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NUCLEAR REGULATORY COMMISSION

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MEETING ON A POTENTIAL RULEMAKING FOR SPENT NUCLEAR
FUEL REPROCESSING FACILITIES

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TUESDAY

JUNE 21, 2011

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AUGUSTA, GEORGIA

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

PARTICIPANTS:

SVEN BADER, AREVA

JIM BRESEE, US Department of Energy

TOM CLEMENTS, Friends of the Earth

SUSAN CORBETT, South Carolina Sierra Club

YAWAR FARAZ, US Nuclear Regulatory Commission

JOHN GREEVES, JTG Consulting

BRITT HILL, US Nuclear Regulatory Commission

BRET LESLIE, US Nuclear Regulatory Commission
ROD McCULLUM, Nuclear Energy Institute
ALEX MURRAY, US Nuclear Regulatory Commission
MARY OLSEN, Nuclear Information and Resource Service
WENDY REED, US Nuclear Regulatory Commission
KEVIN STRICKLAND, South Carolina Department of Health and Environmental Control
DEREK WIDMAYER, Advisory Committee on Reactor Safety
MARK YEAGER, South Carolina Department of Health and Environmental Control
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PROCEEDINGS

9:13 A.M.

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

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

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

The NRC, obviously, is an independent
agency. We're charged with the protection of public health and safety in the commercial uses of radioactive material which differs somewhat from what DOE does. As part of our mission, we set regulations that the licensees must follow to ensure public health and safety and for the last several years we've been working on the development of a potential rule for reprocessing.

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

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

MR. CAMERON: Thanks, Jack. And let me just take a few minutes on some process issues. I'd
like to talk about the format that we're going to be using for our discussion over the next two days, some simple ground rules to help us to have a productive meeting, then do some introductions around the table, and then I just want to do an agenda check with you to make sure that everyone knows what we're going to be doing.

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

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

We have representatives from all of the affected or concerned interest on this issue around the table. The NRC staff is also at the table and they're here to serve as a resource for you and to occasionally ask you to questions about your perspectives that's going to help them to formulate the technical basis for moving forward with this reprocessing rulemaking. There's going to be
different NRC staff at the table, depending on the issue. And we'll introduce them to you when they come up to the table.

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

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

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

I would ask that only one person speak at a time. Most important reason for that is so we can give our full attention to whomever has the floor at the moment, but also so that we can get what I call a
clear transcript. We are taking a transcript of the meeting. It's going to be the NRC's record of the meeting. It's going to be the public's record of the meeting and we have Brandon Paterson in the back of the room. He's our court reporter, stenographer. So one person at a time will help Brandon to keep track of who is speaking.

And when I come out to those of you in the audience, if you could just introduce yourself to us. I think Brandon is going to be able to keep track of the people at the table in terms of who is speaking so that you won't have to put your name tent or you won't have to introduce yourself all the time. And I would just encourage you to all participate fully, try to be constructive, relax, and Mary has already testing the name tent up. Yes.

Do you have a question?

MS. OLSEN: I do. I am hesitating, but I need to do this and it's really before you get into your content. A lot of staff time could be wasted, a lot of our staff time has been wasted over the question of foreign participation and I understand that AREVA probably knows a whole lot about these issues, but what is the nature of its stake and why is it at this table?
MR. CAMERON: Okay, we're going to get to that when we go to discussion, Mary, but thank you for putting that on the table and I'll go back to you when we get to the appropriate point and that will come soon so that we can discuss that, okay?

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

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

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

And if you could just introduce yourself and affiliations and one or two sentences of what you
would like to see come out of this workshop or concerns. This would be one time to do it. And I'm going to keep track as sort of a beginning agenda check.

Mary?

MS. OLSEN: Mary Olsen, the Southeast Director of Nuclear Information and Resource Service, members in all 50 states, founded in 1978 by grassroots activists, here to affirm that there is not a single national mandate when it comes to plutonium. In our view, it is not an element. It is an addiction and this meeting has to include the idea that we are not necessarily here in consensus.

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

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

My name is Susan Corbett. I am the State Chair of the South Carolina Sierra Club here in South Carolina. We have about 5400 members and beyond that we are part of the Common Agenda which is a cooperative collective of all the conservation groups
in the State of State Carolina with about 50,000 members, including thousands of members here in the Aiken, North Augusta area.

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

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

MR. CAMERON: Thank you, Tom. Jim?

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

MR. GREEVES: Is this on?
MR. CAMERON: A green light will tell you if it's on.

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

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

MR. CAMERON: Thanks, John.

MR. MURRAY: Yes. Good morning. My name is Alex Murray. I'm with the U.S. Nuclear Regulatory Commission out of Rockville, Maryland. I have worked in both government regulatory agencies and also in
private industry. And I've been in and out of reprocessing, spent nuclear fuel, high-level waste issues for decades, which is amazing since I'm only 28. Thank you very much.

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

MR. MURRAY: Twenty-nine.

MR. CAMERON: Thank you, Alex.

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

MR. CAMERON: Thanks, Sven. Wendy?

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

MR. MCCULLUM: I'm Rod McCullum of the
Nuclear Energy Institute and I just want to thank the NRC for holding this workshop. I think this is the third one we've done. We found the others very useful and I know the materials that are in the booklet give us a pretty good window into what NRC is thinking at this point and look forward to discussing it.

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

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

MR. STRICKLAND: My name is Kevin Strickland. I'm with the South Carolina Department of Health and Environmental Control. I'm here to monitor the proceedings today and to observe it and to engage whatever facilities that I may deem necessary.
MR. YEAGER: My name is Mark Yeager. I'm with -- I work with Kevin at the Department of Health and Environmental Control, Division of Waste Management. We administer the Agreement State Program and our interest is the ancillary licensing that may occur as a result of proposed commercial facilities. I'm also here to represent Conference of Radiation Control Program Directors and I'll be sharing the results of this meeting with the board of that organization. They are a group of stake radiation regulatory programs and I know that they have interest in the proposed rulemaking.

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

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

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

I just want to go to one of the representatives from our Office of the General Counsel to just state what the rule is on foreign ownership
and then come back to the issue, people around the table. I think Rod wants to say something about that. But it's an important issue raised by Mary, so let's take care of it right at the beginning and then see if we can proceed from there.

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

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

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

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

Rod?

MR. MCCULLUM: Yes, I'm very glad one of the first things I was going to do was ask the NRC point out that rule and certainly AREVA's interest here is as they are part of the U.S. nuclear industry, just as Toyota is part of the U.S. car industry these
days, we live in a very global marketplace.

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

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

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

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

John Greeves?
MR. GREEVES: I didn't totally understand what Mary's question was, so hopefully she can expand. It was stated very quickly and I am interested in what her question was. I think you answered a question. Was that her question or did she have another one?

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

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

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

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

So I'm not asserting what their stake is,
but I'm asking, you know, if they're a stakeholder at this table, what's their stake?

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

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

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

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

   The other examples are probably not good and I'm sure they're going to be brought up, talk
about West Valley. We can talk about Hanford, but from an AREVA perspective, we believe we bring some information that's valuable to this conference here or this meeting.

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

Tom?

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

I'd like it clarified if we could and let me read from the Federal Register notice. "In mid-2008, two nuclear industry companies informed the NRC of their intent to seek a license for a reprocessing facility in the U.S. An additional company expressed its support for updating the regulatory framework for reprocessing, but stopped short of stating its intent to seek a license."
I wonder if we could clarify for the record which two companies were the ones. I'm aware of one of them, but I'm not aware of the other and -- because it was mentioned in the Federal Register announcement, I'd like to know more why we're here because of the companies' request, if we could.

MR. CAMERON: Okay, fair enough, Tom.

Rod?

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

MR. CAMERON: And Susan?

MS. CORBETT: I think one of the things we're going to be talking these next two days is the terminology. And I would like to suggest that we don't call it recycling at this point and that we continue to call it reprocessing which is what it is, until we've reached that part.
MR. CAMERON: Okay, good. And we will get to that during Wendy's presentation. One last sentence. Is it going to be sort of e.e. cummings-esqe?

(Laughter.)

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

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

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

We are focusing on the regulatory framework for the regulation and licensing, licensing and regulation of a reprocessing facility and we've
already heard from people about what they think about whether reprocessing should be a viable option. So that's on the table. And I'm just going to ask everybody to sort of suspend their disbelief in a sense and talk about what should be in the NRC regulatory framework on this issue.

Second point on agenda is that we're going to have NRC staff teeing up each agenda item with a presentation and they'll tell you what the issues, what the NRC has heard from stakeholders on the issue, and what the NRC's initial thinking is on the issues. And when they do those tee-ups, I'm just going to ask you to hold your questions until they're done with their complete presentation so you can get the entire picture.

The last over-arching issue that I want to mention is that we know that in this area of the country, the Southeast, that there are other issues of concern, for example, the licensing of the MOX facility down the road. This is a meeting on the reprocessing framework, so we're not going to be discussing MOX, except to the extent there's an implication from the MOX facility that may be applicable to the development of the regulatory framework for reprocessing.
But if there are questions about MOX, we have asked two members of the NRC staff to be here to talk with you offline any questions or concerns about that and we have David Tiktinsky who is here from our Office of Nuclear Material Safety and Safeguards. We have Brett and I won't try again because I'll probably blow it. And just give it to us again.


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

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

MR. MCCULLUM: Yes, and this might be an issue for Jack to discuss. One thing I didn't see specifically on the agenda, but I think it would be very interesting to all the participants here, particularly since we're looking at schedules upon which we have to comment on things is what NRC's potential budget scenarios are for this effort. What
you'll be working on in Fiscal Year -- the rest of Fiscal Year 2011 with your funding which ends in October for those who aren't familiar with the federal budget year and what your budgeted to do in 2012 and beyond.

MR. CAMERON: Okay.

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

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

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

Jack Davis.

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

But I thought also we would talk a little
bit about who's doing the regulations, who is actually
going to write them and so on, because things have
changed recently and all folks may not be familiar
with that.

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

So there was a numbers of reasons to do
that and that's why you see underneath us and it seems
strange perhaps to be underneath the high-level waste.
But there's some things under way right now that
we're looking at name changes and things like that
that would help to better understand why it's there.

In addition to that, we work very closely
with our Office of Federal and State Materials and
Environmental Office which actually does the actual
turning of the crank, if you will, for rulemaking as
well as supporting us in the technical support
aspects. And then there's a number of additional offices that have been involved, rightfully so, and critically so: Office of Nuclear Security and Incident Response which helps us do safeguards and security, the Office of Nuclear Research which does a lot of our developmental activity and one that you don't actually see on here is our Center for Nuclear Waste Regulatory Analysis. It's a conflict-free, federally funded, research and development center down in San Antonio. They support us very heavily, not only in this area, but in a number of different areas. And we have several of their staff here today, one of which has organized the entire meeting which is Miriam sitting in the back there.

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

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

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

Obviously, there's limited resources in the Agency and they have to focus on the highest priority safety activities, as well as there's parallel rulemakings that are going on that also tie into the rulemaking for reprocessing which then obviously impacts the schedule, if it gets delayed or whatever schedule that they happen to be on. As well as we all are familiar with the Blue Ribbon Commission is deliberating on the national policy for the nation
with regard to the back end of the fuel cycle which would have implications to reprocessing.

If the Commission does direct us to proceed with rulemaking, it takes considerable effort. It takes several years to do. There's a number of things that would have to be done, finalizing the gaps, developing a rulemaking plan, developing an Environmental Impact Statement, regulatory guidance, SRPs, the whole nine yards.

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

Again, we don't know what their position is going to be yet. We haven't provided them our recommendation. That doesn't come until September of this year and then they will take so much time to look at that particular situation and then get back to us through a staff requirements memorandum which would either direct us to proceed or direct us not to proceed and in what time frame.
I think the important point here that I wanted to raise with all of these things and you can see the number of major deliverables that would have to be done to actually make a final rule, ample opportunity for public comment. We need public comment, stakeholders as well, and we actively go out and seek that because to do accomplished rulemaking like this, clearly we need to hear from all sides and what are the significant issues at hand.

So where are we now? As I mentioned, we are going to provide a regulatory basis document and a recommendation to the Commission the end of September. This would include staff proposed closures to the gaps. Shortly thereafter, we would have an Environmental Technical Report available. This would feed an EIs if we were to proceed with rulemaking.

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

Here, you can see just a few of the examples of other written comments that we've received from our Advisory Committee on Nuclear Waste and Materials, NUREG 1909. We, of course, have heard much
about the NEI White Paper which is the 7x which you've heard John Greeves talk about earlier.

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

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

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

You'll hear, as they talk over the next two days, they'll actually have specific questions that they're looking for comment on from the stakeholders here and then if you would rather submit
your comments through the web, you can do that as well. Our deadline is July 7th and that's necessary for us to be able to capture these comments and incorporate them as necessary to meet our deliverable in September.

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

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

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

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

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

MR. MCCULLUM: But the effort will be able
to continue throughout 2012?

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

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

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

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

(Off-mic comments.)

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

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

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

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

MR. DAVIS: Right. Again, I was talking from a technical perspective, right. When I mentioned the Environmental Technical Report which feeds into an EIS. We were doing preliminary work that would support that effort.
We don't have any design information, right? Even though we have Letters of Intent.

MS. OLSEN: On the rulemaking?

MR. DAVIS: Huh?

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

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

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

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

MS. OLSEN: I'm referring to a court decision, historically, that would mandate the Agency to do a Programmatic EIS on this rulemaking. And so when you put EIS there, I didn't know if you were just
having a typo moment or if you have forgotten this history. So we'll provide it to you. We'll be glad to do that.

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

Other questions for Jack? Thank you very much.

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

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

Wendy?
DR. REED: Thank you. Thank you, Chip.

Good morning, ladies and gentlemen. Today, I'm here to present to you NRC's staff preliminary position on how we think that a regulatory framework for licensing commercial nuclear fuel reprocessing facility should be developed and also to discuss with you some definitions that could be included in a new rule regarding those facilities.

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

The specific regulatory areas identified as gaps in the Code of Federal Regulations were identified as issues that would need to be resolved in order to license a reprocessing facility effectively and efficiently, and Gaps 1 and 6, regulatory framework options and definitions for reprocessing related to terms respectfully at two of those gaps.
And they were given the rating of a high priority gap that needed to be resolved. And a full description of these gaps are found in the Commission paper that is referenced here.

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

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

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

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

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

So with regards to Gap 6 with the
definitions is staff wants to incorporate existing
definitions where applicable into a proposed new rule.
And we also recognize that it would be very important to develop new definitions and to clarify existing definitions where needed, for example, the terms reprocessing and recycling. And that is one of the stakeholder feedback items we would like to receive today is what we should consider in these specific definitions.

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

With regards to previous stakeholder input for Gap 1, at previous public meetings, stakeholders showed general support for the new part in the Code of Federal Regulations and in the NEI White Paper, they have prescribed a similar approach to the NRC's proposed approach, is that they would use a Part 7x. However, it differs slightly in that in their view that it should be based more on the existing Part 70 whereas NRC staff proposed looking at the entire Code of Federal Regulations for development of a rule.
There's been a lot of discussion amongst all the stakeholders at previous public meetings about the -- how the framework should be developed. And there's been no strong opinion that NRC's alternative approaches of modifying Part 50 or modifying Part 70 should be used.

