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JOINT DOE/NRC WORKSHOP ON

DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE

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Hyatt Regency Phoenix

122 North Second Street

Regency A Ballroom, First Floor

Phoenix, Arizona 85004

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FRIDAY

MARCH 4, 2011

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8:30 A.M.

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CONTENTS

Introductions 3
Status of DOE Order 435.1 Updates 21
Break
Status of DOE Order 435.1 Updates
(cont.) 67
Public Participation 68
Lunch
NRC Presentation of Examination of
10 CFR Part 61 Revisions 113
Break
Joint DOE/NRC Panel Discussion 218
Public Participation 255
Adjourn

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

(8:30 a.m.)

MR. CAMERON: Good morning. Good morning everyone.

My name is Chip Cameron and it is my pleasure to serve as your facilitator for today's meeting. And I'd like to welcome you to a joint Department of Energy and Nuclear Regulatory Commission public meeting on low-level waste issues, the update of DOE Order 435.1, and the possible revision of the NRC's Rule 10 CFR Part 61. And as your facilitator I'll try to help you all to have a productive meeting today. And I just want to briefly go over some meeting process issues with you so that you'll know what to expect today. I want to tell you a little bit about the format we're going to be using, some simple ground rules to help us all have a productive meeting and an agenda overview for all of you.

And in terms of format, we're going to have a more or less a town hall format where we're going to have presentations by the Department of Energy staff this morning and then presentations by the NRC staff this afternoon; and we're going to have a discussion period on both of those sets of presentations, and then we're going to have a joint

DOE/NRC panel discussion towards the end of the day.

And we have guests on the phone through the WebEx system and they are going to be able to see the slides and are going to be able to hear everything that is said by the presenters and all of you in the audience.

In terms of ground rules for today's meeting, I would just ask you to wait until all the presentations by the Department of Energy staff are completed, or the NRC staff in terms of this afternoon, before we go to questions and comments; and that way you'll have a complete picture of what the Department of Energy and the NRC are doing.

When we get to the discussion period, if you have a question or a comment, just signal me and I'll bring this cordless microphone to you. We also have standing mics out here in the audience for your convenience, but I'll try to get to you with this cordless. And if you could, just please introduce yourself to all of us.

And I would ask that only one person speak at a time for two important reasons. One is so that we can give our full attention to whomever has the floor at the moment and also so we can get what I call a clean transcript. We do have a court reporter today

and it is Tina Ihrig is with us, and there will be a transcript of today's session. It's the Department of Energy's record of the meeting, of what transpired today, it's the NRC's record, and it's your record of the meeting. And I will let you know how that can be accessed and how that will be available to anybody that wants to see the transcript.

Try to be concise, as usual, in what you say when we get to discussion. We have a lot of people in the audience, which is great, and we have people on the phone and I just want to make sure that we give everybody the opportunity to speak today.

And when we get to the discussion period, I'm going to start with all the people in the room here in Phoenix, and then I'm going to go to all of you on the phones to hear your comments and questions. And I'm sorry to have to sort of segment it that way, but that will make it a little bit more efficient and peaceful.

In terms of the agenda, one note is that the agenda that was on the NRC meeting notice website has been revised since it has been posted. And I'm going go through this agenda very quickly for you, but the most important thing is we are going to be running until 5:30 this afternoon and I think the original NRC

agenda had us finishing at 5:00.

Okay. And so we're going to start -- we're going to start out this morning with DOE, and it is going be all DOE all morning. And we're going to start with Bill Levitan, who is the director of the Office of Environmental Compliance at the Department of Energy in the EM office. And Bill is going to kick it off for us. And then we are going to go to Marty Letourneau, who is the project lead for the DOE Order 435.1 update, and Marty will introduce all of his colleagues that are going to be talking after him.

And at that point we are going to take a coffee break, then we're going come back and we're going to open it up for discussion to everybody here in the room and the phones. And I'm going try to create some discussion threads as much as we can so that the discussion is a little bit more coherent than it usually can be at some of these sessions. So we'll go to someone for a comment and I might ask if anybody else has anything to say on that particular issue before we move on to the next issue. And we will go to the phones, the people on the phones before we finish up.

