 larger context, but maybe this is a little bit more
16 straightforward. This is Incidental Waste.

17 Go ahead, John.

18 MR. GREEVES: Again, the questions that,
19 if I have them right, suggested approaches. Actually,
20 you have three. One is seek relief from Congress.
21 Number two is promulgate a regulation clarifying the
22 meaning of highly radioactive and sufficient
23 concentrations. And three is, no action.

24 And I'm speaking for myself, but I think
25 two of them don't work. No action is not acceptable.

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1 We've got an issue with this definition. And two,
2 seeking relief from Congress, my experience is that's
3 not going to be a path either.

4 MR. McCULLUM: I think that's a concept
5 every single stakeholder can agree on here, is that
6 Congress is not qualified to make that decision.
7 That's why we have an NRC.

8 MR. GREEVES: So, my overall point is, I
9 think your approach number two, promulgate a
10 regulation that defines what is highly radioactive and
11 insufficient concentrations. Easy to say, hard to
12 implement, but I'm a little bit struck by what Britt
13 went through with the complexity of trying to do that
14 for a -- I'm going to call it a 7x vehicle. I don't
15 want to offend anybody by calling it a recycle
16 facility. The 7x facility, I understand the concept
17 where you might want to just go as far as a facility
18 that only handles the material, doesn't dispose it.
19 But, ultimately, you, the Commission, you're going to
20 have to answer both pieces of this, the disposal piece
21 and the handling piece.

22 And the NEI White Paper put forward some
23 recommendations, and in due course I'd like to hear
24 what your reaction to those were, that tried to
25 address both the definition at the facility, and

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1 enough context to help you frame how it affects that
2 facility once it gets to the disposal facility. But
3 full circle, your approach number two, I highly
4 endorse that one.

5 MR. CAMERON: Okay. Thanks, John. Let's
6 go to Derek, and then Tom, and Mary. Derek, on this
7 issue, Gap 3.

8 MR. WIDMAYER: Yes. I concur with John as
9 far as Options 1 and 3. And I prefer that NRC do
10 something to solidify a definition. I was thinking
11 along the lines of the fact that this gap relates to
12 some of your other gaps, where you're trying to figure
13 out what to do with depleted uranium, or NRC is trying
14 to figure out what to do with it. NRC is trying to
15 figure out what to do with blended low-level waste.
16 NRC is trying to figure out what to do with other
17 apparently unanalyzed low-level waste streams. And
18 now we have the in-between low-level waste and high-
19 level waste streams, so it screams to me that we need
20 a sort of a holistic look at this whole radioactive
21 waste problem.

22 I don't know whether the Blue Ribbon
23 Commission is going to provide us that opportunity or
24 not. Given that you're kind of between a rock and a
25 hard place, I think you should go ahead and make this

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1 definition, but then you're still going to end up with
2 a little bit of this, and a little bit of that that
3 has no place to go. But, anyway, that's my feeling
4 about that one.

5 MR. CAMERON: Before we go to Tom and
6 Mary, do you want to respond to --

7 DR. HILL: Just very briefly, I think the
8 governing problem we have, or the concern is, we have
9 this statutory definition for high-level waste that is
10 specific to reprocessing, as opposed to the larger
11 issues in Part 61 from all different sorts of waste
12 streams, and the concentration issues, and the
13 identification of radionuclides issues.

14 So, I certainly agree that we're not going
15 to solve the entire spectrum of that problem in Gap 3,
16 but we are very focused on resolving a functional
17 implementation of our statutory definition in a way
18 that is consistent with the statutory definition of
19 low-level waste, which is well, low-level waste is a
20 material that isn't anything else like high-level
21 waste. So, that would be the distinction, I just want
22 to make sure everybody is aware of.

23 We have got a source-based definition in
24 the Nuclear Waste Policy Act, and with that source-
25 based determination we need to have a responsible

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1 basis to say what are the materials that need to be
2 disposed of geologically versus another disposal
3 pathway.

4 MR. WIDMAYER: And that's why I mentioned
5 the Blue Ribbon Commission. I don't know if they'll
6 afford you the opportunity to have legislative changes
7 that -- we'll see where that goes.

8 DR. HILL: Well, certainly, the Blue
9 Ribbon Commission's recommendations would need
10 legislative implementation.

11 MR. WIDMAYER: Right.

12 DR. HILL: And that always presents an
13 opportunity for change. But the time scale for that
14 change, and the priority for that change is something
15 we just don't have an insight on.

16 MR. CAMERON: Okay, thank you. Let's go
17 to Tom, and then Mary, and we'll come back to Rod and
18 John, perhaps. Tom?

19 MR. CLEMENTS: Well, on the waste
20 incidental to reprocessing issue, as people can well
21 imagine, we're quite sensitive to that here in South
22 Carolina, because the State of South Carolina -- well,
23 we're in Georgia now, but in the region, South
24 Carolina and Idaho, as you know, where the tank
25 waste was defined as certain parts of it to be waste

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1 incidental to reprocessing. And what we're going to
2 end up with at Savannah River site, and my numbers are
3 not quite right, but more or less 50 large, very large
4 tanks with a grouted waste incidental to reprocessing
5 left on site, millions of gallons with several million
6 curies of radiation. If anybody wants to see it, I
7 have a picture of some of these tanks here, the salt
8 waste.

9 So, we would be quite concerned, and I was
10 -- it was encouraging to hear Dr. Hill saying that no
11 waste incidental to reprocessing would be left on
12 site. And this gets back to a point I raised earlier,
13 what is the site?

14 Is the industry pushing the reprocessing
15 plant going to claim the DOE site is the site that's
16 being looked at? And this gets back to the EIS issue.

17 There's going to be -- if Savannah River site, say,
18 were to -- if someone is proposing to locate a
19 reprocessing plant at Savannah River site, there, in
20 my opinion, would need to be a sitewide Environmental
21 Impact Statement not only relating to the waste and
22 the operation of that plant, but how it interacts with
23 waste streams and management of other parts of the
24 site.

25 It's going to get complicated. That would

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1 be a DOE-NRC document. And, at this point, I think we
2 would insist that such a document be prepared. That's
3 another complication. But I think that high-level
4 waste is already defined.

5 I would be more comfortable here in South
6 Carolina if the WIR law did not exist, and all of the
7 wastes were being vitrified, but I do see that there's
8 some limitations on processing all the material that's
9 here, and how you handle the tanks, which are going to
10 be grouted and closed in place. But it's a nightmare
11 here, and I totally support what you have said, that
12 the WIR waste would not remain at the site.

13 But the question is, would AREVA or
14 another company try to claim that the largest DOE site
15 was not the site. And I think we're going to have
16 some argument over that, but it's something the NRC
17 should clarify in its regulations, if you are looking
18 at a DOE site kind of as a sub-site, or if you totally
19 don't care if it goes 100 yards away, and it's on a
20 DOE site.

21 MR. CAMERON: Is there a little bit of a
22 confusion about the reference to DOE site here?

23 MR. WIDMAYER: Only in the context of what
24 Tom was just saying, in the sense that it sounded like
25 he's -- I'm not keeping up with the news, I guess, but

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1 he seems to think that the reprocessing facility
2 that's being discussed here is going to be sited at a
3 DOE facility?

4 MR. CLEMENTS: Well, just me -- it's quite
5 possible, because under the GNEP proposal, a
6 reprocessing facility was proposed by one entity at
7 the old Barnwell plant, which is right adjacent to the
8 Savannah River site. And for the Savannah River site,
9 itself. And from what I see here, there is effort to
10 put some pieces together, including with the MOX
11 plant, consolidated interim storage, and locate a
12 reprocessing facility after R&D is done at the
13 Savannah River site itself, with a goal to use
14 infrastructure, personnel.

15 As I mentioned earlier, Shaw AREVA
16 proposed that the boundary for the MOX plant and their
17 radiation, the dose was the Savannah River site
18 boundary, not whatever, 50 yards away from the plant
19 itself. And they lost on that, and I think we may see
20 the same thing if the industry were to propose a
21 reprocessing plant at Savannah River site, or another
22 DOE site.

23 MR. CAMERON: Okay. So, let's let the
24 record reflect that what Tom is talking about is if
25 this reprocess -- if a reprocessing facility was

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1 located on a DOE site, there's also the other point
2 that he's making referring to something that Britt
3 said about none of this waste incidental to whatever
4 you call it is going to remain at the reprocessing
5 site.

6 And a further generic issue, getting back
7 to the EIS, again, is that -- and apropos of what Mary
8 was talking about, the scoping process for that EIS,
9 the preparation of the draft EIS, is going to be very
10 important, because people are going to have a lot of
11 different ideas about what should be within the scope,
12 what alternatives, what impact should be looked at.
13 So, that was a good comment, Tom.

14 Now we're going to go to Mary, and then
15 we're going to jump over to Rod, who's been waiting a
16 while. And then we'll see who else wants to talk on
17 this. Mary, still on Gap 3.

18 MS. OLSEN: Yes, I have just a couple of
19 WIR comments. One is that we were very actively
20 involved opposing the legislation that Tom mentioned.

21 And I believe we have a number of technical resources
22 in terms of calculations that were done at that time
23 that I'll provide to Staff as a resource for you to
24 see what our independent expert said about the wastes
25 that were classified WIR in the DOE world.

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1 But I want to bring up a different aspect
2 of WIR, Waste Incidental to Reprocessing. And this
3 has to do with a 1969 event that resulted in an
4 underground plume of radioactivity at West Valley.
5 The plume is moving towards Cattaraugus Creek, which
6 flows through the Seneca Nations Reservation, and then
7 into Lake Erie.

8 They are taking remedial action. The
9 estimate is \$1.2 billion, and they put in a wall of
10 zeolite. Now, I've heard of people afraid of
11 radiation taking zeolite internally, but this is the
12 more sort of institutional zeolite, internal, sticking
13 it in the ground to hopefully absorb mainly the
14 strontium-90, I believe is the major focal point.

15 Anyway, they're not planning on taking
16 that zeolite out. They are planning on this being
17 their reaction to this problem, but it's actually
18 going to be waste incidental to reprocessing at that
19 site, because they're just trying to immobilize it
20 where it is, but not remove it.