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

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

Now while we were developing Gap 1, there was sort of some regulatory areas that were identified that were not previously identified in the gap analysis. And various topics were identified and these are found in great detail in the draft
regulatory basis. But here are the topics that we're looking for feedback today are: emergency planning, fire protection, and seismic regulations and requirements.

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

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

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

Why don't we start by talking about the
development of the new part versus use of existing or changing existing regulations.

Rod, do you want to start off on that?

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

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

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

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

Mary?

MS. OLSEN: It's extremely difficult to like any regulation that has to do with licensing nuclear facilities, but we defended Part 50. We defended it every single step of the way. And it took Congress to override the will of the people and so this whole thing about Part 52 and one-step licensing, well, oh boy, we're just going to go off and start all over. Well, there's some elements of Part 50 that we will continue to defend. And one of them has to do with the fact that the local impacted community has rights that should be considered not only in terms of construction, but also in terms of operation, so there's elements of Part 50 that we'll continue to defend.
MR. CAMERON: Okay, and that's a good point and we're going to throughout the next two days, when we get to some of the specific topical issues, talk about those pieces of Part 50 that should be incorporated into this new regulation. So as I understand it, it's going to be a new part, but you're going to be considering, and Wendy, correct me on this, you're going to be considering and we're going to be talking about what aspects of Part 50 should be incorporated in the new part?

DR. REED: That is correct.

MR. CAMERON: Okay, Rod?

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

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

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

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

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

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

Tom?

MR. CLEMENTS: Thank you. First, let me raise another term and then I'll talk about recycling. In the Nuclear Waste Policy Act, the term spent nuclear fuel is defined and in DOE regulations the term spent nuclear fuel is consistently used. There has been a move lately, and I've asked for
clarification from DOE where it's cited in the regulations and have not received a response after months of trying, where the term "used nuclear fuel" is used.

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

Second, I'm aware of the definition that the NRC -- the NEI put forward in its White Paper about recycling. I'm sorry, I'm fumbling for that here. And I think that the definition put forward was inadequate. As we all know, there are a host of waste streams that come from reprocessing including so-called low-level waste, a large volume of greater than Class C waste, high-level nuclear waste, fission gas. To my knowledge and the reprocessed uranium which may be another definition you may want to look at, RepU.

All these materials are not recycled. And I would ask the question if NEI or AREVA or someone else would present, what percentage of materials and
I'm talking about all of the radioactive materials that come from reprocessing at the UP2 facility which was dedicated to reprocessing of foreign spent fuel before every country pulled out except -- now it's only France is left reprocessing at La Hague, because every other country has stopped sending spent fuel.

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

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

And I would add, just for your background, I have been outside the reprocessing plants at La Hague for -- not Rokkasho, but Tokaimura. I have visited the RT2 plant, the crumbling ruin at Krasnoyarsk. And I've been inside the West Valley
reprocessing plant. So I've been following the issues quite closely.

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

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

MR. BRESEE: Yes. I do apologize on behalf of those who have been asked for information and have not responded. I don't know the origin of the problem. But used versus spent is simply a convenience within our own organization. We assume at some point in the future the United States will make a decision on how to proceed with the handling of the
fuel which has been used in a nuclear reactor. If the
decision is made to reprocess or recycle or there are
so many other terms that might be used, for example,
I'll be at a meeting with a number of other countries
in Vienna next week to discuss partitioning which is
another term applied to the issue of processing fuel.

Back to the issue of used versus spent.

If the decision is made to recycle or reprocess, that
would be for the purpose of using some portion of the
fuel as new fuel. If the decision is that it will not
be recycled or reprocessed or partitioned, then it
would be disposed of in -- probably in a deep,
geologic repository.

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

So I apologize that we haven't responded
and if Tom, if you will provide me a copy of the
particular letter in which you've requested the
definition, I will see to it that it comes back to you
MR. CAMERON: Okay, thank you very much, Jim.

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

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

A very simple answer. And please introduce yourself.

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

MR. CAMERON: Okay, and as Jim pointed
out, the use in DOE is purely for a matter of DOE convenience and doesn't have any connection to any regulatory framework. So I think that's particularly clear and thank you Britt and let's go to Rod and then Sven.

Rod?

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

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

As far as the definition of recycling versus reprocessing goes, our intent there and we recognize the legal definition of spent fuel is what it is and Britt's very correct. When I speak publicly
I always say used fuel and my communications people demand that I do, but then when I write a comment letter to NRC, I have to write spent fuel because I'm responding to the legal regulatory term.

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

To say that what we understood as reprocessing in the '70s and '80s is what we will be regulating in the future, we need to be comprehensive enough in our definition so that we can cover the range of technologies that are currently being considered. I'll point to this -- in terms of is it really recycling? Is that a misrepresentative? This is a clear, Diet Pepsi container that I finished now. It may have been a red dashboard in a car in its previous life. It might be part of a blue tennis shoe...
in its future life. And in both cases, it would have a slightly different chemical make up than it does now.

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

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

I know, and again, this is why our foreign owner is here at the table. They have a lot of experience in France reducing the waste streams. They've learned a lot in the years they've done that. I don't know if it's quite the same as the Pepsi bottle example yet, but I would like Sven to speak to the fact that we do have a good handle on the waste streams and can, in fact, as these technologies
continue to advance and we want a definition that allows them to advance, get more and more energy out of it and less and less waste streams.

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

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

(Laughter.)

You know --

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

(Laughter.)

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

(Laughter.)

MR. MCCULLUM: But I think the answer -- and I will believe the answer to your question is yes.
I think whether we ultimately end up calling it recycling or calling in reprocessing, we can agree on a definition that is forward-looking, encompasses the range of technologies, not just what we know the French do that is called reprocessing, but what General Electric, Westinghouse might do that they would prefer to refer to it as recycling. Just don't get ourselves too tied to the specific meaning of a legal definition that was invented 20 years and several technology iterations ago.

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

But Sven, go ahead.

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

In general, we do have presentations out in the public domain that discuss the waste streams from a recycling facility. I know you've commented on them in the past. So they're out there. The bottom line is 96 percent of the fuel assembly is recyclable,
because 95 percent of it is uranium, 1 percent is plutonium, the other 4 percent is fission products. Fission products go into a vitrified waste stream. The plutonium gets recycled into a MOX fuel assembly or into a fast reactor fuel assembly. So we're talking transitions here.

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

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

I think it's something that's difficult to establish in the United States and with respect to the low-level waste streams there's another fundamental difference in France. In France, we minimize the
volume of low-level waste produced. When we come to the States and say here's what our volume is, everyone starts saying it's a lot of greater than Class C. A lot of it is the reason we have minimized the total volume.

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

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

I'm running us until about a quarter to take a break. We're a little bit behind, but we have lots of flexibility. We have an hour and a half for lunch, so we may cut that back. We'll see where we
are at 12. But let's hear from Mary and then we'll jump over to Alex and John and then come back to Susan.

Mary.

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

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

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

The standard contract is for disposal, right? Well, okay, if you don't dispose of it, are we actually talking about nuclear utilities? Sending their own fuel for resource recovery? Because if they want DOE to take it under the standard contract, it's no longer civilian waste is it? It's DOE waste. And I've had little toe-to-toes with NNSA about plutonium. I'm an intervenor in the MNFF and they will tell me straight up that all the plutonium is plutonium is plutonium and all they're committed to is in the MNFF, you know, dual-track MOX Surplus Plutonium Disposition program is a certain number of tons. They won't tell
me that any given shipment is for MOX fuel or any
given shipment is for future new pits or any shipment
might be for that canceled program called
Immobilization.

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

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

Instead, they had fission products going
through there. They had plutonium going through
there. That's what we have in the weapons now, in the
DU weapons all over the battlefields. They're
wondering where the fission product is coming from.
Well, it's because they sent some of that uranium back through and that DU is laced with fission products and plutonium.

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

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

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

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

MR. CAMERON: Okay. And --

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

MR. CAMERON: Sure.
MR. CLEMENTS: What percent of the irradiated MOX fuel is reprocessed?

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

But La Hague has done recycling of spent MOX fuel. It's on the order of 100 metric tons, maybe 200 metric tons. I can get you the numbers specifically. So it is a process that we can perform. But then again, that's really more for uranium recovery process.

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

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

MR. CLEMENTS: The spent MOX is stored. There was a demonstration that the MOX could be reprocessed. There were problems with that. It's simply stored, so any definition considering recycling as a definition, you have to look how far that goes.
The spent MOX, as of now, it has -- it's been demonstrated, but not a matter of commercial basis, that it's reprocessed and separated materials are stored or reused.

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

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

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

(Laughter.)

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

MR. MURRAY: Gee, Chip, come on.

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

MR. MURRAY: I'm just a young dude. One of the reasons that we're having this meeting is to try and solicit some feedback here and we seem to be
talking a little bit across each other, recycle, you don't want recycling; one percent, no, it's more than that.

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

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

So I throw it open, what would the people here consider to be recycling? Is it anything from spent nuclear fuel? Is it again, the -- I'll say useful components, whatever those might be? What are
useful components? What definitions should we put in this proposed new rule.

So please, chip in, everybody.

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

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

Thank you, Alex.

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

I'm reading it here now and I'm having trouble understanding how somebody could conclude that it's inaccurate and misleading. Incomplete, anyhow -- the regulator is going to have to put a set of definitions in the rule and it's not going to capture
all of the things you've just been talking about. Those, to me, are in a technical basis document. And so some point, either the NRC or other stakeholders, if you don't like the definition that the NEI White Paper presents, give us something else to talk about. I think it's unfair to call it inaccurate and misleading. If you have something better, please bring it forward.

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

MR. CAMERON: Okay, John, and we'll be
coming back to you with that threshold question that
Alex raised to try to get to that definition, but
you're also putting another thing on the table for us,
which is a sort of a regulatory structure issue about
what's appropriate for the rule, versus what's
appropriate for what you called a technical basis
document which may be an NRC guidance document. Okay?
But thank you for doing that and let's go to Susan
and Rod.

Susan?

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

So they need to rename it in order to sell
it in the future. And that's what they're trying to
do. They're trying to equate this as some sort of
fuzzy green warm clean thing activity and we know that's not what it is. It's a marketing tool that they are trying to employ, they're using to sell this. We got a good example of that this past year. I think it was Senate bill 232, what was it, Tom? They tried to sell this in the South Carolina Senate and of course, you get these legislators who don't really do their homework. So they attach this oh, recycling spent -- yeah, it's recycling. It's got to be green. It conservation community is going to love it. We're going to vote for it.

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

MR. CAMERON: So Susan, you're bringing up this perception issue. Are you suggesting that no matter what would be in the definition, what would be in the definition may be acceptable, but the term that's used, in other words, what's being defined, that might be offensive to people? If you understand what -- where I'm going. You're talking about the
perception, call it greenwashing, okay. All right.

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

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

(Laughter.)

I think this entire discussion is emblematic of why we need a technology-neutral definition. I hope -- I think this has been good input. In the interest of full disclosure and total honesty, yes, in recycling, you do recover plutonium. But the reason you recover is because you intend to destroy it. When you turn MOX fuel or whatever fuel you burn in your next reactor, you split the plutonium in half and as Sven mentioned, you end up with less plutonium at the end of the day.

While we don't want to be accused of greenwashing this and misrepresenting it, so if recycling and reprocessing is an outdated term, maybe there's a need to come up with a new word. You know, we do need to recognize that there is a substantial environmental benefit to do this. You are taking plutonium out of the environment when you do this. You're also potentially with some technologies, taking other things.
Amercium is one of the things that is the most challenging radionuclides in disposal. If you reprocess the fuel at a certain time after it's been initially burned in a reactor, you can actually shorten or cut back on the amount of americium that builds up under time in the used or spent fuel.

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

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

So that's it.
MR. CAMERON: Okay. Thanks, Rod. Let's take a break. And I just -- before we break for lunch, we're going to go out to all of you in the audience. But let's take a break right now and come back and address the broad issue that Alex raised and keep in mind that an appropriate definition for a rulemaking and maybe there needs to be a new term. We've heard some suggestions on new terms, but let's take a break until how about five after? There's complimentary coffee by the front desk. There's water right over here. And if you want a snack of any type, there is a pantry, market pantry where you can buy snacks. But complimentary coffee. I don't know how long it will last, so we'll stampede out of the room. But thank you very much for this morning's discussion.

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

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

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

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

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

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

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

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

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

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

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

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

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

So let me throw that out to the panel
members, and see what feedback the NRC staff can obtain, please. Thank you.

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

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

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

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

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

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

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

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

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

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

MR. CAMERON: And Susan?

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

Because I think that if you stick with reprocessing, you're creating a problem for the industry, who doesn't want to use that term, for the reasons that I discussed earlier.
And they need this new term, recycling, to sell these new technologies. Because it goes in line with the green economy, and the warm fuzzy feelings that come with the idea of true recycling.

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

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

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

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

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

MR. CLEMENTS: Thank you, Chip. It seems to me that, in response to Alex's question, that reprocessing, as far as the overall process with various waste streams, with the reprocessed uranium
stream, with the plutonium stream, is what needs to be defined.

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

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

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

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

I think you need to not get into speculative issues. The industry has not really
presented percentages of materials recycled. What happens to the waste, is it recycled?

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

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

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

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

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

And the complex for a recycling facility requires you to receive materials -- it would give you the opportunity to receive and store materials. So the word storage is in here.
It would give you -- you need to process materials. So the word process is in this definition. It would include, in most contexts, fuel fabrication. Take it, put it in a different form: fuel fabrication.

So fuel fabrication is in this definition. In some contexts, you have a waste stream, and it would be vitrified. So this definition would anticipate vitrification and other associated activities.

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

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

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

MR. CAMERON: Let me ask all of you, in light of what John just said, that the NRC slides pose
this in terms of a definition of reprocessing versus recycling.

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

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

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

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

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

MR. GREEVES: Absolutely. It's -- Sven, help me out here. But the agency is about efficiency and effectiveness, and the enemy of efficiency and effectiveness would be to have a facility that had
four or five different licenses associated with it.

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

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

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

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

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

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

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

DR. REED: Yes, thank you.

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

DR. REED: Yes, it did.

MR. CAMERON: Okay. Thanks, Wendy. Thanks, John. Let's go to Rod, and I just would like to ask all of you around the table, including South Carolina DHEC, Department of Health and Environmental Control, and Tom, Susan, all of you, does this discussion that we've been having about the definition of a facility and what should be included under that
definition, does that help us get away from the
greenwashing, blah, blah, blah, blah, blah, blah?

Okay, Rod?

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

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

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

But very clearly, what John said is, we
need a definition -- and more importantly, we need a
regulation. You know, the definition is the easy
part, and then writing the regulation that covers all
the activities that will be done on this facility from
the time the used fuel is received at the gate to the
time both fresh fuel leaves the site, and also the
waste products to go to disposal leave the site.

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

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

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

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

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

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

(Laughter.)

MR. CAMERON: Thanks for that, Sven.