And we are going to break for lunch at 11:45, coming back at 1:00 and then we're going to go

to the NRC portion of the meeting. And that's going to start with Larry Camper. And I'll introduce Larry when we get to this afternoon's session. We have a keynote address by Charlie Miller from the NRC that is similar to the keynote from Bill Levitan. This morning we're going to go through a series of NRC presentations and we'll take a coffee break, then we'll come back for discussion.

There are some cross-cutting issues between the update of the DOE Order and NRC's consideration of changes to Part 61. So we're going have everybody up on the stage from DOE and the NRC for a panel discussion at the end of the day. That's scheduled for 4:15. And primarily we're going to try to address those cross-cutting issues. What are the implications for the NRC from the DOE update and vice versa? If we hear questions like that throughout the day, what I'm going to do is I'm going to put those in the so-called parking lot so that we'll come back to those at the end of the day.

And I do have to make a required safety announcement here and it just consists of the fact that our emergency exits are over here on this side of the room where the exit signs are. If you go through either one of those exits, you go to the right and

there's a door that leads out to the street. Okay.

And I just thank you all for being here. Are there any burning questions about the agenda or anything at this point before we go to Bill to lead off? Okay, great.

So I'm going to ask Bill Levitan to come up, director of the Office of Environmental Compliance. And Bill, are you going to use the --

MR. LEVITAN: Can everybody hear me?

MR. CAMERON: Good.

MR. LEVITAN: Wow, I can hear me.

Good morning, everybody. As the first speaker of the morning that's sort of almost mandatory to make sure everybody's awake and listening.

First of all I want to thank Gregory Suber and Mike Lee, for putting this together. I really appreciate the efforts they put in, all the nice arrangements, Phoenix's finest back there to help us along too. So I appreciate you being here as well.

Frank Marcinowski was going to be the keynote speaker but he fell ill earlier this week and so his plans changed. And since I was out here and going to be making some opening remarks anyway, this is a combination of opening remarks and keynote. And they are remarks; I'm not very good at formal

speeches, so we'll just go on.

The first thing I'm curious about is how many people were at the session yesterday afternoon? Oh, maybe I should ask how many people weren't at the session yesterday. No, that's okay. And then how many people on Wednesday were at the session that Marty led on DOE Order 435.1? Okay, fewer people. Well, we're going to cover a lot of that same ground, so I'm glad to see that a lot of you here weren't in that session on Wednesday, because we really do look forward to have your input as we raise issues, as we move through DOE Order 435.1.

A lot of you may not know me. I was in consulting for 16 years, in environmental consulting, working mainly NEPA and CERCLA. But it's interesting because in the NEPA and CERCLA world you do risk assessments, which is my background. Came to DOE, I did a lot of stuff in various places for Hanford and then in the front offices. And then two years ago I took over this office of Environmental Compliance and pretty much got immersed in DOE Order 435.1 performance assessments. And to me it was just like, wow, this is just like -- the risk assessments are the types of analyses we do in NEPA. So I have a fair familiarity with the processes.

But it is very interesting, especially sitting through yesterday's discussions and also some activities I had been in over the last two years, what a tight community this world of low-level waste disposal performance assessment is. And it was pretty clear to me yesterday many of you know one another and you sort of know your views on things and obviously there are good professional differences that are being aired. And so I appreciate that and look forward to actually having all of you give us the feedback.

One thing, just to go over a little bit of the history --

And I'm just going to -- Marty's going to be using this presentation, so I'm just going to skip to a few slides.

On this slide if you notice our original radioactive waste management Order, which maybe some of you -- we were talking about geezers yesterday, so maybe some of you were around in 1988 when the original radioactive waste management Order was issued.

It's interesting if you think about 1988, because EM was then formed in 1989. And think about the status of radioactive waste management at DOE at that time. We had a lot of legacy TRU and a lot of

legacy low-level waste, in some cases unsafe conditions. We had radioactive waste in the tanks. And we all know about the tanks at Hanford.

I think we've forgotten about one of our big successes, which was the burping tanks if you remember. And C-106, I think it was, was the high-heat tank. And so that Order went in, EM was formed and lo and behold, here we are today. WIPP is operational. TRU waste is moving there in good order. Low-level waste is being disposed of. The tanks at least for now are in a somewhat safe configuration. And when you look across the complex, Hanford, we've emptied six tanks, Savannah River we've closed two tanks and emptied two to four more. I don't know where we are on those other two. Oh, we're up to six.