21 So, I just want to bring up this little
22 bit of reprocessing history, and mention that there's
23 more than one way to deal with a problem, and not all
24 of it has to do with removing the problem.

25 MR. CAMERON: Thank you, Mary. Rod, and

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1 then John, and then maybe we'll try to do the next gap
2 relatively non-controversial waste confidence.

3 MR. McCULLUM: I was actually going to try
4 to summarize. I think what NRC is proposing here is
5 consistent with Option 2, that they seek to do what
6 is, indeed, within NRC's purview, which is to define
7 highly radioactive and sufficient concentrations in
8 terms of what can be disposed of in accordance with 10
9 CFR Part 61.

10 I think Britt said I believe we have a
11 source-based, I call it origin-based. Source even
12 gives it more credibility. It shouldn't be where the
13 waste came from, it should be what is its hazard, what
14 does it contain that should drive how it's dealt with.

15 And I think when Congress writes a law and
16 says things like highly radioactive and sufficient
17 concentrations, there's an expectation that the
18 competent regulatory agency will define what those
19 things mean. And I think NRC's proposal does that.

20 Given that it does that, given that I
21 think NRC can look at what could be disposed of as
22 low-level waste, there's a specific question for
23 public comment here that probably no longer apply. I
24 don't believe applies any more, which is what waste
25 disposal option should NRC consider for the management

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1 of waste generated. That's a policy question.

2 NRC does not need to consider waste
3 disposal. If NRC, as they proposed, considers the
4 hazard, if it's this hazard, it can be disposed of in
5 Part 61, if it's not this hazard, it requires geologic
6 disposal. Then there's another part of NRC that's
7 going to make a new regulation for geologic disposal,
8 because there's no more Yucca Mountain. And again, the
9 nation will make a policy decision as to where we're
10 going on disposal.

11 So, I think the path that's been outlined
12 here is a pretty good one, and I think it can be made
13 independently of what disposal policy choices need to
14 be made.

15 MR. CAMERON: Okay. Let's go to John, and
16 Mark, and Susan, and then we'll close this gap off.

17 MR. GREEVES: This is -- I'll do it
18 quickly. I think it's a little repetitive, but Britt,
19 you talked about the source-based. Well, yes, it
20 started out as a source-based definition. It moved in
21 the direction of a hazard-based definition under the
22 Nuclear Waste Policy Act of 1982, because that's where
23 you will find the language "sufficient concentrations
24 and other highly radioactive materials." So, you
25 have, I think, the authority to build on that

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1 departure from solely a source-based definition to a
2 hazard-based approach. And, at this point, I think
3 the recommendation that the White Paper put forward is
4 define what is sufficient concentrations in highly
5 radioactives.

6 I think you have that available, so your
7 approach number two, repeating myself, is recommended.

8 And I think there are ways, and Derek said it a few
9 minutes ago. This is actually integrated to your
10 waste classification gap. The effort the NRC Staff is
11 going through to address the waste classification
12 system backs into this one, and can, I think, give you
13 a tool to define what sufficient concentrations are.

14 And it actually, in my opinion, does build
15 on what Congress did in Section 31-16, which was
16 referred to earlier. It's the 2005 National Defense
17 Authorization Act. And in there is language that we
18 put forth in the White Paper that defines, or proposes
19 what you could do to define what is sufficient
20 concentration. So, hopefully -- it's more than we can
21 do here, but Jim Lieber and I did a paper on this some
22 time ago, and I think you have access to that.

23 MR. CAMERON: And we're going to go to
24 Mark, and Susan, and I think Britt wants to respond
25 here. But maybe logically it makes sense to go to

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1 talk about the waste classification gap next, since it
2 seems to be related. And then take a break, and come
3 back and do waste confidence, and effluents. So, let's
4 do that.

5 Britt, did you have something to say to
6 John about his comment?

7 DR. HILL: Well, a number of commentators.
8 We're all talking about WIR. NRC Staff is very
9 sensitive to the issues associated with WIR that are
10 occurring at the legacy sites. And that has been a
11 lot of our struggle internally in remaining aware that
12 anything we propose has the potential to affect WIR.

13 We're trying to come to come to a sensible
14 classification scheme where we're not automatically
15 requiring low activity waste to be disposed of in a
16 deep geologic repository that doesn't exist, but still
17 insure that we have a protective approach for the
18 highly radioactive materials.

19 It is that tension between the existing
20 issues at the legacy sites and a sensible, practical
21 implementation that is causing us to just not adopt
22 the existing definition in 31-16 Section of the
23 Defense Authorization Act, because there is no intent
24 in any of these existing statutes or legislation. We
25 just don't have that removed to the extent practical

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1 issue. It's a much simpler issue for us. And we just
2 don't want to promulgate language that further
3 confuses WIR from legacy sites with the waste streams
4 from a future reprocessing site.

5 MR. CAMERON: Okay, thank you for that
6 clarity on that. And, Mark, and then we'll go to
7 Susan.

8 MR. YEAGER: Britt, I just wanted to ask
9 if you have considered as part of your approach, as
10 far as incidental waste, mixed waste?

11 DR. HILL: I think that this consideration
12 has come up in the context of waste classification for
13 the lower activity waste. So, it's not really
14 something that we've been considering for the WIR
15 issue itself.

16 We're really functionally oriented on what
17 is the high-level waste, more than the classification
18 of the low-level waste, and the mixed waste, the
19 blending issues that are associated, all of that with
20 the ongoing Part 61 rulemaking.

21 MR. CAMERON: Mark, are you suggesting
22 that the regulation -- the rule should address mixed
23 waste?

24 MR. YEAGER: Kevin and I just talked about
25 this issue before the meeting, and it will be a waste

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1 that's generated by a reprocessing facility. So, I
2 just -- I'll ask the question when we talk about waste
3 classification.

4 MR. CAMERON: Okay, which we'll get to.
5 We're going to hear from Susan, and then, Miriam, if
6 you could put the Waste Classification Gap up for us,
7 please. Susan?

8 MS. CORBETT: Thank you. I mean, I'm just
9 a lay person speaking on behalf of the citizens of
10 South Carolina, and it's kind of like we feel like
11 fool me once, shame on you, fool us twice, shame on
12 you. So, we want to make sure that there is
13 consistent language with -- when you say there's not
14 going to be any WIR waste left on site, we want to
15 make sure that's very clear, because like Tom said,
16 you could say the site, oh, the site is here, but
17 there's this greater site that we could just move it
18 from there over to there. So, we want to make sure
19 that there's very clear language about what is the
20 site, and how that would, potentially, affect our
21 state in terms of it being left here. Because,
22 originally, that WIR -- that wasn't WIR. I mean, that
23 just came about in 2005, and that was considered high-
24 level waste before. In fact, I think it's still
25 considered high-level waste in every state except

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1 Idaho and South Carolina. Everywhere else, even in
2 Washington State, this is still considered high-level
3 waste.

4 So, we're just concerned about the rules
5 keep getting changed on the fly kind of thing just to
6 suit the situation. And I want to make sure that we
7 don't get stuck in that situation here again in South
8 Carolina. Thank you for clarifying what you said,
9 though. I appreciate that.

10 MR. CAMERON: Thank you, Susan. Can we
11 move to Waste Classification now? Okay. And --

12 MR. McCULLUM: That's why my tent is up.

13 MR. CAMERON: Go ahead, Rod.

14 MR. McCULLUM: Yes, I wanted to go on to
15 the next ride. And I think this, hopefully, will be a
16 pretty simple discussion.

17 I think what Staff has indicated here is
18 that this is being addressed. They've already got
19 Commission direction on this issue. It's being
20 addressed in Part 61. I know there's a lot going on
21 over in Part 61 right now, and I think the discussion
22 belongs over there.

23 I think that, in other words, our position
24 is that's a sound approach, and there's nothing, as I
25 think is indicated here, there's nothing additional

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1 needed in this rulemaking beyond that. So, I just
2 wanted to endorse that approach.

3 MR. CLEMENTS: Sorry is there's any
4 confusion on my part, but just to raise this
5 reprocessed uranium issue again. Wherever it be
6 addressed, I do think that the NRC does need to assess
7 what constituents are in the uranium coming out of a
8 reprocessing plant. And you can easily get that from
9 AREVA, and how that's going to be classified no matter
10 where it be, if it's Part 61 or otherwise.

11 And, also, I'm a little confused as to
12 where the issue of after capture of at least certain
13 fission gases, where the storage of them would be if
14 that's what it ends up, where containers of noble
15 gases would be, and how that fits into your
16 regulation.

17 I know that, what is it, 40 CFR 190 is the
18 EPA reg on this, but how are you going to be
19 addressing onsite storage of containerized noble
20 gases, if that's what it's going to be?

21 MR. CAMERON: And, Britt, is that our
22 issue here about whether all those noble gases are
23 going to be treated under Part 61, or what is the
24 answer to Tom's question?

25 DR. HILL: Well, I think we're talking

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1 about the effluent monitoring and controls issue more
2 than the storage of radioactive gases.

3 MR. McCULLUM: Yes, 40 CFR 190 is a
4 effluent rule.

5 DR. HILL: Right, for release limits and
6 dose limits.

7 MR. McCULLUM: There's an onsite issue of
8 how you manage the storage, but that gets to be
9 technology-specific. You're going to have to show that
10 your exposures to your workers and everything at the
11 storage meets the regulations no matter how you do it.

12 MR. CAMERON: So, is this something that
13 we should talk to when we go to the effluent gap?
14 Okay. Let's not lose that. And Tom brought this up
15 again, reprocessed uranium. We know that you
16 mentioned that the -- one of the drivers for the, at
17 least one change to Part 61, is how you deal with
18 depleted uranium, because that defaults to Class A.

19 Is reprocessed uranium different than
20 depleted uranium? I guess I just would like to get
21 some clarification on that. Sven?

22 MR. BADER: Yes. Reprocessed uranium does
23 contain some fission products that the separation
24 process was not able to completely purge from the
25 uranium that's been recovered. So, there are special

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1 processes. I think it was brought up here, AREVA has
2 its facility in George Besse II that's being
3 specifically designed to re-enrich this reprocessed
4 uranium.