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

MS. CORBETT: What's the French word?

Maybe we should use that.

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

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

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

MR. BADER: In France, all facilities, nuclear-related, are under one regulation, one
umbrella regulation. And then they have accords, basically, with each of the operating facilities. So there's -- it's a model of efficiency, if you ask me. But it's significantly different than here in the United States.

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

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

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

MR. CAMERON: Okay.

MS. CORBETT: Your question was -- I think maybe a new name is in order here. Because I think the industry doesn't like reprocessing, and the conservation community doesn't like recycling. So
maybe we have to come up with something totally new.

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

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

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

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

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

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

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

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

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

MR. CAMERON: Okay. And just thinking about what Tom said, is that sometimes you're going to see the NRC refer to the NRC white paper, which is not
-- I'm sure the NRC would say it's not necessarily giving more deference to what the industry is saying. But it is an organizational tool, at any rate, to start looking at some of these questions.

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

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

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

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

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

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

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

Now there's a lot of interchange possible.
So I would really love to see you guys actually go
look where the problems have been, and learn from
them.

MR. CAMERON: Great.

MR. MCCULLUM: Yes, I think we have done
that, and we do continue to do that. Certainly, that
is the very foundation upon which our industry
maintains safety, is that everything that happens,
anywhere in the world, in a nuclear facility, gets analyzed and addressed at every facility in this country. And hopefully other countries will be the same way.

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

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

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

I had something I was going to say on
emergency preparedness, but maybe we'll get to that discussion next. I'll table that for now.

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

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

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

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

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

DR. REED: Yes.

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

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

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

DR. REED: Yes.

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

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

MR. CAMERON: Sure. Go ahead.

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

And my opinion is that the seismic design standards should be the same for the reprocessing
plant as for a reactor, given -- and associated buildings, particularly because of the spent fuel storage risk.

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

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

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

Number four, what does NRC need to consider when updating NUREG-1140? Please correct me if I'm mistaken, but just in looking through it, when
discussing dry cask storage, it said the fuel burn up for this analysis is soon to be 33,000 megawatt days, and I don't think that that's -- per metric ton of uranium -- I don't think that that's accurate, because of a higher burn up of fuel.

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

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

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

If were a DOE site were located, it could not be the site boundary, particularly of a large DOE site, like Savanna River site. The site boundaries would have to be right around the facility itself.
And that raises a question, but what about impact to DOE site workers that would be on the site, versus the public, who may be beyond the further site boundary?

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

And just one more point. As far as the spent fuel pool goes, it's my understanding that the Rokkasho site, for example, the pool is already full. It has about 3,000 metric tons of spent fuel in it. So the radioactive inventory is quite high, so that the seismic question comes into play here, if the pool were to be drained.

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

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

Thank you.

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

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

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

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

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

The type of emergency planning zone, and the type of emergency planning that you need, should be driven by the type of event you can have at the
facility, what the safety analysis would tell you. Do you have a potential event? Do you have the inventory, do you have the energy where you could trip the Environmental Protection Agency's protective action guidelines?

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

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

And I think if you can succeed in doing that, I'll refer last to the criticality. If you -- rather than try to regulate a specific process and how you would prevent that process from creating a criticality by mixing too much plutonium in the wrong
geometry, or whatever, you certainly want to regulate what is needed to prevent criticality in terms of the levels and controls, and that you need to be able to do that in the face of a design-basis earthquake, whatever is the appropriate earthquake hazard specified for that site.

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

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

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

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

DR. HAYES: Good morning. I'm Doctor Rose Hayes. I'm on the Department of Energy Site-Specific
Advisory Board for the Savannah River site, and I chair the Nuclear Materials Committee for that Board. And I just have a few comments to make.

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

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

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

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

Remember that we do have a 1982 Nuclear
Waste Policy Act. And following the findings of the Blue Ribbon Commission, then we probably need to rework that act.

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

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

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

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

MS. PAUL: Hi. My name is Bobbie Paul, and I'm the executive director of Georgia WAND, which stands for Women's Action for New Directions. We were founded about almost 30 years ago as Women's Action for Nuclear Disarmament.
We have been fervent watchdogs of Savannah River site for about 20 to 25 years, so we have a lot of concerns in the area. And I've made a lot of notes. And thank you for the opportunity. Some might be points that you could discuss, or not.

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

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

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

I have a question -- oh. First of all, Dr. Hayes, I'm glad you brought up reprocessing, because at the Blue Ribbon Commission, of which we
took part when they were here in Augusta, I believe
the outgoing president made a statement that they were
supportive, the CAB, the SRS CAB, of reprocessing.

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

    (Off-mic comments.)

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

    (Off-mic comments.)

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

    MS. PAUL: Get that on the record?

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

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

    The R&D. And that is because there are
materials that could be fed to the site, or to H
Canyon, and utilized in such R&D.
MR. CAMERON: Okay. Bobbie?

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

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

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

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

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

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

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

Yes? And please introduce yourself to us.

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

I'm just an individual, but I don't want nuclear anything. I don't want mining, I don't want transportation, I don't want recycling, I don't want
reprocessing, I don't want energy, I don't want weapons.

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

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

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

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

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

You know, I don't know. It's not even
tested. The soil, the people -- they are beginning to prove that there is cancer clusters around these plants. But nobody really wants to do any research into that, because they don't want to know what they may find.

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

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

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

Thank you.

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

(Off-mic comments.)

MR. CAMERON: Okay. Bobbie?

MS. PAUL: In regards to one thing that
Ms. Tatum said, I would just like you to know that there is currently no radiological testing in the state of Georgia.

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

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

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

MR. LESLIE: I'm Bret Leslie from the NRC staff. But it's kind of a teeing up for tomorrow. It was a useful clarification in terms of the framework for all the facilities that would be licensed, but that has a real impact in terms of what is the appropriate technique for evaluating safety at such a
diverse facility. And so it's just something to keep in mind when John Stamatakos goes tomorrow, because that's something that we're struggling with. So that's all.

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

Mary?

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

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

MR. CAMERON: Okay. Thanks, Mary. And I'm just reminded of the fact that, as we listen to
people from the public and I listen to all of you around the table, that there's a lot of things that we can all learn from each other.

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

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

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

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

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

MR. CAMERON: We have Derek Widmayer with us, who had some flight problems, and Derek is with the Advisory Committee on Reactor Safety. Do you want
to testify your microphone? Let's see if you can work it.

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

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

MR. WIDMAYER: Oh, yes. Okay.

MR. CAMERON: The rest of us introduced ourselves.

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

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

But any rate, that's that issue. And we have Dr. Brittain Hill, Britt, who's going to do waste and environmental. And Wendy Hill is with us -- Wendy Reed, sorry. And we do have a parking lot issue from this morning on the Environmental Impact Statement Mary Olsen raised for this rulemaking, so we'll get into that at some point.

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

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

MR. CAMERON: Okay.

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

So, the topic of waste really doesn't have all the allure of technical specifications, or emergency planning, but it does represent a very
important consideration for any facility that proposes to reprocess spent nuclear fuel.

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

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

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

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

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

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

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

In our current framework, high-level waste would need to be stored at a monitored retrievable storage installation that is operated by the Department of Energy. Now, somebody can correct me, but I haven't heard anything from the Department of Energy that they plan to develop a monitored retrievable storage installation, so really there's no
path in our current regulations to allow for the storage of high-level waste that would be produced by a potential reprocessing facility.

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

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

We would also bring forward the applicable parts of Appendix F in Part 50 that are related to the storage and treatment of waste at a reprocessing facility. Those would be brought in to our Appendix - excuse me, that would be brought in to our Part 7X. And I believe the terms that we would not be carrying forward, at least in our proposal at this stage, would
be the policy considerations in Appendix F that currently exist about high-level waste would have to go to a national disposal site within 10 years. We believe that's a policy issue, and not a technical issue, and the NRC is not in a position to establish national policy on when waste should be disposed of.

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

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

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

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

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

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

That's why at this stage, Staff is more
comfortable with using the same sort of approach we use at reactors for spent fuel storage than we would be using by bringing a whole new series of regulatory requirements into a new regulatory framework.

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

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

We received stakeholder input, of course, on this issue. A lot of the input focuses on a need for the government to develop an effective plan for nuclear waste storage and disposal in the United States. Obviously, that's a little bit beyond the scope of our ability to rulemake, but we are aware that, of course, the National Strategy for high-level waste and spent fuel disposal is being rewritten as we speak.
There's also concerns that have been raised about reprocessing would be adding additional waste to the current waste inventory. And absent a national strategy for disposal, this would not be the right thing to do at this time.

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

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

Now, those words originate in the Nuclear Waste Policy Act of 1982, which was put together to talk about a framework for disposal. It's important to remember the intent of these words, is to talk about what materials require geologic disposal, permanent isolation from the environment. It's those
materials that are highly radioactive and contain fission products in sufficient concentrations.

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

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

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

We are concerned, though, that getting that answer from Congress may take a while, may take some iterations, and wouldn't really address within
the framework -- time frames that we're developing the
new regulation under. We may not get the timely
answer, and the right answer in order to support the
ongoing rulemaking. But it is an option. We will be
asking the Commission to weigh in on this, because it
really is a policy option rather than a technical
option.

Staff's preferred approach would be to
clarify through the rulemaking process the terms
"highly radioactive," and "sufficient concentrations."
We believe that we can develop some functional
framework to allow a potential licensee to distinguish
between those highly radioactive materials that need
depth geologic isolation from those materials that
could be safely disposed of in a low-level waste
facility.

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

We received input from a number of
stakeholders on this issue that primarily focused on a
desire for us to include the definition of Waste
Incidental to Reprocessing, or WIR, as part of our
regulatory definitions. These stakeholders believe that including that definition would clarify what would not be high-level waste.

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

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

A third gap results, and is about waste confidence. And for folks that haven't been familiar
with that issue, NRC recently did a redetermination of
the technical information that was available to say
whether they had confidence that spent nuclear fuel
from any reactor could be safely stored until such
time that the country developed a permanent disposal
option.

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

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

After looking at the available
information, NRC Staff believes that an applicant
would need to evaluate the potential environmental
impacts from high-level waste storage. We just don't
believe that there is sufficient information at this time for NRC Staff to make a generic determination that we have enough technical information to say that high-level waste could be stored for at least 60 years beyond the licensed life of any potential reprocessing facility with no significant environmental impacts.

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

Our concerns with expanding the Waste Confidence Rule really focus on when the original Waste Confidence Rule was promulgated back in 1984 for nuclear power plants. We have had decades of experience in licensing and going through hearings on nuclear power plant operation. And the record at that time showed that there really were no significant environmental impacts associated with the storage of
spent fuel until such time that it could be disposed of. That led the Commission to establish the 1984 Waste Confidence Rule in order to increase the efficiency of the hearing process, rather than requiring people over, and over, and over again to analyze that there were no significant impacts.

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

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

So, we don't believe this is a significant concern for a licensee to address these potential impacts. We just don't believe that at this time, the NRC Staff can make a generic finding that there are no issues that would need to be raised associated with long-term storage of high-level waste from
We received some input, of course, on this issue. Many stakeholders believe that the license application for reprocessing should address the environmental impacts of solidified high-level waste. There is also concerns that any addition of reprocessing waste to the existing waste disposal issue would put an additional burden on the Commission's confidence for disposal of high-level waste in the United States.

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

On the waste classification issue, the essential issue here is that some radionuclides in reprocessing waste may not be in our classification tables in 10 CFR 61.55. For example, krypton-85 isn't in the current tables. There are some noble metals and some isotopes from the lanthanide series that we would expect from reprocessing. They just aren't in the existing waste classification tables, and weren't considered as part of developing those tables back in,
I think it was the 1970s.

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

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

Staff has been directed by the Commission to consider a comprehensive revision to 10 CFR Part 61, and that just occurred last year in the SECY Paper
I've got listed here. That is a Position Paper that the NRC Staff is working on. They're going to exploring options for that next year, and there will be some opportunities for input to that process. They'll be announced by our FSME Group later this year, or early next year.

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

That rulemaking is being expanded or considered to be expanded in order to accommodate different unique waste streams. The isotopes that we're talking about could be considered unique waste streams, as well, in which case Staff's proposal is for this rulemaking, Staff's proposal would be to require a site-specific performance assessment to see whether these unique waste streams could be disposed of safely and securely in a low-level waste disposal facility.
As part of that rulemaking that's currently ongoing, there are several alternatives being considered by Staff. The one I just talked about would be risk-informing the Part 61 waste classification framework, giving a comprehensive revision, or site-specific criteria. Again, all this is under the specific rulemaking that's ongoing right now for unique waste streams. So, the bottom line is our waste classification gap is being addressed by the ongoing rulemaking as part of the Part 61 framework.

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

There's also a view that some of the low-level waste rules need to be rewritten before a reprocessing plant can be considered. Staff believes that the current regulatory framework is sufficient to provide for safe and secure disposal, and that our Part 7x can accommodate whatever the changes are that result in Part 61. And, again, this input of a hazardous-based approach for classifying waste seems to be the direction that NRC Staff is going.
Our final issue, and I thank you all for bearing through an iteration of many waste issues here, or final issue is on effluents; that, basically, any reprocessing facility is going to need regulations for effluent monitoring and control. We're concerned that there is a greater source term and greater potential for emissions from reprocessing than there are in many other types of nuclear facilities.

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

The question is, how do we go about regulating effluent monitoring and control? Staff is proposing that we would use the same basic approach as in Part 50, as the basis for developing regulatory requirements for effluent monitoring and control. We're considering developing criteria very similar to those in Part 50, Appendix I, which would provide numerical guidelines and meeting our as low as reasonably achievable requirements. We recognize that we would need to develop some risk-informed performance-based approach to determining what those release limits are.
We received input on the NEI White Paper. It was, basically, very similar to the approach that Staff is proposing to drive our regulations from existing Part 50 requirements. Our old Advisory Committee on Nuclear Waste and Materials had done a very extensive review of reprocessing issue back, I believe it was 2008, and their report to the Commission recommended that NRC should hold interagency discussions on it with EPA on whether our existing release limits for krypton and iodine needed to be reexamined to reflect current technology. And, also, whether we needed to establish release limits for tritium and carbon-14. That option is still on the table for NRC Staff.

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

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

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

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

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

So, I hope I've given you a fortunately brief overview of where we are on the waste and
environmental issues associated with waste. Our objective is to establish safe onsite storage for both spent fuel and high-level waste, give the applicant the framework to plan for appropriate disposal pathways. We need to establish confidence for longer-term waste storage, and insure that the appropriate treatment of low-level waste, high-level waste, and effluents is occurring in the right regulatory framework.

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

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

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

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

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

Since that time, there has been no specific activities related to creating a new equivalent to Monitored Retrievable Storage. There's a lot of interest. You probably all have seen a lot of recent legislative activities in that regard. It certainly was an area that was thoroughly explored by the Blue Ribbon Commission, so you can expect the final report of that Commission to contain a lot of very specific recommendations in that area.
Incidentally, following the 1987 amendment, there was an office created specifically to seek volunteers throughout the country to be willing to establish locally a -- something equivalent to Monitored Retrievable Storage, Interim Storage.