And West Valley, of course, those tanks are emptied and the waste has been vitrified. DWPF is operating. In Idaho we've emptied most of the tanks, 11 of the 15. So we've made a lot of progress with this Order. And then of course 11 years later when we updated that Order, changed the number to DOE Order 435.1 and here we are now 11 years later looking to update it again.

I'm just going to skip a few slides here to the complex-wide review. What we did was -- I

think you're familiar with the complex-wide review, if not Marty will talk about it in more detail. But basically this was where we went out over the last year and a half or so and pulsed all of our sites to see how they were doing Rad waste management -- and you can see the three types of Rad waste forms -- as well as how DOE Order 435.1 was working for them or not working for them.

And basically you can see here the results. And Marty will probably go into it in a little more detail. But if you add up all of those numbers, you'll see that the BP is best practices and AIs are areas for improvement. And it comes out that we had 62 best practices and 118 areas for improvement. And so the idea is let's take those issues and roll them into what we're now doing in terms of revising DOE Order 435.1.

We've done this -- this is now the third workshop that we're doing on this Order. The first one was nearly a year ago out in Portland and that was basically the team, the writing team getting together, getting organized. And then the second workshop was, about six months later or so, where the team had gotten pretty much into their writing assignments, there were cross-cutting issues to deal with. And now

here we are where the Order itself and the rewrite of the Order has made a lot of progress. And I really want to make it clear that we want to get input from you here in this room and a lot of you, obviously, coming from the Rad Waste Management Conference have areas of expertise that are very helpful to us, but also for those that are on the phone, to also get your input as well.

The DOE Order is a DOE-wide Order. We have NNSA, Science, Nuclear Energy, and of course EM that are producing and managing radioactive waste.

But I'm going to get a little parochial here because I'm with the Office of Environmental Management and I think we have a particular interest in this Order and a particular need to have an update and to follow it because, frankly, compliance is what drives the EM program.

And in my office, which is the Office of Environmental Compliance, not only are we the owner, if you will, for the DOE Order -- we're the ones that are responsible for its maintenance, responsible for ensuring its implementation across the Department -- but we also worry about other laws and regulations. And in particular, as you are all well aware, CERCLA, RCRA, NEPA, NESHAPS recently for those who are

familiar with what's happened at SPRU. So we've cut across a lot of regulations.

So for me it's a little bit schizophrenic because on the one hand we're sort of the regulator of DOE Order 435.1 and on the other hand we're the regulated under CERCLA, RCRA, and NESHAPS. So to me it's very interesting when you start comparing, say, CERCLA requirements and risk assessment and decision making versus under our own authorities of DOE Order 435.1.

And I tell a story that my staff has heard me say many times and maybe some of you who've worked with me have heard it. And I think -- I don't know when the first time they had the conference here in Phoenix; maybe it was three years ago? Yeah, three years ago. I was sitting in a session and it was on the Hanford Deep Vadose Zone and we had the Washington State regulator up there who was worried about RCRA and they're talking about stuff coming down from the tanks, you know, going down towards the groundwater in the Deep Vadose Zone. And so he's talking about it from a RCRA perspective.

And then we have one of our folks giving a presentation and he's talking about it from a CERCLA perspective, you know, about the waste around the tank

farms in the central plateau, for those of you that are familiar with Hanford. And I look up there and I think to myself, you know, a technetium atom doesn't know the difference between RCRA, CERCLA, Atomic Energy Act, DOE Order 435.1, NEPA, for those who are familiar with the tank closure waste management, or for that matter Part 61. I mean, it just doesn't. It moves and it does what it does.

And I think that's a very important thing to remember, because here we're going to be in the morning, NRC is going to be in the afternoon. But really what I'd like you to do as you're sitting through both of these sessions, because we'll be doing it as well, is listening to -- we'll be listening to the comments for NRC and I know NRC will be listening to the comments you give us on DOE Order 435.1. Because what we want to strive to do is really try and align those things as closely as we can within our own authorities.