5 In addition, this reprocessed uranium has
6 a higher enrichment, B235, than depleted uranium or
7 natural uranium. So, it would have to go through less
8 enrichment, but still go through an enrichment
9 process. And I think the inevitable question also is
10 the depleted tails from the re-enrichment of
11 reprocessed uranium. And, again, some are calling it
12 a waste. In France, that's a resource, again, for
13 future reactors. I mean, it's still full of potential
14 power that could be utilized, but it will require a
15 next generation reactor.

16 So, I guess maybe the question is, will
17 there be storage requirements for this material that
18 will be unique. And then, I guess, Tom also mentioned
19 the capture of fission -- of noble gases. It's
20 something we've done a lot of work on in looking at
21 it, and I know the DOE complex is also working on
22 that.

23 Clearly, gases won't meet performance
24 requirements for disposal of Class A, so what they
25 have done, or are proposing to do is to -- if you have

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1 to capture this material, somehow putting it in a
2 matrixed material, so again you have to look at
3 performance requirements then from a safety
4 standpoint. And we have regulations for that type
5 material.

6 MR. CAMERON: Okay. Thanks, Sven. Fairly
7 complex in terms of all the different waste streams.
8 That was an easy one. Okay.

9 John, and then Mary -- John, Mark, Mary,
10 and then we'll take a break.

11 MR. GREEVES: I hate to do this, but I'm
12 stepping back because I think waste incidental and
13 classification are connected. We spent a lot of time
14 talking about WIR issues. They are controversial.

15 You rightfully included the discussion of
16 other waste streams, Paragraphs 6 and 7 of Appendix D
17 on page 27. I think you know what I'm talking about.

18 I think I would be remiss if I didn't flag that and
19 say you really do need to include something on the
20 hulls, the ion exchange beds, laboratory items, et
21 cetera, get that into a regulation, because it's not
22 at the present time. It's included in DOE's border,
23 but it's not in the regulation, so somehow you're
24 going to need to address that, because anybody that
25 operates this facility will have those materials. And

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1 we need to have a clear understanding of what are
2 they? And it's expressed here that they're not high-
3 level waste, so I think that needs to be written down
4 in a rule. So, I'm just emphasizing that.

5 You already got it in there, and I agree
6 with the way you've written it up. It does need to be
7 in the rule.

8 MR. CAMERON: Mark?

9 MR. YEAGER: This is just a general
10 question. I don't know if there's any NRC Staff member
11 that's working on this initiative that has interface
12 with the NRC group that's addressing the revision of
13 Part 61. Is there?

14 DR. HILL: Yes, there is. And,
15 unfortunately, he could not be with us on this trip.

16 MR. YEAGER: That's fine. You know, our
17 state is engaged in that revision as part of that
18 team, and I just wasn't aware of any contributions
19 from this group with regard to some of the isotopes
20 that were referenced earlier this morning that are
21 kind of unique to this process, that might have to be
22 made -- have provisions made for them when the
23 revision happens.

24 DR. HILL: Right.

25 MR. YEAGER: Okay.

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1 MR. CAMERON: And finally, Mary.

2 MS. OLSEN: I want to note that we are
3 involved with the Part 61 dialogue, and I understand
4 not dragging that whole thing in here. I want to just
5 say that we welcome a reexamination of waste
6 classification, that we agree that the waste
7 classification that exists is very misleading, and
8 institutionally unhelpful.

9 But one of the issues that we would like
10 to see addressed is not only how highly radioactive,
11 and how concentrated but, in fact, the source term
12 issue of how long it is going to be hazardous, and
13 what is the level of institutional control that's
14 placed around that length of hazard. So, those are
15 some additional issues that we bring in.

16 And then I just want to for the record,
17 because we did talk about this, say that the surface
18 dose of the uranium that comes out of reprocessing is
19 enormously different than other uranium. I'm not
20 going to say I know what that surface dose is, but the
21 gentleman from AREVA mentioned it may need special
22 storage requirements. Well, it's every single step
23 onward with that material that is not comparable to
24 fresh uranium fuel, the transport of it, the handling
25 of it, the storage of it, everything.

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1 So, I don't want to overstate the case,
2 but I just want to be very, very clear that those
3 provisions were not made at Paducah, and the NRC
4 really needs to do a lesson learned on that incident,
5 which was not, as far as I know, commercial. But it
6 was from West Valley, I don't know. But flesh that out
7 and get a clear understanding that the "reuse" of the
8 uranium from this process is not a simple plug `n play
9 with your other uranium.

10 MR. CAMERON: Okay, thanks, Mary. Thank
11 all of you. Let's take a break, come back -- why
12 don't we come back at 20 to. It's a 20-minute break.
13 We have two more gaps to do here. And then we have a
14 relatively short but important subject of financial to
15 do. So, I think we still have time. So, let's take 20
16 minutes. And thank you, Britt, and thank you, Wendy,
17 for your work.

18 (Whereupon, the proceedings went off the
19 record at 3:19 p.m., and went back on the record at
20 3:44 p.m.)

21 MR. CAMERON: On the record. Okay, and
22 just for clarification, we're going to finish up these
23 two gaps in this subject. And then we're going to go
24 on and see if anybody has anything to say in the
25 audience on this.

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1 Then we're going to bring Bret up to talk
2 about financial. And we'll have the discussion of
3 that and I think it's going to be sort of a short
4 subject. But we'll also have public comment then. So
5 there will be two public comment sessions.

6 And we need to -- The next gap is waste
7 confidence. Okay. And we'll get that up there for
8 you and we'll talk about that. And the last gap is
9 going to be effluents. I think we've talked about the
10 EIS issue. And fortunately we have some members of
11 the NRC staff here in the audience who are probably
12 going to have a responsibility for working the EIS.
13 So they've been listening to all your comments on that
14 which is good.

15 Okay. Here is waste confidence proposal.

16 And basically, Brit, is this -- Should the NRC try to
17 fold the high level waste that results for
18 reprocessing try to do a waste confidence decision on
19 that? Or should it be something that the licensee is
20 going to have to address in their environmental
21 report?

22 DR. HILL: Right. Would you extend the
23 existing waste confidence rule for spent fuel at any
24 reactor to include high level waste from any
25 reprocessing facility?

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1 MR. CAMERON: So that's the basic issue
2 though.

3 DR. HILL: Yes.

4 MR. CAMERON: Well, let me ask people
5 around the table on this one. Does anybody around the
6 table think that the waste confidence rule should be
7 extended to make a generic finding on the
8 environmental impacts of this material? I mean, if
9 that's the issue a very simple question. Do people
10 think the waste confidence should be extended? Or
11 should we have this addressed in the license
12 application if anybody comes in for a reprocessing
13 license?

14 Okay. Mary.

15 MS. OLSEN: I find it highly refreshing
16 that a site specific approach might be taken.

17 MR. CAMERON: Okay. Anybody else around
18 the table want to differ from the site specific?
19 John. And we won't close this off until we hear from
20 Rod. Okay.

21 MR. GREEVES: I think he wanted to
22 participate and we sort of got out of order. And I'm
23 surprised he's not back here. So I'd just keep the
24 record open until he comes back.

25 MR. CAMERON: Okay. No, we will.

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1 But I'm just -- Go ahead, Mark.

2 MR. YEAGER: Dues to the inevitable
3 pushback on any proposed commercial facility you have
4 in order to get any kind-in from the potential
5 location it would be, you'd have to have some kind of
6 independent assessment done just to garner public
7 support. I don't see how you can just make a generic
8 decision. It has to be part of the licensing process.

9 MR. CAMERON: Okay. Greeves is shaking
10 his affirmatively.

11 MR. GREEVES: I'm just -- I'm not an
12 expert on this topic. So I wish Rod was here. But
13 the point is we already have glass storage. We're
14 storing it at West Valley. It's being stored by the
15 government. So the issue is at hand already.

16 I agree with Mark that you can't -- you
17 have to pay attention to it in any licensing process.
18 I'm not the expert on waste confidence, but --

19 MR. CAMERON: Okay. Brit.

20 DR. HILL: Just to try to help focus the
21 discussion, our concerns really are in the waste
22 confidence rule. The Commission came up with five
23 findings about storage and disposal of spent fuel and
24 at times of high level waste.

25 The Commission expressed confidence that

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1 high level waste could be safely disposed of in a
2 geologic repository and that the challenges associated
3 with that disposal were bounded by the challenges of
4 disposing spent fuel. So the Commission was very
5 clear in Findings Nos. 1 and 2 that high level waste
6 could be disposed of safely. In Finding 3, the
7 Commission was very clear that spent fuel and high
8 level waste would be stored at a licensed facility
9 unless they had confidence that it could be managed
10 successfully.

11 The problem comes in for us in Finding No.
12 4 which talks about the confidence in safe and secure
13 long-term storage. That finding only talks to
14 confidence for spent nuclear fuel storage at any
15 reactor.

16 So the challenge for staff is was there
17 enough technical information for us to think that like
18 the Commission did for Finding 4 for spent fuel
19 storage could we make a generic finding for long-term
20 storage which would be in this case 60 years beyond
21 the license life of any facility that we had
22 sufficient information to say "Staff was confident
23 with reasonable expectation that there would be no
24 significant environmental impacts from the storage of
25 that waste." And that was where staff at this stage

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1 felt that we did not have the sufficiency of
2 information to make that as a generic finding.

3 So it's not really about could we do it in
4 the here and now. I don't think there's been any
5 technical issue that's been raised to say that high
6 level waste could be stored safely in the here and
7 now. It's extending that here and now confidence out
8 for at least 60 years beyond the license life of that
9 facility.

10 MR. CAMERON: Okay. Let's go to Derek
11 Widmayer from ACRS and then Tom Clements.

12 MR. WIDMAYER: And Brit just summarized
13 the reason I didn't answer your question in the
14 affirmative is what he just summarized there is that
15 Criteria 4 is where they have difficulty. And I think
16 they're being honest as far as what they can achieve
17 with --

18 MR. CAMERON: Would be a non-starter.

19 MR. WIDMAYER: Yes.

20 MR. CAMERON: Okay.

21 Tom.

22 MR. CLEMENTS: Let me just point out that
23 once again getting back to this issue of a
24 reprocessing plant located on a DOE site. Savannah
25 River site already has 3,000 canisters of vitrified

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1 high level waste and around 7,500 are supposed to be
2 made.