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

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

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

MR. McCULLUM: Right. I have a process proposal in that regard.
MR. CAMERON: Good.

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

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

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

MR. CLEMENTS: Well, I just had a couple of questions of Britt, actually. But because there were some questions presented to us in the Gap Summary, I don't know if you have a way to put those up, but it might work just as well, as Rod suggested. But I'd like to be able to ask my questions of Britt, if I could.
MR. CAMERON: Okay. The questions roughly follow the gaps, but I think that it might be useful to put, for example, the Gap 2 proposal up, and let's talk about that.

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

MR. CAMERON: Yes, I think you're right.

So, Miriam, if you could put Gap 2 up. And, Tom, are we -- do you want to pose your questions before we get into the discussion?

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

MR. CAMERON: Okay.

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

Dr. Hill, you mentioned depleted uranium.

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

DR. HILL: No, my mention of depleted uranium was in the context of unique waste streams,
and what the Commission had done for directing Staff
to develop rulemaking for unique waste streams; came
out of the depleted uranium disposal issue.

MR. CLEMENTS: Right, right.

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

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

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

But looking at the quantity that would
have to be disposed of, and how it, potentially, would be disposed of could direct the Commission, if it happened today, to have the same position it had on the existing DU issue, of a site-specific performance assessment would have to be done if the proposal was to dispose of that depleted uranium in a shallow land burial site.

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

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

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

MS. CORBETT: I just want to make a general statement about the citizens of South Carolina are very skeptical about any waste ever leaving here that's brought here. Our past Governor, Dick Riley, had a statement. He said, "The first law of nuclear waste is it tends to stay where it was first put." And I'm not sure that any waste that was ever created
in the reprocessing here has ever left our state. In fact, we got stuck with a bunch of stuff that we weren't supposed to get stuck with, so we are justifiably skeptical about any kind of new missions that would create nuclear waste here.

When you mentioned Monitored Retrievable Storage, I was reminded of when the Barnwell Compact debacle was taking place, and we were supposed to be part of this compact where North Carolina would take their turn, and they were going to build a Monitored Retrievable Storage facility for the low-level waste. And we tried to convince South Carolina to do that, instead of the kitty litter, dig an unlined trench, dump in there and cover it up method. We thought that would be preferable. And, indeed, vinyl has leaked and has migrated offsite much earlier than was ever expected.

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

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

MR. YEAGER: Actually, Susan provided me a good segue. As a regulator, and a regulator at the
Barnwell facility, Mr. Hill's initial statement that NRC is technical, they aren't going to deal with the policy issue. And just like Susan says, there's a lot of legacy waste that's been a concern to all South Carolinians for a very long time.

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

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

So, I don't think you can just -- I'm not saying you're being flippant, but there's definitely a
link between policy and rulemaking on this issue. And I don't think you can do one without another one in hand.

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

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

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

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

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

MR. CAMERON: All right, thank you. Thank
you, Mark. Derek, before we go to Gap 2, do you want to say something?

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

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

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

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

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

I'm sorry, you're right. I'm being bad. But I just wanted to throw in here the fact that I think that the reason this is so important is that we're talking about not wanting to slice off impacts. Right? We're really here talking about this whole picture together. And we have work that solidly shows that the impact of a major accident like Chernobyl, or like Fukushima with plutonium fuel in the core, is a disproportionate impact compared to uranium fuel in the core.

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

So, I just want to point out that I really don't know enough about France. I think we know it is
a democracy, we know it's socialist, but do they have the same provisions in their constitution? We say we provide equal protection under the law, so if you know you're going to increase the risk to communities disproportionately, how are you going to address that? How are you going to say, at least in your paperwork, that you've doubled the safety if you're doubling the risk?

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

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

MR. CAMERON: All right.

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

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

MS. OLSEN: I did.

MR. CAMERON: That's good, Mary.

(Laughing). Whether you call the EIS programmatic or
generic, the threshold issue is whether there will be
an Environmental Impact Statement done on a
rulemaking. And I think that by its very nature, any
EIS on a rulemaking that covers all these subjects is
going to accomplish what I think you want to see
accomplished.

MS. OLSEN: Reactor licensing, too?

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

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

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

(Laughter.)

MR. CAMERON: And what do you call it?

MR. McCULLUM: Gap 2.

MR. CAMERON: Gap 2. Okay.

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

(Laughter.)

MR. McCULLUM: I just want to go on
record, and we will endeavor, industry to provide you
some written comments more specifically, but we oppose
the proposal to do a rulemaking in Part 72. This goes back to what John Greeves had said earlier, we want a holistic comprehensive regulation for the recycling, reprocessing, plutonium green washing, whatever facility it is.

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

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

Also, Part 72 will probably be undergoing changes from other directions. It has to look at extended storage now. Staff has a separate initiative on that. And it also has -- there's a staff initiative
on near-term improvements to the Part 72 framework. So, that would probably be more changes than it could bear. We, again, would vote for the holistic approach.

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

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

MR. CAMERON: Okay. Thank you, Rod. Let me just ask Britt and Wendy, on this Gap 2, Rod was
talking about some of the moving parts here. The substantive issue in Gap 2 is what to do about the storage -- I mean, forget how the process works, it's what to do about -- how do you deal with the storage of the high-level waste, not to spent fuel, but to high-level waste? Could you just elaborate on that for our participants?

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

It's all -- the intent of the Nuclear Waste Policy Act was the Department of Energy would operate a storage installation for high-level waste, mainly because well, it was only envisioned at that time that the Department of Energy would do reprocessing. But we are now sitting here almost 30 years later, and we're looking at the commercial storage, and the commercial production of high-level waste as being expressed as an intent to the Commission.
So, we're looking at this within our existing regulatory framework. If we are going to promulgate changes to Part 72 because there are certain storage requirements that are needed for longer term safety, or longer term inspection process, using the 72 regulatory framework allows us to propagate those changes for existing license holders under Part 50, as well as another potential license holder, anybody that has that general license, or a specific license for the storage of spent nuclear fuel. Rather than if you say, just to speculate, in the future you wanted to change Part 72 for longer term storage requirements then you would need to go back, and if you had incorporated those requirements under 7x, you'd also have to do a rulemaking under Part 7x to accommodate that, as well.

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

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

MR. McCULLUM: Yes, I think that --
MR. CAMERON: Because I want to make sure that everybody understands what the issue is.

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

As far as having to do multiple rulemakings to do the same thing, I think that's less problematic for addressing the spent fuel. Once it's inside the Part 7x facility, you can take the regulations from Part 72 and just cut and paste some of the same sections in there; and yes, you have a change control issue that every time you have to make sure that they conform, but I think that change control issue is less significant than the issue that
would occur for the folks who have to operate the
facility, folks who have to actually be safe, when
they have to be making decisions as to am I in Part 7x
territory, am I in Part 72 territory, am I in process
now, or because I set this container -- it's between
two parts of the process now, am I in storage space
again? How long I store it.

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

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

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

MR. CAMERON: And is there also an issue
besides how you build the regulatory framework, in
terms of the high-level waste, not the spent fuel, but
however you build that regulatory framework, you need
to address the question of what criteria you're going
to use to regulate that high-level waste.

Go ahead, Derek.

MR. WIDMAYER: Yes, I -- as far as the
waste management gaps that Britt was going to bring
up, this one seemed to me to have the most challenges.
The two questions, one and two, that he asked at the
end from a technical standpoint, Staff considers
storage of high-level waste not significantly
different from the storage of spent nuclear fuel. And
their bases for that is from 1986, and I don't know --
I felt like it was problematic that that same
conclusion would be drawn today, and that you'd have
an easy time justifying that that conclusion was one
that you could technically justify.

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

I understand where your thinking is coming
from, but I'm not sure that you'd be successful in
going down this path.
MR. CAMERON: And, Mary? Thanks, Derek.

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

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

I mean, if DOE picks up the waste, then the contract is executed, and they're just going off the map, and they are not disposing until afterwards. And then like then there's all this waste that's
sitting there that you're talking about storing, and it's got to have a path forward. And it's going to have a place it's going to go. And I assume that some of it is going to be into a new repository program, because everybody is talking about that at BRC.

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

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

MS. OLSEN: Let me just help. Like who
has the contract? Like if you've generated high-level waste that's supposed to be disposed, is there a contract? And, if so, who has it? And what happened to the old contract? I'm lost.

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

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

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

So, I can't answer all of your questions, but the sense of the disposal fee you would have to have a standard contract in place if you're going to produce high-level waste. That contract would be with
the Department of Energy, and the fee to be established as part of the contractual process.

MS. OLSEN: Just one quick follow --

MR. CAMERON: Let's --

MS. OLSEN: Okay.

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

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

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

MR. CAMERON: And I don't -- it may be that the contract issue is something that we should talk about offline, but I just want to make sure, and
try to give Mary some information. I just want to make sure that, what the implications are, if any, from the contracts for the regulation of reprocessing facilities. And Rod --

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

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

In no case is the contract -- well, if the contract is fulfilled, you mentioned the taxpayers on the hook. The taxpayers are only on the hook when the contract is not fulfilled. If DOE fulfills the contract, that's all paid for by the Nuclear Waste
Fund that was paid for by the consumers of nuclear electricity through their bills. If you live near a nuclear plant, or in the nuclear service territory, you have paid into the Nuclear Waste Fund.

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

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

MS. OLSEN: Therein lies my contract envy.

MR. McCULLUM: Well, yes. Exactly. So, this is clearly not a Part 7x issue. It really depends on the business model for the reprocessing facility, and how -- who the customer is, and how that
customer addresses his or her, its contractual situation with DOE.

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

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

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

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

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

Just revealing my ignorance, I'm not sure if they were only talking about spent nuclear fuel, or
if they speculated on high-level waste, vitrified high-level waste coming from a reprocessing plant. So, do you think there's going to be impact for a consolidated interim storage site on the high-level waste, vitrified high-level waste end of things. I mean, if the material were stored longer on the front end, I guess there could be some impact there, too. But I would suspect that there's going to be impact on NRC rulemaking and DOE policy from what the BRC recommends.

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

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

DR. HILL: Well, just to make sure
everybody clear, the Blue Ribbon Commission on America's Nuclear Future is a Federal Advisory Commission to the Department of Energy. We would have to wait and see if there was any change to the national legal framework before we would take any direct action, absent the Presidential Directive or something else to that effect.

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

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

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

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

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

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

But when I was thinking about DOE, I was
thinking, if you want to modify Part 72 to include high-level waste, would you be clear that that would be from a recycling facility, or could that also be DOE waste?

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

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

Go ahead, John.

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

And I'm speaking for myself, but I think two of them don't work. No action is not acceptable.
We've got an issue with this definition. And two, seeking relief from Congress, my experience is that's not going to be a path either.

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

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

And the NEI White Paper put forward some recommendations, and in due course I'd like to hear what your reaction to those were, that tried to address both the definition at the facility, and
enough context to help you frame how it affects that facility once it gets to the disposal facility. But full circle, your approach number two, I highly endorse that one.

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

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

I don't know whether the Blue Ribbon Commission is going to provide us that opportunity or not. Given that you're kind of between a rock and a hard place, I think you should go ahead and make this
definition, but then you're still going to end up with a little bit of this, and a little bit of that that has no place to go. But, anyway, that's my feeling about that one.

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

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

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

We have got a source-based definition in the Nuclear Waste Policy Act, and with that source-based determination we need to have a responsible
basis to say what are the materials that need to be
disposed of geologically versus another disposal
pathway.

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

DR. HILL: Well, certainly, the Blue
Ribbon Commission's recommendations would need
legislative implementation.

MR. WIDMAYER: Right.

DR. HILL: And that always presents an
opportunity for change. But the time scale for that
change, and the priority for that change is something
we just don't have an insight on.

MR. CAMERON: Okay, thank you. Let's go
to Tom, and then Mary, and we'll come back to Rod and
John, perhaps. Tom?

MR. CLEMENTS: Well, on the waste
incidental to reprocessing issue, as people can well
imagine, we're quite sensitive to that here in South
Carolina, because the State of South Carolina -- well,
we're in Georgia now, but in the region, South
Carolina and Idaho, as you know, where the tank
waste was defined as certain parts of it to be waste
 incidental to reprocessing. And what we're going to end up with at Savannah River site, and my numbers are not quite right, but more or less 50 large, very large tanks with a grouted waste incidental to reprocessing left on site, millions of gallons with several million curies of radiation. If anybody wants to see it, I have a picture of some of these tanks here, the salt waste.

So, we would be quite concerned, and I was -- it was encouraging to hear Dr. Hill saying that no waste incidental to reprocessing would be left on site. And this gets back to a point I raised earlier, what is the site?

Is the industry pushing the reprocessing plant going to claim the DOE site is the site that's being looked at? And this gets back to the EIS issue. There's going to be -- if Savannah River site, say, were to -- if someone is proposing to locate a reprocessing plant at Savannah River site, there, in my opinion, would need to be a sitewide Environmental Impact Statement not only relating to the waste and the operation of that plant, but how it interacts with waste streams and management of other parts of the site.

It's going to get complicated. That would
be a DOE-NRC document. And, at this point, I think we would insist that such a document be prepared. That's another complication. But I think that high-level waste is already defined.

I would be more comfortable here in South Carolina if the WIR law did not exist, and all of the wastes were being vitrified, but I do see that there's some limitations on processing all the material that's here, and how you handle the tanks, which are going to be grouted and closed in place. But it's a nightmare here, and I totally support what you have said, that the WIR waste would not remain at the site.

But the question is, would AREVA or another company try to claim that the largest DOE site was not the site. And I think we're going to have some argument over that, but it's something the NRC should clarify in its regulations, if you are looking at a DOE site kind of as a sub-site, or if you totally don't care if it goes 100 yards away, and it's on a DOE site.

MR. CAMERON: Is there a little bit of a confusion about the reference to DOE site here?

MR. WIDMAYER: Only in the context of what Tom was just saying, in the sense that it sounded like he's -- I'm not keeping up with the news, I guess, but
he seems to think that the reprocessing facility that's being discussed here is going to be sited at a DOE facility?

MR. CLEMENTS: Well, just me -- it's quite possible, because under the GNEP proposal, a reprocessing facility was proposed by one entity at the old Barnwell plant, which is right adjacent to the Savannah River site. And for the Savannah River site, itself. And from what I see here, there is effort to put some pieces together, including with the MOX plant, consolidated interim storage, and locate a reprocessing facility after R&D is done at the Savannah River site itself, with a goal to use infrastructure, personnel.

As I mentioned earlier, Shaw AREVA proposed that the boundary for the MOX plant and their radiation, the dose was the Savannah River site boundary, not whatever, 50 yards away from the plant itself. And they lost on that, and I think we may see the same thing if the industry were to propose a reprocessing plant at Savannah River site, or another DOE site.

MR. CAMERON: Okay. So, let's let the record reflect that what Tom is talking about is if this reprocess -- if a reprocessing facility was
located on a DOE site, there's also the other point that he's making referring to something that Britt said about none of this waste incidental to whatever you call it is going to remain at the reprocessing site.