And we do have a common basis, both of us and in fact everybody in this room and everybody who's listening in. And I know yesterday we were talking about the safety case. From my perspective, the way I term it, and maybe it's because I come from a CERCLA background but what we're both interested in is

protectiveness to the public health and the environment. I mean, that is our common goal in these Orders and that's what RCRA tries to get at. So let's -- you know, that foremost needs to be kept in mind.

And how do we go about that? Well, in our world of Rad waste management, whether it's 10 CFR 61 or DOE Order 435.1, we are using the term a lot, risk-informed performance-based decision making. Okay, so what does that mean? Because in the CERCLA world and the RCRA world it's really about the standards base, as you know. And we have five CERCLA cells throughout our complex that accept low-level waste as well as remedial waste, which contains low-level waste, and we have to build that in accordance with CERCLA, which means RCRA, which means liners and the whole -- and RCRA caps and all of that. So that's the standards base. Here we look at performance base. So there's some of the schizophrenia that we have.

The term is risk-informed. So people need to keep in mind as we go through all this, well, what does risk mean? Risk means a lot of different things to a lot of different people. I take it as it's a word you find in Webster's dictionary. You go in NUREG 1757 and there's a definition on risk-informed.

So let's think about what risk means in terms of

protectiveness to public health and the environment. And then you add the term informed to it, well, what does that mean? Well, it means for us that while risk is certainly a factor in consideration of our decisions, it's really not the only factor. And that's one of the reasons we're here is because we want to be informed by all of you, by our public, to make sure that what we end up doing in DOE Order 435.1 -- and I don't want to speak for NRC, but I'm sure they feel the same way, because we talk a lot -- is that once again we're going to be protective of the environment and public health.

Then you think about performance-based. Well, I've talked about that. I mean for us, and I think there was a good discussion on it yesterday, you know, to look at the whole system from when this thing is ultimately closed. Let's start with the cap, the waste form, the inventory, what's underneath, whether it's an engineered barrier or whether it's a natural system, and then all the transport, phenomenon that occur during that transport. So that's one thing that I think that we really in the Rad waste management area have a real good leg up on in terms of protectiveness, as opposed to, say, CERCLA or RCRA for that matter.

In terms of risk-informed, sometimes I hear the use of the term "educate" by especially the academics or the people who are the practitioners of it; "We need to educate the public." Well, I think we need to be very careful when we use that word "educate" because we don't know all the answers. We don't know how our communities feel. We don't know how differing professional opinions believe things are, although there are obviously a lot of differing opinions here. So I think it's important that when you think about risk-informed the fact of the matter is we also need to be informed and educated, as well as us educating as we are going out and doing these types of sessions, such that we speak in plain English so people can understand what we're trying to get at so they can then help us as we move forward.

The other thing to think about -- and I always ask this, the NRC knows I've asked this on some of the issues we've had -- is the big question, "So what?" A lot of times you get into these very intense discussions, but then you take a step back and you say well, so what? Because our computing power is getting to the point where we can model things to who knows how many decimal places. But does that really matter? So what? You know, we're down here and 10^{-6} is way

up here. And so that's another thing to constantly think about is the so what?

As I mentioned too when it comes to modeling -- and I was very interested in hearing the discussion yesterday -- is, you know, the modeling can only do what the data supports the model to do. And I was at a meeting a few weeks ago and they were talking about this advanced computing. And from a CERCLA perspective I know that sometimes Darcy's law is good enough, and you can just do it right on a laptop. Well, you can do a lot of things on a laptop now, but you can just do simple equations on a laptop. So that's another thing to keep in mind as we work through this.

And then I have one final thought. We, DOE and EM, have a mission, and you've all heard the mission. But let me put it in financial terms and in temporal terms. That is let's pick on high-level waste. High-level waste is about $60 billion for us to clean up more or less, 50 to 60. With these enhanced tank-waste strategies, maybe we can bring it down. But that's 34 percent of our total life cycle cost of our program or in our to-go cost it might be up in the mid-40 percent so that's a lot of money.

We also have milestones that we've

committed to with our stakeholders, our regulators, the people who live in the cities and towns around our sites. So if you look at Hanford, we're going to have a waste treatment plant up and operational 2019. We want to have a C tank farm closed in 2019.