3 If you're going to develop waste
4 confidence and this reprocessing plant is located in a
5 DOE site, be it Savannah River site or if Hanford ever
6 vitrifies high level waste, where there's material
7 that that doesn't fall under NRC regs. from a
8 community and state wide perspective, if you develop
9 regulations that apply only to the newest part of that
10 vitrified waste and the oldest material is still
11 sitting there, 7,500 canisters, this is going to
12 impact what happens to your material, to the NRC
13 regulated material.

14 I'm just making this observation. But
15 this is going to be a conflict once again if the
16 reprocessing plant is located on a DOE site with
17 vitrified high level waste.

18 MR. CAMERON: Okay. Thanks, Tom. And
19 just to sum up for Rod, we really have not had anybody
20 who really thinks that there should be any other
21 approach. But it's feasible to do another approach
22 other than a site-specific approach rather than a
23 waste confidence approach. I don't think I'm
24 summarizing that incorrectly.

25 Do you -- I just wanted to tell you what

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1 we heard around the table while you were gone. Do you
2 have anything to say about the waste confidence versus
3 the site-specific issue?

4 MR. McCULLUM: I don't think I would
5 disagree with that. But the only thing I would offer
6 is that of course the staff does have direction from
7 the Commission separately that they're working on to
8 look beyond the existing waste confidence rule beyond
9 the 60 years.

10 And in that I don't know whether or not
11 they would consider reprocessing or not. But at this
12 time I would not pending further information from that
13 I would not disagree.

14 MR. CAMERON: Okay. And that's a process
15 that might be happening later on this year. But I
16 think we closed that issue.

17 Let's go to -- Can we go to effluence?
18 I'm sorry to have you do this, Miriam. I probably
19 would know if -- It would take me a half hour to do
20 it.

21 Okay. And when you say take Part 50
22 regulations as a basis, could you just explain to
23 everybody again since it's been a while since we
24 talked about this what you're proposing to do here,
25 Brit. What the NRC staff is proposing to do or when.

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1 DR. HILL: I'd like Dr. Reed to answer
2 that.

3 MR. CAMERON: Okay. Dr. Reed.

4 DR. REED: Yes, let's give Brit's voicebox
5 a break. What we're proposing is we looked at 10 CFR
6 Part 50 regulations and those in Part 70 to consider
7 what would be most appropriate. And because of the
8 more of a potential for effluence from nuclear power
9 reactors than there are in existing fuel cycle
10 facilities we though the 10 CFR Part 50 approach was
11 more appropriate.

12 So we would use aspects of the general
13 design criteria found in Appendix A and to use the
14 Part 50 regulations as a basis for developing
15 monitoring requirements for these facilities.

16 MR. CAMERON: What's the most vexing issue
17 for the NRC in this approach? I mean, is there really
18 a clear alternative or is this the devil's in the
19 details? What would you pose to the people around the
20 table about? Is it basically -- Does this sound like
21 this makes sense or?

22 DR. REED: Yes. Our concerns as I think
23 have been mentioned periodically during the meeting
24 with reprocessing is that it does have the potential
25 for greater releases for greater effluence. You

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1 compare it to nuclear plant or fuel storage.

2 Your fission product gases are
3 encapsulated in the cladding in the matrix. However,
4 by reprocessing, you are releasing those effluence
5 into the process vessel. So you're increasing the
6 mobility of the radionuclides.

7 So really our question is would it serve
8 the 10 CFR Part 50 regulations just as a basis be the
9 most appropriate course of action? Or do the
10 stakeholders have any other ideas? Do we just need to
11 sort of start from scratch in developing these
12 regulations?

13 MR. CAMERON: Okay. I think that's fair.

14 Rod.

15 MR. McCULLUM: Yes. Our position is yes,
16 you should. And I know that there's a note in here
17 that indicates that your approach is similar to the
18 approach that we had proposed. We're pleased to see
19 that.

20 There's an EPA component of this and we
21 know that EPA is working on trying to update 40 CFR
22 190 to reflect current thinking. And NRC should stay
23 engaged there. But I think you've outlined a path
24 here that we consider workable.

25 MR. CAMERON: And just to remind everybody

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1 and correct me if I'm wrong, but the result of all
2 this after it goes to the Commission, whatever goes up
3 there, is if the NRC is going to work on this
4 rulemaking and they're going to use this approach in
5 their rulemaking. The rationale for what they would
6 come up with under this approach would be presented in
7 a proposed rule for public comment. Okay. Just to
8 remind everybody about there's some other shoes that
9 are going to drop on all of this.

10 Mary.

11 MS. OLSEN: I just want to go back to the
12 fact that the people I work with really value
13 isolating radioactivity from the biosphere. If we're
14 going to talk about a value based approach, that's our
15 deal. That's what we want. We even want zero
16 release.

17 So when I describe reprocessing, I say
18 that you take this nice relatively stable waste form
19 that's a ceramic with a metal wrapper on it and you
20 chop it up and you dissolve it in acid. And then you
21 smear it all over this huge facility with absolutely
22 no reduction in radioactivity. And you pull out the
23 plutonium and God only knows what happens to that.
24 And then you've got all these wastes.

25 And worldwide the typical thing that's

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1 done with the intermediate liquid waste as a pathway
2 off the site is to dump it into water. I mean that's
3 what they did in Russia, in the former Soviet Union.
4 That's what they did at Sellafield in the Irish Sea.
5 That's what happened in La Hague. That's what's
6 happened to some extent already in the Japan. So
7 where has there been an instance of having something
8 that isn't just plain outright dumping of a certain
9 portion of the intermediate liquids?

10 When we talk about effluent I get you that
11 you're talking Part 50. But basically they just have
12 to add more water. Right? Isn't that what we're
13 talking about? So if we're talking about stuff
14 leaving the site like this is what we're talking
15 about.

16 So I don't know. Maybe it's like I can't
17 imagining this happening in New Mexico. I noticed
18 that you held a meeting there and you're holding a
19 meeting here which sort of suggests that this
20 volunteerism is getting a certain amount of attention.

21 But it just gives me really deep, deep concern to
22 talk about using the Part 50 numerical guidance with
23 ALARA because it basically just says dilute it down
24 and dump it out.

25 MR. CAMERON: And just before we -- Maybe

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1 for all of our benefits, I think the statement was in
2 the slides that the licensee, if someone did get a
3 license, they would have to comply with the effluent
4 limitations in 10 CFR Part 20, okay, which can be
5 pretty low when you're looking for what the effluent
6 limitations are.

7 Maybe it would be helpful if someone and I
8 don't know if it's Sven or Rod, if someone could just
9 tell us or NRC staff what's the nature of the
10 effluence, the normal effluence, air or water that
11 might come out of one of these facilities.

12 And just to say something that hasn't been
13 said is that the NRC does not want anybody to think
14 that the selection of sites for these roundtables has
15 any implications for where there might be they would
16 expect an application for a reprocessing facility to
17 be. So I just wanted that to be clear to everybody.
18 We're not here because we think that there's going to
19 be one here. Who knows? There might be. But that's
20 not why we're here.

21 Can we talk a little bit about effluence
22 for Mary and for the rest of our sakes? Sven. Rod.
23 Anybody want to tackle that?

24 MR. WIDMAYER: I'll defer to Sven on that.

25 I wanted to address the larger point at the end. But

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1 go ahead, Sven, on the details.

2 MR. BADER: There are gaseous effluents.
3 You know when you split the fuel you can capture the
4 vast majority with sophisticated technologies. There
5 are La Hague. We do have liquid effluent releases.
6 They do meet regulatory limits in France. So don't
7 want to deceive people.

8 The facility that we have designed for the
9 United States as a potential opportunity would be zero
10 liquid effluent facility. But then again if there are
11 regulations that permit releases, you can redesign
12 your facility once again. So it's really up to the
13 regulatory limits. You know, we meet the regulatory
14 limits which meet the safety guidelines within
15 wherever we're at.

16 MR. CAMERON: Okay. And, Rod, do you want
17 to add anything?

18 MR. McCULLUM: Yes. We obviously share
19 the desire to minimize the release of radiation I
20 think around the country at 104 nuclear plants. We
21 don't just meet requirements. We exceed them. And in
22 the cases of some of these things like tritium we're
23 even going well beyond the regulatory requirements to
24 provide additional assurances.

25 It's probably true. I would not

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1 necessarily characterize what goes on in France in
2 some of the existing facilities as dumping. However,
3 and I think it's been alluded to, we recognize that
4 here in the United States there may need to be a more
5 stringent standard.

6 It certainly needs to be a reasonable
7 standard because zero is never a reasonable standard.

8 If you apply a zero release standard to anything you
9 can't drive your car, you can't wash your clothes, you
10 can't do anything.

11 But that being said that doesn't lessen
12 our desire to minimize. And that's really what ALARA
13 is. And I think again NRC is on a success path here
14 particularly if it's done in conjunction with EPA. I
15 don't think 40 CFR 190 is very satisfying as it is to
16 either side of this debate because it talks about
17 regulating releases on the entire scope of global
18 nuclear energy which if you're living next to a given
19 facility I don't think it gives you much comfort that
20 because somebody else released less your neighbor can
21 release more.

22 So you need to have a regulation that
23 reflects current understanding, current radiation
24 protection, and does drive releases down. And I'm
25 confident that that regulation in this country

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1 probably will be a little different than it is in
2 France. And as long as it's reasonable we won't just
3 meet it. We'll exceed it.

4 MR. CAMERON: Okay. Thank you, Rod.

5 Let's go to Derek and then we'll finish up
6 with Wendy.

7 MR. WIDMAYER: Okay. In doing my homework
8 for the sessions, I mentioned that I thought Gap 2 was
9 difficult. I thought that this particular gap was the
10 easiest. I think that it's a sound approach to follow
11 Part 50 and that this was a good sound approach by the
12 staff.