And a further generic issue, getting back to the EIS, again, is that -- and apropos of what Mary was talking about, the scoping process for that EIS, the preparation of the draft EIS, is going to be very important, because people are going to have a lot of different ideas about what should be within the scope, what alternatives, what impact should be looked at. So, that was a good comment, Tom.

Now we're going to go to Mary, and then we're going to jump over to Rod, who's been waiting a while. And then we'll see who else wants to talk on this. Mary, still on Gap 3.

MS. OLSEN: Yes, I have just a couple of WIR comments. One is that we were very actively involved opposing the legislation that Tom mentioned. And I believe we have a number of technical resources in terms of calculations that were done at that time that I'll provide to Staff as a resource for you to see what our independent expert said about the wastes that were classified WIR in the DOE world.
But I want to bring up a different aspect of WIR, Waste Incidental to Reprocessing. And this has to do with a 1969 event that resulted in an underground plume of radioactivity at West Valley. The plume is moving towards Cattaraugus Creek, which flows through the Seneca Nations Reservation, and then into Lake Erie.

They are taking remedial action. The estimate is $1.2 billion, and they put in a wall of zeolite. Now, I've heard of people afraid of radiation taking zeolite internally, but this is the more sort of institutional zeolite, internal, sticking it in the ground to hopefully absorb mainly the strontium-90, I believe is the major focal point.

Anyway, they're not planning on taking that zeolite out. They are planning on this being their reaction to this problem, but it's actually going to be waste incidental to reprocessing at that site, because they're just trying to immobilize it where it is, but not remove it.

So, I just want to bring up this little bit of reprocessing history, and mention that there's more than one way to deal with a problem, and not all of it has to do with removing the problem.
then John, and then maybe we'll try to do the next gap relatively non-controversial waste confidence.

MR. McCULLUM: I was actually going to try to summarize. I think what NRC is proposing here is consistent with Option 2, that they seek to do what is, indeed, within NRC's purview, which is to define highly radioactive and sufficient concentrations in terms of what can be disposed of in accordance with CFR Part 61.

I think Britt said I believe we have a source-based, I call it origin-based. Source even gives it more credibility. It shouldn't be where the waste came from, it should be what is its hazard, what does it contain that should drive how it's dealt with.

And I think when Congress writes a law and says things like highly radioactive and sufficient concentrations, there's an expectation that the competent regulatory agency will define what those things mean. And I think NRC's proposal does that.

Given that it does that, given that I think NRC can look at what could be disposed of as low-level waste, there's a specific question for public comment here that probably no longer apply. I don't believe applies any more, which is what waste disposal option should NRC consider for the management
of waste generated. That's a policy question.

NRC does not need to consider waste disposal. If NRC, as they proposed, considers the hazard, if it's this hazard, it can be disposed of in Part 61, if it's not this hazard, it requires geologic disposal. Then there's another part of NRC that's going to make a new regulation for geologic disposal, because there's no more Yucca Mountain. And again, the nation will make a policy decision as to where we're going on disposal.

So, I think the path that's been outlined here is a pretty good one, and I think it can be made independently of what disposal policy choices need to be made.

MR. CAMERON: Okay. Let's go to John, and Mark, and Susan, and then we'll close this gap off.

MR. GREEVES: This is -- I'll do it quickly. I think it's a little repetitive, but Britt, you talked about the source-based. Well, yes, it started out as a source-based definition. It moved in the direction of a hazard-based definition under the Nuclear Waste Policy Act of 1982, because that's where you will find the language "sufficient concentrations and other highly radioactive materials." So, you have, I think, the authority to build on that
departure from solely a source-based definition to a hazard-based approach. And, at this point, I think the recommendation that the White Paper put forward is define what is sufficient concentrations in highly radioactives.

I think you have that available, so your approach number two, repeating myself, is recommended. And I think there are ways, and Derek said it a few minutes ago. This is actually integrated to your waste classification gap. The effort the NRC Staff is going through to address the waste classification system backs into this one, and can, I think, give you a tool to define what sufficient concentrations are.

And it actually, in my opinion, does build on what Congress did in Section 31-16, which was referred to earlier. It's the 2005 National Defense Authorization Act. And in there is language that we put forth in the White Paper that defines, or proposes what you could do to define what is sufficient concentration. So, hopefully -- it's more than we can do here, but Jim Lieber and I did a paper on this some time ago, and I think you have access to that.

MR. CAMERON: And we're going to go to Mark, and Susan, and I think Britt wants to respond here. But maybe logically it makes sense to go to
talk about the waste classification gap next, since it seems to be related. And then take a break, and come back and do waste confidence, and effluents. So, let's do that.

Britt, did you have something to say to John about his comment?

DR. HILL: Well, a number of commentors. We're all talking about WIR. NRC Staff is very sensitive to the issues associated with WIR that are occurring at the legacy sites. And that has been a lot of our struggle internally in remaining aware that anything we propose has the potential to affect WIR.

We're trying to come to a sensible classification scheme where we're not automatically requiring low activity waste to be disposed of in a deep geologic repository that doesn't exist, but still insure that we have a protective approach for the highly radioactive materials.

It is that tension between the existing issues at the legacy sites and a sensible, practical implementation that is causing us to just not adopt the existing definition in 31-16 Section of the Defense Authorization Act, because there is no intent in any of these existing statutes or legislation. We just don't have that removed to the extent practical
issue. It's a much simpler issue for us. And we just
don't want to promulgate language that further
confuses WIR from legacy sites with the waste streams
from a future reprocessing site.

MR. CAMERON: Okay, thank you for that
clarity on that. And, Mark, and then we'll go to
Susan.

MR. YEAGER: Britt, I just wanted to ask
if you have considered as part of your approach, as
far as incidental waste, mixed waste?

DR. HILL: I think that this consideration
has come up in the context of waste classification for
the lower activity waste. So, it's not really
something that we've been considering for the WIR
issue itself.

We're really functionally oriented on what
is the high-level waste, more than the classification
of the low-level waste, and the mixed waste, the
blending issues that are associated, all of that with
the ongoing Part 61 rulemaking.

MR. CAMERON: Mark, are you suggesting
that the regulation -- the rule should address mixed
waste?

MR. YEAGER: Kevin and I just talked about
this issue before the meeting, and it will be a waste
that's generated by a reprocessing facility. So, I just -- I'll ask the question when we talk about waste classification.

MR. CAMERON: Okay, which we'll get to. We're going to hear from Susan, and then, Miriam, if you could put the Waste Classification Gap up for us, please. Susan?

MS. CORBETT: Thank you. I mean, I'm just a lay person speaking on behalf of the citizens of South Carolina, and it's kind of like we feel like fool me once, shame on you, fool us twice, shame on you. So, we want to make sure that there is consistent language with -- when you say there's not going to be any WIR waste left on site, we want to make sure that's very clear, because like Tom said, you could say the site, oh, the site is here, but there's this greater site that we could just move it from there over to there. So, we want to make sure that there's very clear language about what is the site, and how that would, potentially, affect our state in terms of it being left here. Because, originally, that WIR -- that wasn't WIR. I mean, that just came about in 2005, and that was considered high-level waste before. In fact, I think it's still considered high-level waste in every state except
Idaho and South Carolina. Everywhere else, even in Washington State, this is still considered high-level waste.

So, we're just concerned about the rules keep getting changed on the fly kind of thing just to suit the situation. And I want to make sure that we don't get stuck in that situation here again in South Carolina. Thank you for clarifying what you said, though. I appreciate that.

MR. CAMERON: Thank you, Susan. Can we move to Waste Classification now? Okay. And --

MR. McCULLUM: That's why my tent is up.

MR. CAMERON: Go ahead, Rod.

MR. McCULLUM: Yes, I wanted to go on to the next ride. And I think this, hopefully, will be a pretty simple discussion.

I think what Staff has indicated here is that this is being addressed. They've already got Commission direction on this issue. It's being addressed in Part 61. I know there's a lot going on over in Part 61 right now, and I think the discussion belongs over there.

I think that, in other words, our position is that's a sound approach, and there's nothing, as I think is indicated here, there's nothing additional
needed in this rulemaking beyond that. So, I just wanted to endorse that approach.

MR. CLEMENTS: Sorry is there's any confusion on my part, but just to raise this reprocessed uranium issue again. Wherever it be addressed, I do think that the NRC does need to assess what constituents are in the uranium coming out of a reprocessing plant. And you can easily get that from AREVA, and how that's going to be classified no matter where it be, if it's Part 61 or otherwise.

And, also, I'm a little confused as to where the issue of after capture of at least certain fission gases, where the storage of them would be if that's what it ends up, where containers of noble gases would be, and how that fits into your regulation.

I know that, what is it, 40 CFR 190 is the EPA reg on this, but how are you going to be addressing onsite storage of containerized noble gases, if that's what it's going to be?

MR. CAMERON: And, Britt, is that our issue here about whether all those noble gases are going to be treated under Part 61, or what is the answer to Tom's question?

DR. HILL: Well, I think we're talking
about the effluent monitoring and controls issue more than the storage of radioactive gases.

MR. McCULLUM: Yes, 40 CFR 190 is an effluent rule.

DR. HILL: Right, for release limits and dose limits.

MR. McCULLUM: There's an onsite issue of how you manage the storage, but that gets to be technology-specific. You're going to have to show that your exposures to your workers and everything at the storage meets the regulations no matter how you do it.

MR. CAMERON: So, is this something that we should talk to when we go to the effluent gap? Okay. Let's not lose that. And Tom brought this up again, reprocessed uranium. We know that you mentioned that the -- one of the drivers for the, at least one change to Part 61, is how you deal with depleted uranium, because that defaults to Class A.

Is reprocessed uranium different than depleted uranium? I guess I just would like to get some clarification on that. Sven?

MR. BADER: Yes. Reprocessed uranium does contain some fission products that the separation process was not able to completely purge from the uranium that's been recovered. So, there are special
processes. I think it was brought up here, AREVA has its facility in George Besse II that's being specifically designed to re-enrich this reprocessed uranium.

In addition, this reprocessed uranium has a higher enrichment, B235, than depleted uranium or natural uranium. So, it would have to go through less enrichment, but still go through an enrichment process. And I think the inevitable question also is the depleted tails from the re-enrichment of reprocessed uranium. And, again, some are calling it a waste. In France, that's a resource, again, for future reactors. I mean, it's still full of potential power that could be utilized, but it will require a next generation reactor.

So, I guess maybe the question is, will there be storage requirements for this material that will be unique. And then, I guess, Tom also mentioned the capture of fission -- of noble gases. It's something we've done a lot of work on in looking at it, and I know the DOE complex is also working on that.

Clearly, gases won't meet performance requirements for disposal of Class A, so what they have done, or are proposing to do is to -- if you have
to capture this material, somehow putting it in a matrixed material, so again you have to look at performance requirements then from a safety standpoint. And we have regulations for that type material.

MR. CAMERON: Okay. Thanks, Sven. Fairly complex in terms of all the different waste streams. That was an easy one. Okay.

John, and then Mary -- John, Mark, Mary, and then we'll take a break.

MR. GREEVES: I hate to do this, but I'm stepping back because I think waste incidental and classification are connected. We spent a lot of time talking about WIR issues. They are controversial.

You rightfully included the discussion of other waste streams, Paragraphs 6 and 7 of Appendix D on page 27. I think you know what I'm talking about. I think I would be remiss if I didn't flag that and say you really do need to include something on the hulls, the ion exchange beds, laboratory items, et cetera, get that into a regulation, because it's not at the present time. It's included in DOE's border, but it's not in the regulation, so somehow you're going to need to address that, because anybody that operates this facility will have those materials. And
we need to have a clear understanding of what are they? And it's expressed here that they're not high-level waste, so I think that needs to be written down in a rule. So, I'm just emphasizing that.

You already got it in there, and I agree with the way you've written it up. It does need to be in the rule.

MR. CAMERON: Mark?

MR. YEAGER: This is just a general question. I don't know if there's any NRC Staff member that's working on this initiative that has interface with the NRC group that's addressing the revision of Part 61. Is there?

DR. HILL: Yes, there is. And, unfortunately, he could not be with us on this trip.

MR. YEAGER: That's fine. You know, our state is engaged in that revision as part of that team, and I just wasn't aware of any contributions from this group with regard to some of the isotopes that were referenced earlier this morning that are kind of unique to this process, that might have to be made -- have provisions made for them when the revision happens.

DR. HILL: Right.

MR. YEAGER: Okay.
MR. CAMERON: And finally, Mary.

MS. OLSEN: I want to note that we are involved with the Part 61 dialogue, and I understand not dragging that whole thing in here. I want to just say that we welcome a reexamination of waste classification, that we agree that the waste classification that exists is very misleading, and institutionally unhelpful.

But one of the issues that we would like to see addressed is not only how highly radioactive, and how concentrated but, in fact, the source term issue of how long it is going to be hazardous, and what is the level of institutional control that's placed around that length of hazard. So, those are some additional issues that we bring in.

And then I just want to for the record, because we did talk about this, say that the surface dose of the uranium that comes out of reprocessing is enormously different than other uranium. I'm not going to say I know what that surface dose is, but the gentleman from AREVA mentioned it may need special storage requirements. Well, it's every single step onward with that material that is not comparable to fresh uranium fuel, the transport of it, the handling of it, the storage of it, everything.
So, I don't want to overstate the case, but I just want to be very, very clear that those provisions were not made at Paducah, and the NRC really needs to do a lesson learned on that incident, which was not, as far as I know, commercial. But it was from West Valley, I don't know. But flesh that out and get a clear understanding that the "reuse" of the uranium from this process is not a simple plug `n play with your other uranium.

MR. CAMERON: Okay, thanks, Mary. Thank all of you. Let's take a break, come back -- why don't we come back at 20 to. It's a 20-minute break. We have two more gaps to do here. And then we have a relatively short but important subject of financial to do. So, I think we still have time. So, let's take 20 minutes. And thank you, Britt, and thank you, Wendy, for your work.

(Whereupon, the proceedings went off the record at 3:19 p.m., and went back on the record at 3:44 p.m.)

MR. CAMERON: On the record. Okay, and just for clarification, we're going to finish up these two gaps in this subject. And then we're going to go on and see if anybody has anything to say in the audience on this.
Then we're going to bring Bret up to talk about financial. And we'll have the discussion of that and I think it's going to be sort of a short subject. But we'll also have public comment then. So there will be two public comment sessions.

And we need to -- The next gap is waste confidence. Okay. And we'll get that up there for you and we'll talk about that. And the last gap is going to be effluents. I think we've talked about the EIS issue. And fortunately we have some members of the NRC staff here in the audience who are probably going to have a responsibility for working the EIS. So they've been listening to all your comments on that which is good.

Okay. Here is waste confidence proposal.

And basically, Brit, is this -- Should the NRC try to fold the high level waste that results for reprocessing try to do a waste confidence decision on that? Or should it be something that the licensee is going to have to address in their environmental report?

DR. HILL: Right. Would you extend the existing waste confidence rule for spent fuel at any reactor to include high level waste from any reprocessing facility?
MR. CAMERON: So that's the basic issue though.

DR. HILL: Yes.