What are you laughing for, Pam? We'll do it.

We have at Savannah River, we're going to have two tanks closed in 2012, commitment. Another two tanks closed the year after. And then tanks closed years after that. So we're on a schedule. We're using taxpayers' dollars to get this work done. So for me there's really a sense of urgency to get on with it.

And it was -- once again, going back to yesterday. Where's Roger and John? Yeah. Yes, this is a very dynamic field, we're always in transition.

It's been since I worked with John Tseng back when I first came to DOE in 1994 or whenever that was, have always been in transition. And sometimes you've just got to say, yes, we're going be in transition, let's move on, let's get on with it with the information that we have today and the best knowledge that we have today.

So in closing I just ask that you keep

that in mind, that you will help us get on with it, such that we can take care of our business and complete our mission. So thank you very much.

Do I ask for questions, Chip?

MR. CAMERON: Well, let's get everybody else on -- -- and then we'll go back for questions, comments, and I'm sure people are going to want to talk to Bill about some things. But we'll get that when we go to the entire DOE panel.

And I just had a short announcement before we go to Marty Letourneau. If the people on the phones could just make sure that their phones are muted. I guess that some clicking noises are still coming through, so if you could just make sure and mute your phones. Thank you, Bill.

And Marty, I'm turning it over to you.

MR. LETOURNEAU: Most of you have heard the history discussion of DOE Order 435.1 many times already, so I'm just going to go over a few key points. I want to get to the four core team members who are leading the effort to update DOE Order 435.1 and I want to make one clarification.

Bill used the words "revision" and "rewrite," and I use the word "update." And I do that purposefully because I don't believe we are rewriting

or revising DOE Order 435.1 as much as we are trying to update it and make some improvements to it. We're not looking to start over with a clean sheet of paper, we're not throwing out the structure that we have right now. We think that the DOE Order 435.1 structure works very well. And I think that's one of the lessons that we've learned through the complex-wide review that we've completed. So just keep that in the back of your mind. When we get to the discussion of each of the chapters and what we're thinking right now, realize that there may not be as many changes in some places as you thought there might be.

So as Bill said, it looks like we're on an 11-year cycle here. DOE Order 435.1 was issued in 1999 and the real genesis of DOE Order 435.1 was looking back at what was in place prior to that, DOE Order 5820.2A and the Defense Nuclear Facility Safety Board recommendation 94-2. That nomenclature means that that was the second recommendation that was issued by the Defense Board in 1994. They had gone out and looked at a number of our sites, looked at how low-level waste was being managed, looked at what was in 5820.2A and came to the conclusion that things were a little bit light and could use some

improvement. And you can see here from the slide what some of their issues were.

The key thing here though is that one of the first things that we did in response to the Defense Board's recommendation was to go out and do a complex-wide review of our low-level waste ES&H management vulnerabilities. And because the Defense Board was looking specifically at low-level waste, we were looking specifically at low-level waste when we were conducting the complex-wide review.

What was found was, yes indeed, the Defense Board was right. There were definitely areas for improvement in our low-level waste management practices. And they were also right that 5820.2A was a little bit light. It was about yea big, there was not a lot of backup documentation, there was not a lot of guidance, there was not a lot of explanation of the technical basis for the requirements. Where did they come from? Why did they say what they said?

So we started working on DOE Order 435.1 in 1996 and we were focusing on four specific chapters, one for general requirements and then one for each of the waste types. At that time if you're thinking about it, you know 1995, 1996, that was the time when the Department of Energy was implementing

the integrated safety management system way of controlling work, defining work, and safety of work at our sites. And we looked at that process and said, you know, that's not a bad way to think about how to construct the Order.

So we tried to mirror these five steps and document what we were doing with respect to each of these steps in DOE Order 435.1. And if you look at the technical basis document that accompanies DOE Order 435.1, you'll see that each of these steps is represented. The key thing now is for the feedback and improvement portion of this process, that's really where we are now, 11 years later.

So we decided that doing a new complex-wide review would be the perfect place for us to start if we were going to do an update to DOE Order 435.1. But instead of focusing on ES&H vulnerabilities and focusing only on low-level waste, we focused on how is DOE Order 435.1 working? And of course we focused on all of the waste types.