13 I did have a question for them though.
14 The report that you mentioned before from ACNW&M, they
15 had brought up the issue with the existing release
16 limits for krypton-85 and iodine-129 and then those
17 two things didn't make it into your specific questions
18 as far as needing to do anything on it. I was
19 wondering if there is something, if you know the
20 answer to the question. Is there supposed to be some
21 kind of technical approach that prevents the release
22 of krypton-85 or why didn't that make it into the
23 problems that need to be dealt with as far as effluent
24 releases?

25 DR. REED: Do you mean in terms of the

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1 questions that we posed to the --

2 MR. WIDMAYER: Yes.

3 DR. REED: Well, because the release
4 limits are actually codified in 40 CFR 190 which is in
5 the EPA regulation. So really that would be beyond
6 our scope.

7 MR. WIDMAYER: Okay. I guess the ACNW&M
8 had suggested that you would work with the EPA. Are
9 you guys working with --

10 DR. REED: That's correct.

11 MR. WIDMAYER: Okay.

12 DR. REED: Because we've also posed the
13 question of whether NRC should actually engage with
14 the EPA to discuss developing release limits also for
15 tritium and carbon-14 which I think is one of the
16 questions that currently we're not engaged in.

17 MR. WIDMAYER: So those are not codified,
18 the ones that you're asking the questions about or?

19 DR. REED: That's correct. Yes.

20 MR. WIDMAYER: Okay.

21 DR. REED: The 40 CFR 190 covers krypton-
22 85, iodine-129 and then I think -- correct me if I'm
23 wrong -- that some transuranic elements are --

24 (Off the microphone comment.)

25 Plutonium, thank you. Plutonium and other

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1 alpha emitters, I think.

2 MR. CAMERON: So that for people's
3 edification around the table other people will be
4 interested in whatever the -- does with --

5 DR. LESLIE: Chip, we can't hear you.

6 MR. CAMERON: Thank you. I'm sorry. I
7 just wanted to point out for people who are interested
8 in this issue from what Wendy is saying the EPA
9 rulemaking on 40 CFR 190 may have important
10 implications for reprocessing. Is that correct?

11 DR. REED: Yes, it will.

12 MR. CAMERON: Okay.

13 Mark.

14 MR. YEAGER: EPA's regulations on release
15 limits for radionuclides has a direct impact on all
16 state programs that have to deal with radiation
17 effluence. The question, I think Chip sent me this in
18 an email and it's not up there for public comment.
19 But should the NRC in coordination with EPA develop
20 release limits for carbon-14 and tritium? Not only
21 should they do that for carbon-14 and tritium. They
22 should probably do it for all isotopes.

23 Because one of the problems we have as a
24 state when our decisions are questioned is what
25 regulatory regiment are we using, NRC or EPA. And DOE

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1 comes into play. This has come into many discussions
2 with a committee I'm involved with CRCPD, the E-5, on
3 radioactive waste management. We have advisors from
4 DOE, EPA, NRC. And it's been a source of frustration
5 for states for years that each agency seems to have
6 their effluent limits.

7 So when we have to make decisions they're
8 questioned. "How did you come to that conclusion?"

9 "Well, we used this."

10 "Well, EPA says that."

11 So it's very important. This is actually
12 an effort that might lead to that consistency between
13 Federal agencies to have a single approach to
14 effluence and a single number that's risk-informed.
15 And so if this leads to that I'm all for it. But
16 carbon-14 and tritium are just two of them. I'd like
17 to see it for all isotopes.

18 MR. CAMERON: Okay. Thank you, Mark.

19 Let's see what the audience has to say
20 about these issues and go back into the panel if
21 necessary. Bret Leslie has been involved in the -- We
22 had a question from I think Mary about whether the
23 Part 61 rulemaking staff were fully aware of what was
24 going on with this. And I think, Bret, is that what -
25 - do you want to close that loop for us please?

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1 DR. LESLIE: Bret Leslie, NRC staff.

2 Mark was one of the participants of
3 previous roundtables that I facilitated on the unique
4 waste stream rulemaking and the technical basis
5 document indeed does talk about the incorporation of
6 processing isotopes within the scope of that
7 rulemaking. And that is available on the NRC website.

8 Just wanted to close the loop because he had asked
9 the question and we hadn't gotten a real good
10 response. But that's it.

11 MR. CAMERON: Okay. Thank you very much
12 for that, Bret.

13 And we have another NRC staff person to --
14 Bobbie, do you want to say something first?

15 (Off the microphone comments.)

16 MR. CAMERON: Go ahead. We're here for
17 whatever we discuss.

18 DR. STAMATAKOS: Okay. So this is John
19 Stamatakos from the CNWA. And my question goes to
20 John or Sven. In your version of the 7X theme park
21 would you also include advanced reactor prism reactor
22 as part of something that would also be encompassed
23 under 7X? And if not, don't you think that that part
24 of a facility offers the same kind of challenges that
25 you brought up about overlapping regulations that

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1 would occur under one in which we limit 7X to simply
2 the repo cycling center?

3 MR. CAMERON: Okay. Thanks, John.

4 MR. BADER: I'll try to take that one on.

5 No, there's no fast reactor. I think it was your
6 question. Could we co-locate a fast reactor on a
7 site? And did 7X consider that? And 7X did not
8 consider that certainly. And from a technology
9 standpoint we don't foresee fast reactors being
10 anywhere around for another 50 years or so. So I
11 don't think that needs to be a necessary part of this
12 rulemaking.

13 MR. CAMERON: Okay. And Tom and then Rod.

14 MR. CLEMENTS: Just a comment on that.
15 It's -- I don't know if people are aware of this
16 Enterprise SRS concept which is an evolution of
17 earlier DOE energy park. And it's quite clear just
18 for the record that besides a commercial and nuclear
19 fuel cycle facility and advanced fuel recycling R&D
20 there's a small modular reactor what they call FARM
21 now. This has posted online by a public interest
22 group because DOE would not release it.

23 And I take it that one of these reactors
24 is the GE Prism reactor which may accept material from
25 the reprocessing plant. And just to add from a FOIA I

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1 have here if anyone wants to see it there have been
2 discussions about producing the first load of fast
3 reactor fuel in the MOX facility that's being built
4 here at Savannah River site which is some stuff
5 happening behind the curtain that's not being spoken
6 about openly. I can show that FOIA and other stuff to
7 people about that if you'd like to see it. Thank you.

8 MR. CAMERON: Okay. Thank you, Tom.

9 Rod.

10 MR. McCULLUM: Yes. And although I don't
11 disagree with anything Sven said, I do have to speak
12 up for some of my other member companies who may
13 believe fast reactors are less than 50 years away
14 whether they are or not.

15 Absolutely a fast reactor would have to be
16 considered a different facility than a reprocessing
17 facility. You might very well have them both next
18 door just like you could have a Part 72 facility next
19 door to a Part 7X facility.

20 But remember where we started out here and
21 I think it's a path that NRC is following is that the
22 reason we need a Part 7X is because a reprocessing
23 facility is something different than a reactor and
24 different than a fuel cycle facility. You don't have
25 the sustained chain reaction. You don't have the

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1 energy levels. You don't have the need for active
2 cooling or passive cooling. But anyway the fuel --
3 You just don't have the heat loads by the time you get
4 a fuel into a reprocessing facility.

5 So it would only be appropriate to
6 regulate the reactor under reactor regulations. Now
7 whether Part 50 could handle certain fast reactors or
8 Part 52 that's a whole different questions for a whole
9 different meeting.

10 But absolutely agree that it would kind of
11 defeat the purpose of coming up with a risk-informed,
12 performance-based and technology neutral
13 reprocessing, recycling plutonium green washing
14 facility if you were to try to include the fast
15 reactor itself in that.

16 MR. CAMERON: So it wouldn't be a ride in
17 the regulations theme park.

18 MR. McCULLUM: No, it would be like this
19 is Disney World. That would be over at Universal
20 Studios I think.

21 MR. CAMERON: Okay. I'm glad you made
22 that clear. Thank you.

23 Alex, I'm going to go to --

24 DR. HILL: Can I make a follow on first?

25 MR. CAMERON: I'm sorry. Do you want to

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1 continue on this? Go ahead.

2 DR. HILL: Yes. I just wanted to follow
3 on with this to help us better understand the
4 position. I appreciate what Rod is saying about we
5 would not want to incorporate licensing a potential
6 fast reactor as part of the regulatory framework for a
7 reprocessing center because the requirements would be
8 different and we already have a regulatory
9 infrastructure, be that 50 or 52, to address it.

10 Could you help me understand what the
11 difference in that logic would be to applying it to a
12 fuel fabrication facility that may be part or co-
13 located with a reprocessing installation where we
14 already have an existing regulatory framework for
15 licensing a fuel fabrication facility that would be
16 co-located?

17 MR. McCULLUM: Well, I think that there
18 are distinct differences between fuel fabrication with
19 fresh uranium out of the ground and fuel fabrication
20 with reprocessed material. You would want to keep
21 those processes integral to the same facility. You
22 would not want to have regulatory boundary issues
23 within that facility because you are dealing with fuel
24 that will always have some trace amounts of fission
25 products in it which the current fuel fabrication

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1 facilities do not have. Again, a different level of
2 hazard.

3 So I would envision again the fast reactor
4 would be a customer facility. It doesn't matter if
5 you're sending MOX from a reprocessing facility in a
6 non-descript town in the middle of the country
7 somewhere to one of the East Coast reactors or whether
8 you're sending some more advanced reprocessed fuel to
9 a fast reactor that's sitting right next door. You
10 still had a transaction where a facility has produced
11 fuel and is shipping it to a customer. So you now are
12 in a different facility, different operators,
13 operating different procedures, operating in entirely
14 different ways of operating and trained in different
15 ways. You know, a reactor operator in a reprocessing
16 facility, the operator would probably be different
17 people entirely.

18 While you can put these facilities next
19 door to each other, that's really irrelevant because
20 all you're talking about is how far the producer has
21 to ship to the customer. But the fuel fabrication
22 with the irradiated material definitely belongs inside
23 the same facility and the same regulatory framework.