MR. CAMERON: Well, let me ask people around the table on this one. Does anybody around the table think that the waste confidence rule should be extended to make a generic finding on the environmental impacts of this material? I mean, if that's the issue a very simple question. Do people think the waste confidence should be extended? Or should we have this addressed in the license application if anybody comes in for a reprocessing license?

Okay. Mary.

MS. OLSEN: I find it highly refreshing that a site specific approach might be taken.

MR. CAMERON: Okay. Anybody else around the table want to differ from the site specific? John. And we won't close this off until we hear from Rod. Okay.

MR. GREEVES: I think he wanted to participate and we sort of got out of order. And I'm surprised he's not back here. So I'd just keep the record open until he comes back.

MR. CAMERON: Okay. No, we will.
But I'm just -- Go ahead, Mark.

MR. YEAGER: Due to the inevitable pushback on any proposed commercial facility you have in order to get any kind-in from the potential location it would be, you'd have to have some kind of independent assessment done just to garner public support. I don't see how you can just make a generic decision. It has to be part of the licensing process.

MR. CAMERON: Okay. Greeves is shaking his affirmatively.

MR. GREEVES: I'm just -- I'm not an expert on this topic. So I wish Rod was here. But the point is we already have glass storage. We're storing it at West Valley. It's being stored by the government. So the issue is at hand already.

I agree with Mark that you can't -- you have to pay attention to it in any licensing process. I'm not the expert on waste confidence, but --


DR. HILL: Just to try to help focus the discussion, our concerns really are in the waste confidence rule. The Commission came up with five findings about storage and disposal of spent fuel and at times of high level waste.

The Commission expressed confidence that
high level waste could be safely disposed of in a geologic repository and that the challenges associated with that disposal were bounded by the challenges of disposing spent fuel. So the Commission was very clear in Findings Nos. 1 and 2 that high level waste could be disposed of safely. In Finding 3, the Commission was very clear that spent fuel and high level waste would be stored at a licensed facility unless they had confidence that it could be managed successfully.

The problem comes in for us in Finding No. 4 which talks about the confidence in safe and secure long-term storage. That finding only talks to confidence for spent nuclear fuel storage at any reactor.

So the challenge for staff is was there enough technical information for us to think that like the Commission did for Finding 4 for spent fuel storage could we make a generic finding for long-term storage which would be in this case 60 years beyond the license life of any facility that we had sufficient information to say "Staff was confident with reasonable expectation that there would be no significant environmental impacts from the storage of that waste." And that was where staff at this stage
felt that we did not have the sufficiency of information to make that as a generic finding.

So it's not really about could we do it in the here and now. I don't think there's been any technical issue that's been raised to say that high level waste could be stored safely in the here and now. It's extending that here and now confidence out for at least 60 years beyond the license life of that facility.

MR. CAMERON: Okay. Let's go to Derek Widmayer from ACRS and then Tom Clements.

MR. WIDMAYER: And Brit just summarized the reason I didn't answer your question in the affirmative is what he just summarized there is that Criteria 4 is where they have difficulty. And I think they're being honest as far as what they can achieve with --

MR. CAMERON: Would be a non-starter.

MR. WIDMAYER: Yes.

MR. CAMERON: Okay.

Tom.

MR. CLEMENTS: Let me just point out that once again getting back to this issue of a reprocessing plant located on a DOE site. Savannah River site already has 3,000 canisters of vitrified
high level waste and around 7,500 are supposed to be made.

If you're going to develop waste confidence and this reprocessing plant is located in a DOE site, be it Savannah River site or if Hanford ever vitrifies high level waste, where there's material that that doesn't fall under NRC regs. from a community and state wide perspective, if you develop regulations that apply only to the newest part of that vitrified waste and the oldest material is still sitting there, 7,500 canisters, this is going to impact what happens to your material, to the NRC regulated material.

I'm just making this observation. But this is going to be a conflict once again if the reprocessing plant is located on a DOE site with vitrified high level waste.

MR. CAMERON: Okay. Thanks, Tom. And just to sum up for Rod, we really have not had anybody who really thinks that there should be any other approach. But it's feasible to do another approach other than a site-specific approach rather than a waste confidence approach. I don't think I'm summarizing that incorrectly.

Do you -- I just wanted to tell you what
we heard around the table while you were gone. Do you have anything to say about the waste confidence versus the site-specific issue?

MR. McCULLUM: I don't think I would disagree with that. But the only thing I would offer is that of course the staff does have direction from the Commission separately that they're working on to look beyond the existing waste confidence rule beyond the 60 years.

And in that I don't know whether or not they would consider reprocessing or not. But at this time I would not pending further information from that I would not disagree.

MR. CAMERON: Okay. And that's a process that might be happening later on this year. But I think we closed that issue.

Let's go to -- Can we go to effluence? I'm sorry to have you do this, Miriam. I probably would know if -- It would take me a half hour to do it.

Okay. And when you say take Part 50 regulations as a basis, could you just explain to everybody again since it's been a while since we talked about this what you're proposing to do here, Brit. What the NRC staff is proposing to do or when.
DR. HILL: I'd like Dr. Reed to answer that.

MR. CAMERON: Okay. Dr. Reed.

DR. REED: Yes, let's give Brit's voicebox a break. What we're proposing is we looked at 10 CFR Part 50 regulations and those in Part 70 to consider what would be most appropriate. And because of the more of a potential for effluence from nuclear power reactors than there are in existing fuel cycle facilities we though the 10 CFR Part 50 approach was more appropriate.

So we would use aspects of the general design criteria found in Appendix A and to use the Part 50 regulations as a basis for developing monitoring requirements for these facilities.

MR. CAMERON: What's the most vexing issue for the NRC in this approach? I mean, is there really a clear alternative or is this the devil's in the details? What would you pose to the people around the table about? Is it basically -- Does this sound like this makes sense or?

DR. REED: Yes. Our concerns as I think have been mentioned periodically during the meeting with reprocessing is that it does have the potential for greater releases for greater effluence. You
compare it to nuclear plant or fuel storage.

Your fission product gases are encapsulated in the cladding in the matrix. However, by reprocessing, you are releasing those effluence into the process vessel. So you're increasing the mobility of the radionuclides.

So really our question is would it serve the 10 CFR Part 50 regulations just as a basis be the most appropriate course of action? Or do the stakeholders have any other ideas? Do we just need to sort of start from scratch in developing these regulations?

MR. CAMERON: Okay. I think that's fair. Rod.

MR. McCULLUM: Yes. Our position is yes, you should. And I know that there's a note in here that indicates that your approach is similar to the approach that we had proposed. We're pleased to see that.

There's an EPA component of this and we know that EPA is working on trying to update 40 CFR 190 to reflect current thinking. And NRC should stay engaged there. But I think you've outlined a path here that we consider workable.

MR. CAMERON: And just to remind everybody
and correct me if I'm wrong, but the result of all this after it goes to the Commission, whatever goes up there, is if the NRC is going to work on this rulemaking and they're going to use this approach in their rulemaking. The rationale for what they would come up with under this approach would be presented in a proposed rule for public comment. Okay. Just to remind everybody about there's some other shoes that are going to drop on all of this.

Mary.

MS. OLSEN: I just want to go back to the fact that the people I work with really value isolating radioactivity from the biosphere. If we're going to talk about a value based approach, that's our deal. That's what we want. We even want zero release.

So when I describe reprocessing, I say that you take this nice relatively stable waste form that's a ceramic with a metal wrapper on it and you chop it up and you dissolve it in acid. And then you smear it all over this huge facility with absolutely no reduction in radioactivity. And you pull out the plutonium and God only knows what happens to that. And then you've got all these wastes.

And worldwide the typical thing that's
done with the intermediate liquid waste as a pathway off the site is to dump it into water. I mean that's what they did in Russia, in the former Soviet Union. That's what they did at Sellafield in the Irish Sea. That's what happened in La Hague. That's what's happened to some extent already in the Japan. So where has there been an instance of having something that isn't just plain outright dumping of a certain portion of the intermediate liquids?

When we talk about effluent I get you that you're talking Part 50. But basically they just have to add more water. Right? Isn't that what we're talking about? So if we're talking about stuff leaving the site like this is what we're talking about.

So I don't know. Maybe it's like I can't imagining this happening in New Mexico. I noticed that you held a meeting there and you're holding a meeting here which sort of suggests that this volunteerism is getting a certain amount of attention. But it just gives me really deep, deep concern to talk about using the Part 50 numerical guidance with ALARA because it basically just says dilute it down and dump it out.

MR. CAMERON: And just before we -- Maybe
for all of our benefits, I think the statement was in the slides that the licensee, if someone did get a license, they would have to comply with the effluent limitations in 10 CFR Part 20, okay, which can be pretty low when you're looking for what the effluent limitations are.

Maybe it would be helpful if someone and I don't know if it's Sven or Rod, if someone could just tell us or NRC staff what's the nature of the effluence, the normal effluence, air or water that might come out of one of these facilities.

And just to say something that hasn't been said is that the NRC does not want anybody to think that the selection of sites for these roundtables has any implications for where there might be they would expect an application for a reprocessing facility to be. So I just wanted that to be clear to everybody. We're not here because we think that there's going to be one here. Who knows? There might be. But that's not why we're here.

Can we talk a little bit about effluence for Mary and for the rest of our sakes? Sven. Rod. Anybody want to tackle that?

MR. WIDMAYER: I'll defer to Sven on that.

I wanted to address the larger point at the end. But
go ahead, Sven, on the details.

MR. BADER: There are gaseous effluents. You know when you split the fuel you can capture the vast majority with sophisticated technologies. There are La Hague. We do have liquid effluent releases. They do meet regulatory limits in France. So don't want to deceive people.

The facility that we have designed for the United States as a potential opportunity would be zero liquid effluent facility. But then again if there are regulations that permit releases, you can redesign your facility once again. So it's really up to the regulatory limits. You know, we meet the regulatory limits which meet the safety guidelines within wherever we're at.

MR. CAMERON: Okay. And, Rod, do you want to add anything?

MR. McCULLUM: Yes. We obviously share the desire to minimize the release of radiation I think around the country at 104 nuclear plants. We don't just meet requirements. We exceed them. And in the cases of some of these things like tritium we're even going well beyond the regulatory requirements to provide additional assurances.

It's probably true. I would not
necessarily characterize what goes on in France in some of the existing facilities as dumping. However, and I think it's been alluded to, we recognize that here in the United States there may need to be a more stringent standard.

It certainly needs to be a reasonable standard because zero is never a reasonable standard. If you apply a zero release standard to anything you can't drive your car, you can't wash your clothes, you can't do anything.

But that being said that doesn't lessen our desire to minimize. And that's really what ALARA is. And I think again NRC is on a success path here particularly if it's done in conjunction with EPA. I don't think 40 CFR 190 is very satisfying as it is to either side of this debate because it talks about regulating releases on the entire scope of global nuclear energy which if you're living next to a given facility I don't think it gives you much comfort that because somebody else released less your neighbor can release more.

So you need to have a regulation that reflects current understanding, current radiation protection, and does drive releases down. And I'm confident that that regulation in this country
probably will be a little different than it is in France. And as long as it's reasonable we won't just meet it. We'll exceed it.

MR. CAMERON: Okay. Thank you, Rod.

Let's go to Derek and then we'll finish up with Wendy.

MR. WIDMAYER: Okay. In doing my homework for the sessions, I mentioned that I thought Gap 2 was difficult. I thought that this particular gap was the easiest. I think that it's a sound approach to follow Part 50 and that this was a good sound approach by the staff.

I did have a question for them though. The report that you mentioned before from ACNW&M, they had brought up the issue with the existing release limits for krypton-85 and iodine-129 and then those two things didn't make it into your specific questions as far as needing to do anything on it. I was wondering if there is something, if you know the answer to the question. Is there supposed to be some kind of technical approach that prevents the release of krypton-85 or why didn't that make it into the problems that need to be dealt with as far as effluent releases?

DR. REED: Do you mean in terms of the
questions that we posed to the --

MR. WIDMAYER: Yes.

DR. REED: Well, because the release limits are actually codified in 40 CFR 190 which is in the EPA regulation. So really that would be beyond our scope.

MR. WIDMAYER: Okay. I guess the ACNW&M had suggested that you would work with the EPA. Are you guys working with --

DR. REED: That's correct.

MR. WIDMAYER: Okay.

DR. REED: Because we've also posed the question of whether NRC should actually engage with the EPA to discuss developing release limits also for tritium and carbon-14 which I think is one of the questions that currently we're not engaged in.

MR. WIDMAYER: So those are not codified, the ones that you're asking the questions about or?

DR. REED: That's correct. Yes.

MR. WIDMAYER: Okay.

DR. REED: The 40 CFR 190 covers krypton-85, iodine-129 and then I think -- correct me if I'm wrong -- that some transuranic elements are --

(Off the microphone comment.)

Plutonium, thank you. Plutonium and other
alpha emitters, I think.

MR. CAMERON: So that for people's edification around the table other people will be interested in whatever the -- does with --

DR. LESLIE: Chip, we can't hear you.

MR. CAMERON: Thank you. I'm sorry. I just wanted to point out for people who are interested in this issue from what Wendy is saying the EPA rulemaking on 40 CFR 190 may have important implications for reprocessing. Is that correct?

DR. REED: Yes, it will.

MR. CAMERON: Okay.

Mark.

MR. YEAGER: EPA's regulations on release limits for radionuclides has a direct impact on all state programs that have to deal with radiation effluence. The question, I think Chip sent me this in an email and it's not up there for public comment. But should the NRC in coordination with EPA develop release limits for carbon-14 and tritium? Not only should they do that for carbon-14 and tritium. They should probably do it for all isotopes.

Because one of the problems we have as a state when our decisions are questioned is what regulatory regiment are we using, NRC or EPA. And DOE
comes into play. This has come into many discussions with a committee I'm involved with CRCPD, the E-5, on radioactive waste management. We have advisors from DOE, EPA, NRC. And it's been a source of frustration for states for years that each agency seems to have their effluent limits.

So when we have to make decisions they're questioned. "How did you come to that conclusion?"

"Well, we used this."

"Well, EPA says that."

So it's very important. This is actually an effort that might lead to that consistency between Federal agencies to have a single approach to effluence and a single number that's risk-informed. And so if this leads to that I'm all for it. But carbon-14 and tritium are just two of them. I'd like to see it for all isotopes.

MR. CAMERON: Okay. Thank you, Mark.

Let's see what the audience has to say about these issues and go back into the panel if necessary. Bret Leslie has been involved in the -- We had a question from I think Mary about whether the Part 61 rulemaking staff were fully aware of what was going on with this. And I think, Bret, is that what -- do you want to close that loop for us please?
DR. LESLIE: Bret Leslie, NRC staff.

Mark was one of the participants of previous roundtables that I facilitated on the unique waste stream rulemaking and the technical basis document indeed does talk about the incorporation of processing isotopes within the scope of that rulemaking. And that is available on the NRC website. Just wanted to close the loop because he had asked the question and we hadn't gotten a real good response. But that's it.

MR. CAMERON: Okay. Thank you very much for that, Bret.

And we have another NRC staff person to -- Bobbie, do you want to say something first?