So we spent about a year developing a self-assessment tool that the sites could apply. It was more of a survey tool than an assessment or a compliance audit tool. But we had our four core teams already established for general requirements, high-

level waste, transuranic, and low-level waste. And each of those teams worked with each of the sites in preparing their responses to the survey tool. And we were really looking for two things, as Bill said: one, best management practices and two, areas for improvement. So we really wanted to see both. What's been working well? What has a particular site done that is working so well that we should share it with all the other sites or even include it in the guidance or even include it as a requirement in an update to DOE Order 435.1? And second, what things haven't worked so well? What things did we not get right or do we need to make some adjustments to as an area of improvement?

So the complex-wide review was completed this year. It has been posted on the EM Website. We have some CDs of it in the back of the room, but it is available electronically on the website.

One of the key things here as Bill identified, the best management practices and areas of improvement, is the total overall response that we got. We received responses from every site and from every program office within DOE that manages radioactive waste.

Some of the key findings that he had, I'm

just going to cover a few of them here and then we'll let the core team leads cover for their respective chapters. First of all, DOE Order 435.1 has been successful. We've made significant progress in radioactive waste management. Bill highlighted some ofthe progress that we've made.

Second, the LFRG, the Low-Level Waste Disposal Facility Federal Review Group, has improved the consistency of our performance assessments and composite analyses and the reviews of those.

Third, there are new requirements out there that did not exist when DOE Order 435.1 was written that need to be incorporated into an updated DOE Order 435.1. One of the obvious examples is the 3116 legislation.

Fourth, there is still a need to identify paths to disposal for some wastes that currently do not have a path to disposal. And the best example is non-defense TRU.

Five, there is an opportunity for us to clarify definitions. Some of the definitions are things that are embedded in other definitions which have never been explained, such as the Nuclear Waste Policy Act definition of high-level waste. What are fission products in sufficient concentrations? What do

we mean when we talk about classified material?

Sixth, there is an opportunity through the update to DOE Order 435.1 to help our program offices and our site managers better understand their responsibilities and implement their responsibilities with respect to radioactive waste management and especially in the oversight area.

Seventh, improved implementation of other DOE Orders or outside regulations. We received a number of comments that there's still confusion of how DOE Order 435.1 and CERCLA work together or of how DOE Order 435.1 and RCRA work together.

And finally, we received many comments from our sites about our exemption process for use of offsite non-DOE commercial disposal facilities.

So these were the key findings that we got out of the complex-wide review and that we're incorporating into our effort to update DOE Order 435.1.

I want to introduce each of our core team leads and they're going to address their portions of the update effort, but I also want to give a brief overview of what DOE Order 435.1 does in case you are not completely familiar with it.

As I said, there are four chapters, one

for general requirements, and then one for each of the waste types. Each of those chapters provides the basic management requirements and that goes from generation through characterization, certification, treatment, storage, and disposal.

The thing that we often are most concerned about when we talk about these requirements is disposal, but I want to make sure that everybody understands that there are significant portions of each of these chapters that address all of the upstream activities.

Now, with respect to disposal, in the high-level waste chapter, disposal of course is dictated by the Nuclear Waste Policy Act. There's not much that we can say there other than what is legislated to us. And as we know now, things have changed a little bit with respect to geologic repository. Are we going to be able to create the new answer for disposal in the high-level waste chapter of DOE Order 435.1? No. No not even going to try. It's not our role.

Transuranic waste, the WIPP Land Withdrawal Act provides us with the definition and provides us with the rules of the road for disposal of transuranic waste at WIPP. Is there much other that

we can say in the transuranic waste chapter about that? No, not really. We have a lot of good information about how to package it and how to maintain it and how to get it there, but when we're given an answer there's not much we can say that changes that legislated answer.

In low-level waste we don't have a legislated answer, so in the low-level waste chapter we've created a process that implements our Atomic Energy Act authority with respect to disposal and is based on preparing a site-specific performance assessment at the disposal facility, which helps us identify site specific waste acceptance criteria that allow us to identify what can be disposed in what concentrations and quantities at any given site.