24 MR. CAMERON: Okay. Thank you.

25 And is it Dr. Roca?

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1 DR. HAYES: No, it's Dr. Rose Hayes.

2 MR. CAMERON: Oh, Rose Hayes.

3 DR. HAYES: I'm Rose Hayes. As I said
4 before I'm a member of the Department of Energy Site
5 Specific Advisory Board for the Savannah River.

6 And my question goes to the issue of --
7 the statement that was made -- that no waste would be
8 left on site. You probably know that the State of
9 South Carolina along with the State of Washington and
10 I guess a couple of other parties are currently suing
11 the Administration because Yucca Mountain was closed,
12 taken off the table, as a national repository. And
13 it's the view of South Carolina and the view stated in
14 the court claim, the legal action, that the 1982
15 Nuclear Waste Policy Act was a Congressional act. And
16 until the Congress modifies that act the fact that it
17 designates that spent nuclear fuel or waste will leave
18 the sites, both commercial and the sites where legacy
19 waste was generated, and go to a deep geologic
20 repository. And, of course, then in '87 then the Act
21 was amended to specify that would be Yucca Mountain.

22 And that has not happened. The Congress
23 has not modified that Act or withdrawn that Act. So
24 as far as South Carolina is concerned there is
25 regulatory environment that addresses spent nuclear

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1 fuel processing. That is it prohibits it. It says it
2 will go to a deep geologic repository and it's
3 specifies that that site will be Yucca Mountain.

4 We've had difficulty at the site because,
5 of course, Yucca Mountain is off the table. And now
6 when we have a report from any of the program managers
7 and we have the flow charts the little square that
8 used to say Yucca Mountain and then National
9 Repository and then to be determined kind of thing
10 it's problematic. Where would the waste go from a
11 reprocessing site?

12 MR. CAMERON: Britt.

13 DR. HILL: Yes. Thank you, Dr. Hayes.

14 I remember reading late last week in the
15 press that the D.C. Court of Appeals is close to
16 issuing a ruling on the pending lawsuits by the State
17 of South Carolina and others. Hopefully that ruling
18 will shed some light on a legal interpretation of how
19 the Nuclear Waste Policy Act is being implemented.

20 I can say that the Nuclear Waste Policy
21 Act is specific in that both spent nuclear fuel and
22 high level radioactive waste would go into a deep
23 geologic disposal site and that the high level waste
24 is the highly radioactive materials resulting from
25 reprocessing. So I think if I'm answering your

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1 question correctly, the existing legal framework, the
2 Nuclear Waste Policy Act, provides that the highly
3 radioactive materials resulting from reprocessing
4 would go to deep geologic disposal.

5 The question, of course, is now that Yucca
6 Mountain appears to be off the table by the actions of
7 the Department of Energy and others where is that site
8 located. And as we all know there is no specified
9 site right now. And whether that can remain in limbo
10 for awhile or the Nuclear Waste Policy Act must be
11 going forward is a question that the courts will be
12 ruling on fairly soon.

13 MR. CAMERON: Okay.

14 DR. HILL: Did that address your specific
15 concerns?

16 MR. CAMERON: Thank you. Do you want to
17 do a quick follow-up? All right.

18 DR. HAYES: Not actually because the
19 statement has been made here that in a reprocessing
20 facility no waste would be left on site. Are you
21 assuming that that waste would go to this nuclear
22 waste storage site that our government has committed
23 to eventually provide or is there another kind of site
24 that waste from a reprocessing facility would go to?

25 MR. CAMERON: That's what are the

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1 assumptions behind your statement.

2 DR. HILL: The assumption is for
3 decommissioning and there are several stages for
4 decommissioning that to get to an unrestricted license
5 there is no intent to have disposal of any significant
6 waste remaining on site. Now when you go to a
7 decommissioned site, that would mean that the waste
8 would have to be offsite. I'm afraid we don't --
9 Nobody knows what that disposition pathway for spent
10 fuel and high level waste will be.

11 MR. McCULLUM: Well, while we don't know,
12 if I can interject, the absolute answer to the
13 question is that the high level waste resulting from
14 reprocessing or spent fuel will go to repository.
15 There's only one thing in the whole world of nuclear
16 waste there's absolute consensus on and that is that
17 geologic disposal is required in any scenario.

18 We had a path to site geologic disposal in
19 Yucca Mountain. The Blue Ribbon Commission is
20 affirming that geologic disposal is necessary. If the
21 Blue Ribbon Commission recommendations are enacted
22 into law we will then be embarking on the process of
23 selecting an alternate geologic disposal site.

24 I think the time frames are instructed
25 here. We heard earlier today that NRC does not

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1 anticipate completely this regulation until 2015. It
2 would be some years after that that even the most
3 aggressive bidders would be able to build a recycling
4 facility and get it licensed. Or get a license and
5 then build it.

6 So we will know before we move down this
7 path whether it's going to be Yucca Mountain, whether
8 we're selecting another repository. We'll know how
9 long down that path we are. And I think NRC in its
10 waste confidence decision talked about those time
11 frames and how long it might take to select another
12 repository. And that was part of the reason for
13 expressing their confidence in whether or not those
14 time frames could be met.

15 MR. CAMERON: Okay. We have two more
16 commenters out here and then I'm going to ask Bret to
17 come up to tee up financial for us.

18 Mary, do you have something to say on this
19 issue? And, Tom, I didn't know if you had something
20 more.

21 Okay. Mary, go ahead.

22 MS. OLSEN: Just briefly. I think it's
23 really important to remind everybody that Congress
24 directed the National Academy of Sciences to do a
25 study on Yucca and that one of the strongest industry

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1 participants, Dr. Pickford, was one of the dissenting
2 voices on that study.

3 And I -- just very briefly. I agree a lot
4 of time and money was wasted on Yucca Mountain. And
5 200 organizations in 1998 tried very hard to say to
6 the Department of Energy hang this up now. So I know
7 the courts are grinding it out. But I really don't
8 think it serves anybody's interest to advocate for
9 something that was going to fail.

10 So I personally am here to tell you that
11 it's a fabulous success that we're turning away from
12 it. And I hope we can all walk away from it together.

13 And I hope that when and if a repository program is
14 undertaken again the rules are the rules are the
15 rules. And if you can't do that for a repository you
16 certainly can't do it for a reprocessing facility.
17 And if you can't do it for a reprocessing facility, I
18 hope you all get some jobs you can be proud of. Thank
19 you.

20 MR. CAMERON: Okay. Thanks, Mary.

21 We're going to go to the two commenters
22 here. And, Bret, if you could join us at the table.

23 This is Alex Murray from the NRC staff.

24 MR. MURRAY: Thank you very much, Chip. I
25 am Alex Murray. I am a member of the NRC staff. I'm

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1 also a member of the public. So I'm very interested
2 in all of this as well.

3 I just have one quick comment and one very
4 quick question. The comment does relate to effluence.
5 The Advisory Committee on Nuclear Waste and Materials
6 in NUREG 1909 does -- In that document, they have a
7 very good discussion on effluence and they point out
8 that there are both dose limits and quantity limits.
9 And I think that has sort of been a little confused in
10 the discussion here.

11 In that same document, they point out that
12 most likely the dose limits would be easily met by a
13 modern reprocessing facility. The dose limits are
14 quite low and the expected doses would be even much
15 lower below that.

16 The question comes with the quantity
17 limits and the term that is used in the NUREG 1909 is
18 "microdoses to mega populations." So you're talking
19 about extremely low radiation doses from the releases.

20 However, when you take it times a few billion people
21 on the planet you actually come up with something that
22 can be a measurable dose.

23 The discussion is very good, very
24 informative, what it really means. And the
25 conclusion from that NUREG 1909 is that at the present

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1 time if relatively standard fuel is used for
2 reprocessing then there would have to be removal, fuel
3 effluent treatment for removing at least krypton-85.
4 By implication, if old fuel used then krypton-85
5 removal might not be required.

6 And this is all in the NUREG. And it's
7 also discussed in some of the documents the staff has
8 put out which are on the NRC reprocessing webpage,
9 public webpage.

10 My question to the panel here, just a very
11 quick question, has to be are there any thoughts of
12 any of the panel members about using fuel which you
13 say is 35 or 40 years old of which there is plenty
14 right now. Thank you very much.

15 MR. CAMERON: Okay. Thanks, Alex. That
16 was a short question and maybe the answers will also
17 be short. Does anybody have any opinions on that age
18 of the fuel?

19 Sven. Jan Bresee, Department of Energy.

20 MR. BRESEE: In consideration of fuel
21 recycle, any process regardless of the technology, any
22 size plant, any pilot activities would always start up
23 with the oldest fuel available simply as a safety
24 issue. You would never begin with short-cool fuel.

25 The question of whether short-cool fuel

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1 and by short-cool I'm talking about five to ten year
2 decay after coming out of the reactor, whether that
3 will ever be a reasonable feed to a processing plant
4 will depend ultimately on the regulations associated
5 with it because there are additional problems brought
6 on by material that has only decayed less than a half-
7 life of some of the radioisotopes.

8 The biggest argument in favor of short-
9 cool fuel is related to the control of americium and
10 that is a technical issue that will still require
11 additional consideration.

12 MR. CAMERON: Sven.

13 MR. BADER: Yes. I'll just add a little
14 bit to it. It's a huge tradeoff study. I mean, as
15 Jan indicated, if you reprocess the young fuel you
16 remove the Pu-241 which is a short half-life. It
17 decays to americium-241 which is a long half-life. So
18 it's really looking at the integrated process. What
19 do you want your final waste form to look at that
20 you're going to put in the disposal.

21 The reason we're advocating recycling is
22 we've got this borosilicate glass where I'm not going
23 to releasing any fission gases any point down the line
24 due to a seismic event or whatever that might cracks,
25 used fuel that's been disposed of. You know we have a

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1 very robust waste form.

2 But again the tradeoff study then is how
3 do you meet the regulations on the gaseous releases
4 such as the krypton-85. So it's a very large tradeoff
5 study. But the one benefit we have in the United
6 States is that there's an immense quantity of spent
7 fuel here. And so you could do blending. You could
8 add different aged fuels and meet the regulatory
9 limits. But in order to establish the best process
10 forward we really need to know the regulatory limits.