(Off the microphone comments.)

MR. CAMERON: Go ahead. We're here for whatever we discuss.

DR. STAMATAKOS: Okay. So this is John Stamatakos from the CNWA. And my question goes to John or Sven. In your version of the 7X theme park would you also include advanced reactor prism reactor as part of something that would also be encompassed under 7X? And if not, don't you think that that part of a facility offers the same kind of challenges that you brought up about overlapping regulations that
would occur under one in which we limit 7X to simply
the repo cycling center?

MR. CAMERON: Okay. Thanks, John.

MR. BADER: I'll try to take that one on.

No, there's no fast reactor. I think it was your
question. Could we co-locate a fast reactor on a
site? And did 7X consider that? And 7X did not
consider that certainly. And from a technology
standpoint we don't foresee fast reactors being
anywhere around for another 50 years or so. So I
don't think that needs to be a necessary part of this
rulemaking.

MR. CAMERON: Okay. And Tom and then Rod.

MR. CLEMENTS: Just a comment on that.

It's -- I don't know if people are aware of this
Enterprise SRS concept which is an evolution of
earlier DOE energy park. And it's quite clear just
for the record that besides a commercial and nuclear
fuel cycle facility and advanced fuel recycling R&D
there's a small modular reactor what they call FARM
now. This has posted online by a public interest
group because DOE would not release it.

And I take it that one of these reactors
is the GE Prism reactor which may accept material from
the reprocessing plant. And just to add from a FOIA I
have here if anyone wants to see it there have been
discussions about producing the first load of fast
reactor fuel in the MOX facility that's being built
here at Savannah River site which is some stuff
happening behind the curtain that's not being spoken
about openly. I can show that FOIA and other stuff to
people about that if you'd like to see it. Thank you.

MR. CAMERON: Okay. Thank you, Tom.

Rod.

MR. McCULLUM: Yes. And although I don't
disagree with anything Sven said, I do have to speak
up for some of my other member companies who may
believe fast reactors are less than 50 years away
whether they are or not.

Absolutely a fast reactor would have to be
considered a different facility than a reprocessing
facility. You might very well have them both next
door just like you could have a Part 72 facility next
door to a Part 7X facility.

But remember where we started out here and
I think it's a path that NRC is following is that the
reason we need a Part 7X is because a reprocessing
facility is something different than a reactor and
different than a fuel cycle facility. You don't have
the sustained chain reaction. You don't have the
energy levels. You don't have the need for active cooling or passive cooling. But anyway the fuel --
You just don't have the heat loads by the time you get a fuel into a reprocessing facility.

So it would only be appropriate to regulate the reactor under reactor regulations. Now whether Part 50 could handle certain fast reactors or Part 52 that's a whole different questions for a whole different meeting.

But absolutely agree that it would kind of defeat the purpose of coming up with a risk-informed, performance-based and technology neutral reprocessing, recycling plutonium green washing facility if you were to try to include the fast reactor itself in that.

MR. CAMERON: So it wouldn't be a ride in the regulations theme park.

MR. McCULLUM: No, it would be like this is Disney World. That would be over at Universal Studios I think.

MR. CAMERON: Okay. I'm glad you made that clear. Thank you.

Alex, I'm going to go to --

DR. HILL: Can I make a follow on first?

MR. CAMERON: I'm sorry. Do you want to
continue on this? Go ahead.

DR. HILL: Yes. I just wanted to follow on with this to help us better understand the position. I appreciate what Rod is saying about we would not want to incorporate licensing a potential fast reactor as part of the regulatory framework for a reprocessing center because the requirements would be different and we already have a regulatory infrastructure, be that 50 or 52, to address it.

Could you help me understand what the difference in that logic would be to applying it to a fuel fabrication facility that may be part or co-located with a reprocessing installation where we already have an existing regulatory framework for licensing a fuel fabrication facility that would be co-located?

MR. McCULLUM: Well, I think that there are distinct differences between fuel fabrication with fresh uranium out of the ground and fuel fabrication with reprocessed material. You would want to keep those processes integral to the same facility. You would not want to have regulatory boundary issues within that facility because you are dealing with fuel that will always have some trace amounts of fission products in it which the current fuel fabrication
facilities do not have. Again, a different level of hazard.

So I would envision again the fast reactor would be a customer facility. It doesn't matter if you're sending MOX from a reprocessing facility in a non-descript town in the middle of the country somewhere to one of the East Coast reactors or whether you're sending some more advanced reprocessed fuel to a fast reactor that's sitting right next door. You still had a transaction where a facility has produced fuel and is shipping it to a customer. So you now are in a different facility, different operators, operating different procedures, operating in entirely different ways of operating and trained in different ways. You know, a reactor operator in a reprocessing facility, the operator would probably be different people entirely.

While you can put these facilities next door to each other, that's really irrelevant because all you're talking about is how far the producer has to ship to the customer. But the fuel fabrication with the irradiated material definitely belongs inside the same facility and the same regulatory framework.

MR. CAMERON: Okay. Thank you.

And is it Dr. Roca?
DR. HAYES: No, it's Dr. Rose Hayes.

MR. CAMERON: Oh, Rose Hayes.

DR. HAYES: I'm Rose Hayes. As I said before I'm a member of the Department of Energy Site Specific Advisory Board for the Savannah River.

And my question goes to the issue of the statement that was made -- that no waste would be left on site. You probably know that the State of South Carolina along with the State of Washington and I guess a couple of other parties are currently suing the Administration because Yucca Mountain was closed, taken off the table, as a national repository. And it's the view of South Carolina and the view stated in the court claim, the legal action, that the 1982 Nuclear Waste Policy Act was a Congressional act. And until the Congress modifies that act the fact that it designates that spent nuclear fuel or waste will leave the sites, both commercial and the sites where legacy waste was generated, and go to a deep geologic repository. And, of course, then in '87 then the Act was amended to specify that would be Yucca Mountain.

And that has not happened. The Congress has not modified that Act or withdrawn that Act. So as far as South Carolina is concerned there is a regulatory environment that addresses spent nuclear
fuel processing. That is it prohibits it. It says it will go to a deep geologic repository and it's specifies that that site will be Yucca Mountain.

We've had difficulty at the site because, of course, Yucca Mountain is off the table. And now when we have a report from any of the program managers and we have the flow charts the little square that used to say Yucca Mountain and then National Repository and then to be determined kind of thing it's problematic. Where would the waste go from a reprocessing site?

MR. CAMERON: Britt.

DR. HILL: Yes. Thank you, Dr. Hayes.

I remember reading late last week in the press that the D.C. Court of Appeals is close to issuing a ruling on the pending lawsuits by the State of South Carolina and others. Hopefully that ruling will shed some light on a legal interpretation of how the Nuclear Waste Policy Act is being implemented.

I can say that the Nuclear Waste Policy Act is specific in that both spent nuclear fuel and high level radioactive waste would go into a deep geologic disposal site and that the high level waste is the highly radioactive materials resulting from reprocessing. So I think if I'm answering your
question correctly, the existing legal framework, the Nuclear Waste Policy Act, provides that the highly radioactive materials resulting from reprocessing would go to deep geologic disposal.

The question, of course, is now that Yucca Mountain appears to be off the table by the actions of the Department of Energy and others where is that site located. And as we all know there is no specified site right now. And whether that can remain in limbo for awhile or the Nuclear Waste Policy Act must be going forward is a question that the courts will be ruling on fairly soon.

MR. CAMERON: Okay.

DR. HILL: Did that address your specific concerns?

MR. CAMERON: Thank you. Do you want to do a quick follow-up? All right.

DR. HAYES: Not actually because the statement has been made here that in a reprocessing facility no waste would be left on site. Are you assuming that that waste would go to this nuclear waste storage site that our government has committed to eventually provide or is there another kind of site that waste from a reprocessing facility would go to?

MR. CAMERON: That's what are the
assumptions behind your statement.

DR. HILL: The assumption is for decommissioning and there are several stages for decommissioning that to get to an unrestricted license there is no intent to have disposal of any significant waste remaining on site. Now when you go to a decommissioned site, that would mean that the waste would have to be offsite. I'm afraid we don't -- Nobody knows what that disposition pathway for spent fuel and high level waste will be.

MR. McCULLUM: Well, while we don't know, if I can interject, the absolute answer to the question is that the high level waste resulting from reprocessing or spent fuel will go to repository. There's only one thing in the whole world of nuclear waste there's absolute consensus on and that is that geologic disposal is required in any scenario.

We had a path to site geologic disposal in Yucca Mountain. The Blue Ribbon Commission is affirming that geologic disposal is necessary. If the Blue Ribbon Commission recommendations are enacted into law we will then be embarking on the process of selecting an alternate geologic disposal site.

I think the time frames are instructed here. We heard earlier today that NRC does not
anticipate completely this regulation until 2015. It would be some years after that that even the most aggressive bidders would be able to build a recycling facility and get it licensed. Or get a license and then build it.

So we will know before we move down this path whether it's going to be Yucca Mountain, whether we're selecting another repository. We'll know how long down that path we are. And I think NRC in its waste confidence decision talked about those time frames and how long it might take to select another repository. And that was part of the reason for expressing their confidence in whether or not those time frames could be met.

MR. CAMERON: Okay. We have two more commenters out here and then I'm going to ask Bret to come up to tee up financial for us.

Mary, do you have something to say on this issue? And, Tom, I didn't know if you had something more.

Okay. Mary, go ahead.

MS. OLSEN: Just briefly. I think it's really important to remind everybody that Congress directed the National Academy of Sciences to do a study on Yucca and that one of the strongest industry
participants, Dr. Pickford, was one of the dissenting voices on that study.

And I -- just very briefly. I agree a lot of time and money was wasted on Yucca Mountain. And 200 organizations in 1998 tried very hard to say to the Department of Energy hang this up now. So I know the courts are grinding it out. But I really don't think it serves anybody's interest to advocate for something that was going to fail.

So I personally am here to tell you that it's a fabulous success that we're turning away from it. And I hope we can all walk away from it together. And I hope that when and if a repository program is undertaken again the rules are the rules. And if you can't do that for a repository you certainly can't do it for a reprocessing facility. And if you can't do it for a reprocessing facility, I hope you all get some jobs you can be proud of. Thank you.

MR. CAMERON: Okay. Thanks, Mary.

We're going to go to the two commenters here. And, Bret, if you could join us at the table. This is Alex Murray from the NRC staff.

MR. MURRAY: Thank you very much, Chip. I am Alex Murray. I am a member of the NRC staff.
also a member of the public. So I'm very interested in all of this as well.

I just have one quick comment and one very quick question. The comment does relate to effluence. The Advisory Committee on Nuclear Waste and Materials in NUREG 1909 does -- In that document, they have a very good discussion on effluence and they point out that there are both dose limits and quantity limits. And I think that has sort of been a little confused in the discussion here.

In that same document, they point out that most likely the dose limits would be easily met by a modern reprocessing facility. The dose limits are quite low and the expected doses would be even much lower below that.

The question comes with the quantity limits and the term that is used in the NUREG 1909 is "microdoses to mega populations." So you're talking about extremely low radiation doses from the releases. However, when you take it times a few billion people on the planet you actually come up with something that can be a measurable dose.

The discussion is very good, very informative, what it really means. And the conclusion from that NUREG 1909 is that at the present
time if relatively standard fuel is used for reprocessing then there would have to be removal, fuel effluent treatment for removing at least krypton-85. By implication, if old fuel used then krypton-85 removal might not be required.

And this is all in the NUREG. And it's also discussed in some of the documents the staff has put out which are on the NRC reprocessing webpage, public webpage.

My question to the panel here, just a very quick question, has to be are there any thoughts of any of the panel members about using fuel which you say is 35 or 40 years old of which there is plenty right now. Thank you very much.

MR. CAMERON: Okay. Thanks, Alex. That was a short question and maybe the answers will also be short. Does anybody have any opinions on that age of the fuel?

Sven. Jan Bresee, Department of Energy.

MR. BRESEE: In consideration of fuel recycle, any process regardless of the technology, any size plant, any pilot activities would always start up with the oldest fuel available simply as a safety issue. You would never begin with short-cool fuel.

The question of whether short-cool fuel
and by short-cool I'm talking about five to ten year
decay after coming out of the reactor, whether that
will ever be a reasonable feed to a processing plant
will depend ultimately on the regulations associated
with it because there are additional problems brought
on by material that has only decayed less than a half-
life of some of the radioisotopes.

The biggest argument in favor of short-
cool fuel is related to the control of americium and
that is a technical issue that will still require
additional consideration.

MR. CAMERON: Sven.

MR. BADER: Yes. I'll just add a little
bit to it. It's a huge tradeoff study. I mean, as
Jan indicated, if you reprocess the young fuel you
remove the Pu-241 which is a short half-life. It
decays to americium-241 which is a long half-life. So
it's really looking at the integrated process. What
do you want your final waste form to look at that
you're going to put in the disposal.

The reason we're advocating recycling is
we've got this borosilicate glass where I'm not going
to releasing any fission gases any point down the line
due to a seismic event or whatever that might cracks,
used fuel that's been disposed of. You know we have a
very robust waste form.

But again the tradeoff study then is how do you meet the regulations on the gaseous releases such as the krypton-85. So it's a very large tradeoff study. But the one benefit we have in the United States is that there's an immense quantity of spent fuel here. And so you could do blending. You could add different aged fuels and meet the regulatory limits. But in order to establish the best process forward we really need to know the regulatory limits.

MR. CAMERON: Thank you. Thank you both and thanks for that question, Alex.

Yes, sir.

MR. WOLF: My name is Clint Wolf. I'm Executive Director for Citizens for Nuclear Technology Awareness in Aiken. I'm also a former manager of laboratories that have involved nuclear research and development and actinide materials.

And I have to admit that as I was listening to this discussion I was looking at the word "reasonable" up there as low as reasonably achievable as an aide to helping define release limits, etc. And I have to admit I'm not an expert on nuclear regulatory literature.

But I'm wondering. Is there anything in
the NRC's literature that helps one define the term "reasonable"? Because it seems to me that in much of what we've done in the past we've simply done as low as achievable rather than as low as reasonably achievable. So is there something that really does help us tie things to real health effects, real environmental effects, as opposed to just going as low and low and low as technology will take us?

MR. CAMERON: Does anybody want to put a further gloss on the ALARA concept and what reasonably means in terms of the ALARA concept? I won't ask anybody to put a gloss on what reasonable assurance means. But how about anybody on ALARA and the reasonable part of it for --

(Off the microphone comments.)

Am I looking -- I'm looking for NRC.

PARTICIPANT: Yes. I'm the wrong person.

MR. CAMERON: Okay. Yawar or Wendy.

Yawar, do you want to handle this one?

Okay. This is Wendy.

DR. REED: Hi again. I thought I just gave -- But never mind. I'll try and answer this. In terms of Appendix I, Appendix I was mentioned. One of the questions we wanted feedback on was whether we need to develop sort of similar requirements. And one
of those is the cost and to implement a technology to actually reduce release limits based on the benefit of doing that. And that essentially is how I think the reasonable is defined or quantified if you'd like.