Once we've prepared that performance assessment, it becomes the basis for our disposal authorization statement, which we will refer to as our equivalent of a license. But as we were talking about the safety case concept yesterday, the performance assessment is not the only answer; we also have a composite analysis, a monitoring plan, a preliminary closure plan, a maintenance plan, and then annual summaries. And those items collectively, those six pieces are what provide our authorization.

So we're going be talking about all of that today. There are definitely things that we can do and that we're planning to do in the high-level and transuranic waste chapters in terms of updating and improving our requirements. A lot of the changes are going to be in the low-level waste chapter, because that's where we have most of our flexibility authority without legislative answers. But we do have a lot of changes also in the general requirements chapter and we're going to try to cover all of those.

So to that end, I'd like to introduce Linda Suttora, who is our general requirements core team lead. And Linda works in the Office of Environmental Compliance at DOE Headquarters. And I'll let her tell you a little bit more about herself.

MS. SUTTORA: Okay. So I work for Bill Levitan in the Office of Environmental Compliance and I have about 20 years of experience on and off in the Rad waste management business. I have worked for DOE from 1991, and before that I was at EPA. And then I've done stints at the Nuclear Regulatory Commission and at NOAA, where I was trying to bring my marine biology background to back into life, but that didn't work for me. I got too bored, I needed the excitement of DOE and wondering where the waste was going to go.

So I'm head of the general requirements chapter. I started working -- I actually helped write the original DOE Order 435.1, and in fact, I was even on some previous attempts at redoing 5820.2A. It never happened. So I've got a little bit of history with the project.

And on the general requirements -- and I don't know what slides made it in here. Okay.

So in this general requirements chapter you'll see the most significant difference from the previous version of DOE Order 435.1 -- or the current version; I keep calling it the previous version, but it's still in effect. The current version of DOE Order 435.1. The main thing that we've done is removed stuff that's repetitive.

So if something -- one of the things that we'll talk about is the new Order on Orders. There's a new Order at DOE called DOE 251.1C, which tells us how to write Orders. And that sounds kind of silly, but in effect it makes things more consistent. If you are a reader of Orders and you have to comply, you know exactly what section is going to be where and you can flip to that instead of the current way where everything is random and you don't know what's going on, so you flip open an Order and have to read the

whole thing. So in essence it's a very nice feature, to have an Order on Orders.

But one of the things it required was some streamlining, so in the new Order you will not see a whole long laundry list of 20 items of other requirements that also apply to this Order with the understanding that we'll probably put it in guidance so you don't have to go reinvent and try to remember that RCRA or CERCLA or whatever else, or ALARA or pollution prevention and waste minimization and those kinds of things. There won't be a mention of those in the Order itself, so you won't have to, you know, plow through that until you get to get to the actual requirements.

Another change as required under 251.1C is that we at the end of the Order have what we call a contractor requirement document and that will be theoretically, the intent. There haven't been a whole lot of new Orders through, so we don't know how it's going to work yet. The intent is that that contractor requirement section will get pulled out of the Order and put into every new contract. And so things will not get forgotten or, you know, misrepresented in different contracts, that they will all say the same thing for the same kind of work. So that hopefully

will work out well. Again, we haven't seen it too often because we're one of the first new Orders out the door.

And as Marty already mentioned, we'll be throwing some new things that hadn't existed before. Such as the Office of Legacy Management didn't exist when the current Order was written in '99, so we have to include references to them and how we're going to do things like long-term stewardship. And also, the National Defense Authorization Act of 2005, Section 3116 is new and we have to include that.

And we also are -- as I said, we're consolidating. Where something is mentioned -- like corrective actions is mentioned in general requirements and then each of the waste type chapters. We are pulling it out of the waste type chapters and putting it into only general requirements, saying this is the standard. If you have to do corrective actions, you're going to have to change things in this change control section. So we're avoiding duplication.

So it's going to look very different than what you see right now. If you pulled up the Order right now, and I have it on my iPad, so if at a break anybody wants to see what the Order looks like right

now, you're not used to it, I can show that to you.

If you look at the Order right now, it's a big long laundry list of things, 20 different requirements, 20 different references to other requirements. It's going to look very different and at least that's the draft we're proposing. We want comment, obviously. Anything I say, it looks like this now, that doesn't mean that's what it's going to look like when it hits the world in the end.