11 MR. CAMERON: Thank you. Thank you both
12 and thanks for that question, Alex.

13 Yes, sir.

14 MR. WOLF: My name is Clint Wolf. I'm
15 Executive Director for Citizens for Nuclear Technology
16 Awareness in Aiken. I'm also a former manager of
17 laboratories that have involved nuclear research and
18 development and actinide materials.

19 And I have to admit that as I was listening to
20 this discussion I was looking at the word "reasonable"
21 up there as low as reasonably achievable as an aide to
22 helping define release limits, etc. And I have to
23 admit I'm not an expert on nuclear regulatory
24 literature.

25 But I'm wondering. Is there anything in

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1 the NRC's literature that helps one define the term
2 "reasonable"? Because it seems to me that in much of
3 what we've done in the past we've simply done as low
4 as achievable rather than as low as reasonably
5 achievable. So is there something that really does
6 help us tie things to real health effects, real
7 environmental effects, as opposed to just going as low
8 and low and low as technology will take us?

9 MR. CAMERON: Does anybody want to put a
10 further gloss on the ALARA concept and what reasonably
11 means in terms of the ALARA concept? I won't ask
12 anybody to put a gloss on what reasonable assurance
13 means. But how about anybody on ALARA and the
14 reasonable part of it for --

15 (Off the microphone comments.)

16 Am I looking -- I'm looking for NRC.

17 PARTICIPANT: Yes. I'm the wrong person.

18 MR. CAMERON: Okay. Yawar or Wendy.
19 Yawar, do you want to handle this one?

20 Okay. This is Wendy.

21 DR. REED: Hi again. I thought I just
22 gave -- But never mind. I'll try and answer this. In
23 terms of Appendix I, Appendix I was mentioned. One of
24 the questions we wanted feedback on was whether we
25 need to develop sort of similar requirements. And one

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1 of those is the cost and to implement a technology to
2 actually reduce release limits based on the benefit of
3 doing that. And that essentially is how I think the
4 reasonable is defined or quantified if you'd like.

5 MR. CAMERON: And, Yawar and Wendy, after
6 we break and if this gentleman -- is it Clint --

7 MR. WOLF: Yes.

8 MR. CAMERON: If Clint Wolf is still
9 around maybe you can have a further discussion on
10 that. And now Greeves wants to get on the record on
11 this or what?

12 MR. GREEVES: It's an NRC answer that
13 should be given. Maybe we just have the wrong NRC
14 people in the room. But there's a rich history on
15 developing criteria for ALARA. It's well documented.
16 There's an answer to the gentleman's question.

17 MR. CAMERON: And I think --

18 MR. GREEVES: There are guidance documents
19 out there telling you how to go through an ALARA
20 process. I can't remember what the exact guidance
21 document is.

22 MR. WIDMAYER: And particularly in the
23 reactor arena.

24 MR. GREEVES: Yes.

25 MR. WIDMAYER: And I think we just have

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1 the wrong people in the room. But I think the path
2 that they want to take on this particular subject
3 there's well-documented path for ALARA. And I don't
4 think they would -- It's a sound approach to take in
5 this regard.

6 MR. CAMERON: Okay. Thank you for that.
7 John and Derek and I'm sure that Wendy and Yawar could
8 talk about the rich history on this. But trying to
9 give a short answer. And maybe, John, you could get
10 together with Mr. Wolf also on this and share.

11 MR. GREEVES: I would be happy to share my
12 experience historically.

13 MR. CAMERON: Okay.

14 MR. GREEVES: There is a rich history on
15 this.

16 MR. CAMERON: Good. We're going there.
17 We're going to Dr. Bret Leslie to talk financial
18 protection right now. And go ahead.

19 DR. LESLIE: Sure. Thank you, Chip.

20 Actually this question is -- Clint, you
21 had a really good question. But I think now that I've
22 had a chance to listen it's actually twofold. ALARA
23 is a concept within NRC regulation. And it's as low
24 as reasonably achievable.

25 But the concept of cost also came into

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1 play in the 40 CFR 190 regulations. And that is an
2 EPA process. So in fact if EPA comes forth with a
3 public rulemaking on 40 CFR 190 that cost issue comes
4 into play in their determination of what are
5 appropriate release limits. So there are two
6 different ways that the idea of reasonable comes into
7 play and John Greeves is right. It's well-founded in
8 NRC regulations in terms of NRC licensees, in terms of
9 as low as reasonably achievable. But that same
10 concept came into play in EPA's development of 40 CFR
11 190.

12 So now I'll put my financial protection
13 and requirements and fees hat on. And now we're going
14 to talk about a different topic and one that is much
15 more constrained by the laws that exist.

16 I have three topics I'm going to talk
17 about and the first one has to do with nuclear
18 insurance. And this is Gap No. 12. The Price
19 Anderson law basically sets out a framework for
20 ensuring that there's nuclear insurance in case of
21 accidents for protection of public property in one
22 instance.

23 But basically when NRC staff developed its
24 gaps it identified that the current regulations in
25 which NRC implements the Price Anderson Act in 10 CFR

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1 140 really did not address reprocessing facilities
2 directly. And so what the staff has identified is
3 that we would go forth in our rulemaking for
4 reprocessing facilities to address that gap and
5 identify in particular that because these are
6 reprocessing facilities or production facilities they
7 would be subject to Price Anderson.

8 In addition, when we looked at 10 CFR Part
9 40 there are agreements that are in these appendices
10 as forms. Because the scope of 40 CFR -- 10 CFR 140 -
11 - just because I worked at EPA I have 40 on my mind --
12 the 10 CFR 140 does not include the forms for
13 reprocessing. So basically there are two aspects that
14 we would be proposing to revise.

15 And again I just said that to extend the
16 applicability of 10 CFR 140 to reprocessing facility
17 one of the things that we would have to do is to
18 establish a specific amount of primary liability
19 insurance required for the reprocessing facility.
20 Because NRC is fee-based in the sense that we charge
21 the applicants or the licensees to basically regulate
22 them, we would be having to execute an agreement. So
23 that would take some time. In 10 CFR 140 there are
24 fees associated with developing these agreements. So
25 again that would be the third subbullet up there.

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1 And finally the last thing for this
2 particular gap would be to develop the appendices or
3 include a new appendix for reprocessing facilities.

4 In the previous meetings and in the NEI
5 White Paper this topic was not addressed. We did not
6 consider any alternative approaches other than
7 rulemaking because by statute it has to be done by
8 regulation. So that's the first topic.

9 The second topic has to do with 10 CFR
10 Part 170 which are the fees. Again this is a class of
11 licensee or a different type of licensee. And in
12 essence 10 CFR 170 lays out the fees for the different
13 types of facilities. And that regulation does not
14 include fees for a production facility licensed
15 outside of Part 50. And because as you've heard today
16 we're talking about something called 7X. Therefore
17 this regulation would need to be updated.

18 So the NRC staff position is that we are
19 proposing to revise 10 CFR 170 again to extend the
20 applicability of that regulation specifically to
21 reprocessing facilities. We would also be proposing
22 to establish what those fees are or the schedule of
23 fees. And again no alternatives to rulemakings were
24 considered because Omnibus Budget Reconciliation Act
25 tells us we need to do it by rule.

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1 In this case for this topic, NEI didn't
2 necessarily talk very much about it but acknowledged
3 the fact that in terms of submission of a license
4 application it would required them to submit the fees,
5 whatever those fees are, prescribed in 10 CFR Part
6 171.

7 And again in the previous meetings we've
8 had no other input. But again because the staff is at
9 the proposal stage, we want to make sure that people
10 are aware of what we're planning to do as we go
11 forward.

12 And the last bullet is kind of a
13 reiteration of the first bullet.

14 So the third issue that I want to talk
15 about is the other part of our fee structure which is
16 in 10 CFR Part 171 which is the annual fees. And when
17 we identified this gap we specifically stated that 10
18 CFR 171.3 does not again within its scope -- Up front
19 in these regulations we define what the scope of the
20 regulation. The current regulation does not include
21 reprocessing facilities.

22 On the next slide, this should be old hat
23 by now. NRC's proposed position is to revise 10 CFR
24 Part 171 extending the applicability to reprocessing
25 facilities, establishing what the annual fee is. We

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1 did not look at other alternatives to rulemaking
2 because the statute says we have to do it by rule.

3 For this topic as well, there was no input
4 in our previous meetings or any of the written
5 submissions. And again we did not consider
6 alternatives because we're constrained by statute.

7 Not so meaty in terms of the gap
8 integration. These all concern issues that are
9 defined specifically and addressed by statute. The
10 rulemaking is the only alternative considered. And to
11 the extent that we've had stakeholder input we've
12 considered that.

13 In the summary that we put forth we didn't
14 identify any specific questions. However, as we were
15 getting prepared for the meeting, I tossed these up
16 because you know there's nothing worse than giving a
17 talk and actually having no one say anything
18 afterwards. So these are for your consideration.

19 And with that I'm going to sit down.

20 MR. CAMERON: Thank you, Bret.

21 Do we have questions and comments on all
22 this? Mary?

23 MS. OLSEN: I have again a conceptual
24 problem. I'm sure there's probably a simple answer.
25 But Price Anderson as it applies to the reactor fleet,

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1 it gives a nice cap on the liability. But up to that
2 cap everybody's sort of joined at the neck and
3 everybody pays in.

4 So like who -- How does it work for Price
5 Anderson to apply to something like this if there's
6 only one? Where is its peer group that's joined at
7 the neck? Or is it in fact the entire industry?

8 DR. LESLIE: Maybe I'll let Rod try to
9 address that or someone else. But I can say for
10 instance there is a specific single facility that is
11 also identified in 10 CFR 140 which is the MOX
12 facility. And there's a specific limit and there's
13 only one licensee there. But I think -- Rod, do you
14 want to --

15 MS. OLSEN: One perspective licensee.

16 DR. LESLIE: Right.

17 MR. CAMERON: Good clarification.

18 MR. McCULLUM: Yes. I don't think I'm in
19 a position here to extend the liability of a
20 reprocessing or recycling facility to all the reactor
21 owners and operators. So there would have to be --
22 And I'm not an actuary and I haven't stayed in enough
23 Holiday Inn Expresses to be one. But it could be
24 worked out along the lines of the MOX facility.