MR. CAMERON: And, Yawar and Wendy, after we break and if this gentleman -- is it Clint --

MR. WOLF: Yes.

MR. CAMERON: If Clint Wolf is still around maybe you can have a further discussion on that. And now Greeves wants to get on the record on this or what?

MR. GREEVES: It's an NRC answer that should be given. Maybe we just have the wrong NRC people in the room. But there's a rich history on developing criteria for ALARA. It's well documented. There's an answer to the gentleman's question.

MR. CAMERON: And I think --

MR. GREEVES: There are guidance documents out there telling you how to go through an ALARA process. I can't remember what the exact guidance document is.

MR. WIDMAYER: And particularly in the reactor arena.

MR. GREEVES: Yes.

MR. WIDMAYER: And I think we just have
the wrong people in the room. But I think the path
that they want to take on this particular subject
there's well-documented path for ALARA. And I don't
think they would -- It's a sound approach to take in
this regard.

MR. CAMERON: Okay. Thank you for that.

John and Derek and I'm sure that Wendy and Yawar could
talk about the rich history on this. But trying to
give a short answer. And maybe, John, you could get
together with Mr. Wolf also on this and share.

MR. GREEVES: I would be happy to share my
experience historically.

MR. CAMERON: Okay.

MR. GREEVES: There is a rich history on
this.

MR. CAMERON: Good. We're going there.
We're going to Dr. Bret Leslie to talk financial
protection right now. And go ahead.

DR. LESLIE: Sure. Thank you, Chip.

Actually this question is -- Clint, you
had a really good question. But I think now that I've
had a chance to listen it's actually twofold. ALARA
is a concept within NRC regulation. And it's as low
as reasonably achievable.

But the concept of cost also came into
play in the 40 CFR 190 regulations. And that is an EPA process. So in fact if EPA comes forth with a public rulemaking on 40 CFR 190 that cost issue comes into play in their determination of what are appropriate release limits. So there are two different ways that the idea of reasonable comes into play and John Greeves is right. It's well-founded in NRC regulations in terms of NRC licensees, in terms of as low as reasonably achievable. But that same concept came into play in EPA's development of 40 CFR 190.

So now I'll put my financial protection and requirements and fees hat on. And now we're going to talk about a different topic and one that is much more constrained by the laws that exist.

I have three topics I'm going to talk about and the first one has to do with nuclear insurance. And this is Gap No. 12. The Price Anderson law basically sets out a framework for ensuring that there's nuclear insurance in case of accidents for protection of public property in one instance.

But basically when NRC staff developed its gaps it identified that the current regulations in which NRC implements the Price Anderson Act in 10 CFR
140 really did not address reprocessing facilities directly. And so what the staff has identified is that we would go forth in our rulemaking for reprocessing facilities to address that gap and identify in particular that because these are reprocessing facilities or production facilities they would be subject to Price Anderson.

In addition, when we looked at 10 CFR Part 40 there are agreements that are in these appendices as forms. Because the scope of 40 CFR -- 10 CFR 140 -- just because I worked at EPA I have 40 on my mind -- the 10 CFR 140 does not include the forms for reprocessing. So basically there are two aspects that we would be proposing to revise.

And again I just said that to extend the applicability of 10 CFR 140 to reprocessing facility one of the things that we would have to do is to establish a specific amount of primary liability insurance required for the reprocessing facility. Because NRC is fee-based in the sense that we charge the applicants or the licensees to basically regulate them, we would be having to execute an agreement. So that would take some time. In 10 CFR 140 there are fees associated with developing these agreements. So again that would be the third subbullet up there.
And finally the last thing for this particular gap would be to develop the appendices or include a new appendix for reprocessing facilities.

In the previous meetings and in the NEI White Paper this topic was not addressed. We did not consider any alternative approaches other than rulemaking because by statute it has to be done by regulation. So that's the first topic.

The second topic has to do with 10 CFR Part 170 which are the fees. Again this is a class of licensee or a different type of licensee. And in essence 10 CFR 170 lays out the fees for the different types of facilities. And that regulation does not include fees for a production facility licensed outside of Part 50. And because as you've heard today we're talking about something called 7X. Therefore this regulation would need to be updated.

So the NRC staff position is that we are proposing to revise 10 CFR 170 again to extend the applicability of that regulation specifically to reprocessing facilities. We would also be proposing to establish what those fees are or the schedule of fees. And again no alternatives to rulemakings were considered because Omnibus Budget Reconciliation Act tells us we need to do it by rule.
In this case for this topic, NEI didn't necessarily talk very much about it but acknowledged the fact that in terms of submission of a license application it would require them to submit the fees, whatever those fees are, prescribed in 10 CFR Part 171.

And again in the previous meetings we've had no other input. But again because the staff is at the proposal stage, we want to make sure that people are aware of what we're planning to do as we go forward.

And the last bullet is kind of a reiteration of the first bullet.

So the third issue that I want to talk about is the other part of our fee structure which is in 10 CFR Part 171 which is the annual fees. And when we identified this gap we specifically stated that 10 CFR 171.3 does not again within its scope -- Up front in these regulations we define what the scope of the regulation. The current regulation does not include reprocessing facilities.

On the next slide, this should be old hat by now. NRC's proposed position is to revise 10 CFR Part 171 extending the applicability to reprocessing facilities, establishing what the annual fee is. We
did not look at other alternatives to rulemaking because the statute says we have to do it by rule.

For this topic as well, there was no input in our previous meetings or any of the written submissions. And again we did not consider alternatives because we're constrained by statute.

Not so meaty in terms of the gap integration. These all concern issues that are defined specifically and addressed by statute. The rulemaking is the only alternative considered. And to the extent that we've had stakeholder input we've considered that.

In the summary that we put forth we didn't identify any specific questions. However, as we were getting prepared for the meeting, I tossed these up because you know there's nothing worse than giving a talk and actually having no one say anything afterwards. So these are for your consideration.

And with that I'm going to sit down.

MR. CAMERON: Thank you, Bret.

Do we have questions and comments on all this? Mary?

MS. OLSEN: I have again a conceptual problem. I'm sure there's probably a simple answer. But Price Anderson as it applies to the reactor fleet,
it gives a nice cap on the liability. But up to that
cap everybody's sort of joined at the neck and
everybody pays in.

So like who -- How does it work for Price
Anderson to apply to something like this if there's
only one? Where is its peer group that's joined at
the neck? Or is it in fact the entire industry?

DR. LESLIE: Maybe I'll let Rod try to
address that or someone else. But I can say for
instance there is a specific single facility that is
also identified in 10 CFR 140 which is the MOX
facility. And there's a specific limit and there's
only one licensee there. But I think -- Rod, do you
want to --

MS. OLSEN: One perspective licensee.

DR. LESLIE: Right.

MR. CAMERON: Good clarification.

MR. McCULLUM: Yes. I don't think I'm in
a position here to extend the liability of a
reprocessing or recycling facility to all the reactor
owners and operators. So there would have to be --
And I'm not an actuary and I haven't stayed in enough
Holiday Inn Expresses to be one. But it could be
worked out along the lines of the MOX facility.

But I'm not saying that it's not something
that should be considered. But there's a lot of
discussions, a lot of negotiating, that would have to be done on that. And I think the path that NRC is on for now is appropriate.

MS. OLSHEN: I don't understand what the path is.

DR. LESLIE: First for that, it would identify specifically that -- Let's just say for instance that we were approved to go forward with the 7X. We would have to revise 10 CFR 140 to say Price Anderson Act applies to facilities licensed under 10 CFR 7X.

We would have to identify what that limit of liability was. And again this would go through rulemaking. And we would take the information that is available to address what that appropriate limit is.

And so today all we're seeing is this is kind of where we would have -- what we would have to do. We're not necessarily saying what the amounts are or the details. But this is kind of giving you an idea of where we're headed.

MS. OLSHEN: So if there's only one and there's a limit, then that one would pay it.

DR. LESLIE: I'm not the best -- I'm the person presenting the information. I'm not the person
who wrote and did the analysis. So I will take that as an action and get back to you and perhaps we'll need to beef up what we've written so far.

MS. OLSEN: Yes, get back to me. I'm really curious.

MR. CAMERON: Good. We'll close that loop and as Bret said all of this, the rationale, the process, everything, will be explained in the supplementary information to a proposed rule. But you can get the information before that.

Okay. I'm going to go back out to the audience and go to Bobbie Paul for some discussion. Bobbie.

MS. PAUL: Thank you all for everything you've shared. It's been a long day.

I did want to report that Georgia EPD I did talk with Director Alan Barnes and Jim Hardeman who heads up our radiological. He said to say hi to you, Mark. And they were not invited. So Jim had seen something a couple of days ago on the site.

I was really interested in hearing about the inconsistency that you talked about, Mark, about EPA DOE and how the states are caught with that. We're extremely interested in tritium because of SRS and because of around Vogtle.
And I assume that most of you know that efforts are underway in different groups around the country to try to tighten the EPA standards on tritium from 20,000 picocuries per liter to 400 or 500, at least, as a health goal or something. I think it's passed in California, maybe in Colorado as well.

And we do know that from our monitoring from years back of the ten years that we did have environmental monitoring of SRS releases into Georgia that SRS of course recorded many times well over 220 picocuries per liter on site or above.

And I guess the last thing I would say is that I'm not sure who were all stakeholders. I know it takes a village and I know there's NEI, the industry, AREVA, the individual company. And again I would just like to implore that the stakeholders on the ground and especially in Georgia and especially in the counties that sit directly across from Savannah River site and around Plant Vogtle, Burke County, Screven County, Effingham, Jefferson, parts of Richmond County, that these communities have felt shut out in part of a silence around SRS for years for decades. And that if anything that we can do with Georgia or other things that you can do to reach out on the front end we're looking at the back end of
something that we haven't solved the problems with. But I think we would solve more problems if more common sense people were at the table.

MR. CAMERON: Okay. Thanks, Bobbie.

And this process is for what's called the -- used to be called I guess the technical basis and now at least reading the Federal Register notice it's called the regulatory basis. That really is what the Commission needs to see to approve the rulemaking. So there's going to be reiterations of this process for the development of the proposed rule, the proposed rule.

And so thank you for those comments and they will be well noted. I'm not going to touch the people with common sense at the table. But thank you.

And this is Suzanne from the League of Women Voters in South Carolina.

MS. RHODES: Yes.

MR. CAMERON: Not Georgia.

MS. RHODES: No, not Georgia.

MR. CAMERON: South Carolina.

MS. RHODES: I don't know if they're watching this. By the way, I thank Tom and some of the other folks for getting the word out. That's how I heard about it.
The League's been following particularly Savannah River for decades literally. And I have sort of a common sense thing. I think we need to resolve some really important challenges, particularly DOE, NRC and industry, that have come up this year. And I think it's a good time to focus on learning from experience and setting priorities. I'm speaking for the League.

The need for reprocessing seems to be down the way. Our experience with reprocessing isn't that great. Neither is it by the way with MOX which is another concern of ours, both of which are expensive and not proven. And recently I'm not sure how many are aware, but the SRS experience with plutonium has been judged unsafe.

So we think that industry, NRC and DOE ought to look together at hard and onsite storage casks, learn what we can from other's experience in reprocessing and MOX and take care of our immediate needs as best we can this year with our limited staff and funds.

Thank you.

MR. CAMERON: Thank you very much, Suzanne. And Suzanne gave us a written comment that we're going to attach to the record and that the staff
is going to put into the record. Suzanne, what is your last name for the record?

MS. RHODES: Rhodes, R-H-O-D-E-S.

MR. CAMERON: Okay. So, Brandon, you have that. All right.

Well, thank you all for -- Oh, we have someone else. Oh, I'm sorry. Yes, sir.

MR. EVANS: Hi. I'm Peter Evans. I'm not affiliated with anybody or any organization. But I live here and have property here and just like to give you an individual's concerns here.

A major concern is having a for profit entity being involved with a reprocessing facility. There are so many areas or things that could come into play such as cost cutting resulting in risky practices, shareholder pressure, pressure from politicians, many concerns there.

And then also you're dealing with an immensely potentially deadly substance or substances here. And if there is a major accident here there could be huge damage and especially if some of this got into the aquifer. And then you could easily get into probably the hundreds of millions of dollars if that were to occur.

And you broached upon or talked about the
level of insurance that you would have for the MOX facility. But you did not say what that level is. Earlier we heard mention of $1.2 billion for one cleanup. Would that -- Is there an insurer that would give insurance of that amount? Are you going to be realistic in how high the potential damage could be? The numbers are horrendously high. And this is of great concern.

And then also we all worry about having more nuclear activities in an area like ours where it's a major metropolitan area. We've got major aquatic water resources here, rivers. We've got the City of Savannah. We've got Hilton Head depending up on the Savannah River for their drinking water. And none of this seems to come up.

But in the future you've got to think about this before you think of any other expansion here. I mean this is a growing area. And many of you may want to retire here. So please keep it in mind.

But thanks again for coming here and having the public forum. It's really appreciated.

MR. CAMERON: And, Peter, you're from right here in Augusta, Georgia.

(Off the microphone comment.)

You're from Aiken. Okay. Thank you,
Peter. And I just -- Your concerns apply to a generic reprocessing facility. But I just wanted to -- They were stated in terms of here, in other words, this area of the country. I just wanted to reiterate that there's no -- We're not here because there's any indication that this is where we might ultimately get a license application for a reprocessing facility.

But thank you very much for that. And if any of our MOX staff wants to talk to Peter about the limit that he brought up, I would hope that you would do that.

Jack Davis.

MR. DAVIS: Yes. Thanks, Chip.

I just wanted to mention because it's come up as you said several times that this is actually the third meeting we've conducted this year. One was done in Washington, D.C. One was done in the West in Albuquerque. And now one in the Southeast. So it's not indicative of "Oh, we think that the facility is going to be here or there." We're trying to get a broad perspective of views across the country.

MR. CAMERON: Thank you for that, Jack.

And Mary.

MS. OLSEN: I'm not trying to say that you guys don't mean every word you just said. But we all
have on our computer hard drives all the slides from Savannah River site. You know, what do they call themselves? We're calling them EI-EI-O because they changed the name to farm instead of green energy park. But come on. They've got reprocessing all over their overheads. So it's not like this community hasn't given indications that this was an idea.

So I can hear you that you mean what you say about your choice of meeting location. But I just need to hit the nail on the head because there's been two or three years of me coming down from North Carolina from this area to hear about reprocessing.

MR. CAMERON: Yes. And I don't think we're saying that there's no idea that there might be interest in reprocessing here. So thank you for that and thank you all for a great discussion and attention today. And I think we're ready to close out for today.

We're going to start at 8:30 a.m. tomorrow, a half hour earlier. And I apologize for those who are driving. But there are comment or feedback forms. There are some for today. This is to help the NRC. And we've already gotten some process suggestions today. There's one for today. There's one for tomorrow.
There will be coffee out in the morning. And I will save coffee for all of you who are driving in from South Carolina. And you can leave your badge and name tent overnight.

Okay. Thank you all. I think we're adjourned unless anybody has anything further. Thank you. Off the record.

(Whereupon, at 5:00 p.m., the above-referenced matter was concluded.)