25 But I'm not saying that it's not something

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1 that should be considered. But there's a lot of
2 discussions, a lot of negotiating, that would have to
3 be done on that. And I think the path that NRC is on
4 for now is appropriate.

5 MS. OLSEN: I don't understand what the
6 path is.

7 DR. LESLIE: First for that, it would
8 identify specifically that -- Let's just say for
9 instance that we were approved to go forward with the
10 7X. We would have to revise 10 CFR 140 to say Price
11 Anderson Act applies to facilities licensed under 10
12 CFR 7X.

13 We would have to identify what that limit
14 of liability was. And again this would go through
15 rulemaking. And we would take the information that is
16 available to address what that appropriate limit is.

17 And so today all we're seeing is this is
18 kind of where we would have -- what we would have to
19 do. We're not necessarily saying what the amounts are
20 or the details. But this is kind of giving you an
21 idea of where we're headed.

22 MS. OLSEN: So if there's only one and
23 there's a limit, then that one would pay it.

24 DR. LESLIE: I'm not the best -- I'm the
25 person presenting the information. I'm not the person

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1 who wrote and did the analysis. So I will take that
2 as an action and get back to you and perhaps we'll
3 need to beef up what we've written so far.

4 MS. OLSEN: Yes, get back to me. I'm
5 really curious.

6 MR. CAMERON: Good. We'll close that loop
7 and as Bret said all of this, the rationale, the
8 process, everything, will be explained in the
9 supplementary information to a proposed rule. But you
10 can get the information before that.

11 Okay. I'm going to go back out to the
12 audience and go to Bobbie Paul for some discussion.
13 Bobbie.

14 MS. PAUL: Thank you all for everything
15 you've shared. It's been a long day.

16 I did want to report that Georgia EPD I
17 did talk with Director Alan Barnes and Jim Hardeman
18 who heads up our radiological. He said to say hi to
19 you, Mark. And they were not invited. So Jim had
20 seen something a couple of days ago on the site.

21 I was really interested in hearing about
22 the inconsistency that you talked about, Mark, about
23 EPA DOE and how the states are caught with that.
24 We're extremely interested in tritium because of SRS
25 and because of around Vogtle.

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1 And I assume that most of you know that
2 efforts are underway in different groups around the
3 country to try to tighten the EPA standards on tritium
4 from 20,000 picocuries per liter to 400 or 500, at
5 least, as a health goal or something. I think it's
6 passed in California, maybe in Colorado as well.

7 And we do know that from our monitoring
8 from years back of the ten years that we did have
9 environmental monitoring of SRS releases into Georgia
10 that SRS of course recorded many times well over 220
11 picocuries per liter on site or above.

12 And I guess the last thing I would say is
13 that I'm not sure who were all stakeholders. I know
14 it takes a village and I know there's NEI, the
15 industry, AREVA, the individual company. And again I
16 would just like to implore that the stakeholders on
17 the ground and especially in Georgia and especially in
18 the counties that sit directly across from Savannah
19 River site and around Plant Vogtle, Burke County,
20 Screven County, Effingham, Jefferson, parts of
21 Richmond County, that these communities have felt shut
22 out in part of a silence around SRS for years for
23 decades. And that if anything that we can do with
24 Georgia or other things that you can do to reach out
25 on the front end we're looking at the back end of

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1 something that we haven't solved the problems with.
2 But I think we would solve more problems if more
3 common sense people were at the table.

4 MR. CAMERON: Okay. Thanks, Bobbie.

5 And this process is for what's called the
6 -- used to be called I guess the technical basis and
7 now at least reading the Federal Register notice it's
8 called the regulatory basis. That really is what the
9 Commission needs to see to approve the rulemaking. So
10 there's going to be reiterations of this process for
11 the development of the proposed rule, the proposed
12 rule.

13 And so thank you for those comments and
14 they will be well noted. I'm not going to touch the
15 people with common sense at the table. But thank you.

16 And this is Suzanne from the League of
17 Women Voters in South Carolina.

18 MS. RHODES: Yes.

19 MR. CAMERON: Not Georgia.

20 MS. RHODES: No, not Georgia.

21 MR. CAMERON: South Carolina.

22 MS. RHODES: I don't know if they're
23 watching this. By the way, I thank Tom and some of
24 the other folks for getting the word out. That's how
25 I heard about it.

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1 The League's been following particularly
2 Savannah River for decades literally. And I have sort
3 of a common sense thing. I think we need to resolve
4 some really important challenges, particularly DOE,
5 NRC and industry, that have come up this year. And I
6 think it's a good time to focus on learning from
7 experience and setting priorities. I'm speaking for
8 the League.

9 The need for reprocessing seems to be down
10 the way. Our experience with reprocessing isn't that
11 great. Neither is it by the way with MOX which is
12 another concern of ours, both of which are expensive
13 and not proven. And recently I'm not sure how many
14 are aware, but the SRS experience with plutonium has
15 been judged unsafe.

16 So we think that industry, NRC and DOE
17 ought to look together at hard and onsite storage
18 casks, learn what we can from other's experience in
19 reprocessing and MOX and take care of our immediate
20 needs as best we can this year with our limited staff
21 and funds.

22 Thank you.

23 MR. CAMERON: Thank you very much,
24 Suzanne. And Suzanne gave us a written comment that
25 we're going to attach to the record and that the staff

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1 is going to put into the record. Suzanne, what is
2 your last name for the record?

3 MS. RHODES: Rhodes, R-H-O-D-E-S.

4 MR. CAMERON: Okay. So, Brandon, you have
5 that. All right.

6 Well, thank you all for -- Oh, we have
7 someone else. Oh, I'm sorry. Yes, sir.

8 MR. EVANS: Hi. I'm Peter Evans. I'm not
9 affiliated with anybody or any organization. But I
10 live here and have property here and just like to give
11 you an individual's concerns here.

12 A major concern is having a for profit
13 entity being involved with a reprocessing facility.
14 There are so many areas or things that could come into
15 play such as cost cutting resulting in risky
16 practices, shareholder pressure, pressure from
17 politicians, many concerns there.

18 And then also you're dealing with an
19 immensely potentially deadly substance or substances
20 here. And if there is a major accident here there
21 could be huge damage and especially if some of this
22 got into the aquifer. And then you could easily get
23 into probably the hundreds of millions of dollars if
24 that were to occur.

25 And you broached upon or talked about the

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1 level of insurance that you would have for the MOX
2 facility. But you did not say what that level is.
3 Earlier we heard mention of \$1.2 billion for one
4 cleanup. Would that -- Is there an insurer that would
5 give insurance of that amount? Are you going to be
6 realistic in how high the potential damage could be?
7 The numbers are horrendously high. And this is of
8 great concern.

9 And then also we all worry about having
10 more nuclear activities in an area like ours where
11 it's a major metropolitan area. We've got major
12 aquatic water resources here, rivers. We've got the
13 City of Savannah. We've got Hilton Head depending up
14 on the Savannah River for their drinking water. And
15 none of this seems to come up.

16 But in the future you've got to think
17 about this before you think of any other expansion
18 here. I mean this is a growing area. And many of you
19 may want to retire here. So please keep it in mind.

20 But thanks again for coming here and
21 having the public forum. It's really appreciated.

22 MR. CAMERON: And, Peter, you're from
23 right here in Augusta, Georgia.

24 (Off the microphone comment.)

25 You're from Aiken. Okay. Thank you,

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1 Peter. And I just -- Your concerns apply to a generic
2 reprocessing facility. But I just wanted to -- They
3 were stated in terms of here, in other words, this
4 area of the country. I just wanted to reiterate that
5 there's no -- We're not here because there's any
6 indication that this is where we might ultimately get
7 a license application for a reprocessing facility.

8 But thank you very much for that. And if
9 any of our MOX staff wants to talk to Peter about the
10 limit that he brought up, I would hope that you would
11 do that.

12 Jack Davis.

13 MR. DAVIS: Yes. Thanks, Chip.

14 I just wanted to mention because it's come
15 up as you said several times that this is actually the
16 third meeting we've conducted this year. One was done
17 in Washington, D.C. One was done in the West in
18 Albuquerque. And now one in the Southeast. So it's
19 not indicative of "Oh, we think that the facility is
20 going to be here or there." We're trying to get a
21 broad perspective of views across the country.

22 MR. CAMERON: Thank you for that, Jack.
23 And Mary.

24 MS. OLSEN: I'm not trying to say that you
25 guys don't mean every word you just said. But we all

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1 have on our computer hard drives all the slides from
2 Savannah River site. You know, what do they call
3 themselves? We're calling them EI-EI-O because they
4 changed the name to farm instead of green energy park.

5 But come on. They've got reprocessing all over their
6 overheads. So it's not like this community hasn't
7 given indications that this was an idea.

8 So I can hear you that you mean what you
9 say about your choice of meeting location. But I just
10 need to hit the nail on the head because there's been
11 two or three years of me coming down from North
12 Carolina from this area to hear about reprocessing.

13 MR. CAMERON: Yes. And I don't think
14 we're saying that there's no idea that there might be
15 interest in reprocessing here. So thank you for that
16 and thank you all for a great discussion and attention
17 today. And I think we're ready to close out for
18 today.

19 We're going to start at 8:30 a.m.
20 tomorrow, a half hour earlier. And I apologize for
21 those who are driving. But there are comment or
22 feedback forms. There are some for today. This is to
23 help the NRC. And we've already gotten some process
24 suggestions today. There's one for today. There's
25 one for tomorrow.

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1 There will be coffee out in the morning.
2 And I will save coffee for all of you who are driving
3 in from South Carolina. And you can leave your badge
4 and name tent overnight.

5 Okay. Thank you all. I think we're
6 adjourned unless anybody has anything further. Thank
7 you. Off the record.

8 (Whereupon, at 5:00 p.m., the above-
9 referenced matter was concluded.)

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