So one thing that we recognized was while we had a whole laundry list of requirements, we didn't give each individual -- we gave them as individual items, not as a combined unit, this is how you plan for waste, this is how you plan for generation, this is how you generate, this is what you should do in order to treat, store, or dispose. We have them just as this big laundry list of items.

And so what I've done is -- and my team has done -- and let me tell you, I have a fabulous team of folks. We started out with, like, five, but because we did a lot of consolidation and coordination across the other waste site chapters, I just kept stealing more and more people from the other waste type groups. So because we've changed so significantly, my group has grown from I think five to

fifteen or so.

So what we did was make it much more of a strategic planning effort. The individual waste type stuff has the individual things that you have to do for that specific waste type, but general requirements is more administrative, it's more strategic planning, it's more "this is how you plan a program." So in the current Order you will see a requirement for a complex-wide program plan. But that has come in and out of favor and come in and out of the way things are done, and it's kind of a sub requirement under a sub heading. Well, it's going to be a major heading now. The complex-wide -- we have a complex-wide plan for each waste type.

Right now we have a national TRU program, it's working very well. People know what their allowable quantities for disposal, how they're going to dispose. It's worked as a very coordinated cohesive group. And it was mentioned in the complex-wide review as why can't we have a low-level waste national program? Why can't we have a high-level waste national program so we truly understand how to coordinate across the sites? And so we are taking that to heart and we have written in a section requiring the corporate boards, which are not a

required entity but have been working very well, that the corporate boards lead a program for the low-level waste and the high-level waste, very much like the transuranic waste program right now.

We also -- one thing that is new -- I believe it's new. Things are written so difficult for me to read in the current Order that it's not clear. When this current Order was written, EM owned all the waste. Now, over time, it's been evolved where the Office of Nuclear Energy owns their waste, NNSA owns their waste. And we want to make sure that all those folks understand how much that means, because it's not clear to some other folks, and mentioned in the complex-wide review, that they fully understand the implications of owning that waste. So we'd like their office -- we call them PSOs, Program Secretarial Offices. That's EM, NE, NNSA, Science. That they have a program office plan where they identify how they're going to coordinate their waste movement from pre-generation to generation and treatment and then usually dumping it on EM for disposal. So there's that understanding of what that means to own radioactive waste.

And also there is in the current Order, a requirement for a site-wide program plan. Well,

actually it doesn't say plan, it just says program, I believe. And we're requiring that to be a much more coordinated plan. And the reason for that, again, changes since 1999 when the current Order was issued is it that back then each major -- particularly the major sites had a single M&O (or management and operating) contractor. And so how they coordinated their waste streams, the generation, treatment, disposal, was done all under the same umbrella organization, same contractor. However, now at some of the big sites, most of the big sites, we have multiple contractors. And we want to make sure the waste being generated by one contractor has been planned for, if it's being disposed by a different contractor, and how they coordinate across the board, and when they generate waste how they store it. Maybe they should be consolidating storage of the same type waste in one area. They may not be. They may not be required to be. And so we want to make sure that that is coordinated well. So the site-wide management program is actually a much bigger deal now in the draft Order than it is in the current Order.

And, again, all of these strategic plans -- we call it a graded approach where if you're a small science organization with one little lab, your site-

wide RAD waste management program is not going to look like Hanford's site or, you know, Savannah River's site-wide waste management plan. It might be a page. It might be this guy talked to this guy and he makes sure everything is signed off; we know what's happening. And, you know, they reference, we have a Rad waste management basis. So everything is done in a graded approach, we don't expect the documents to fill bookcases. We expect documents to reference the appropriate other documents that will make sure that everything is coordinated and we have control over our waste fully.

The other -- so there is a few areas where we have insisted that certain organizations -- we don't identify organizations to do oversight for auditing purposes, but we do require audits to be done and to be verified on a regular basis, particularly for using off-site treatment or disposal facilities.

One other modification to improve the Order is we have recognized that where there's any sort of change control requirements, that change control be identified. How are they going to do change control? How are they going to modify who is in charge of what? That is to be documented and updated on a regular basis.

And finally, one of the big -- one of the major comments on the complex-wide review is that we really press for this one-touch philosophy, meaning you don't keep rehandling and rehandling waste if you don't need to. You should characterize it up front; keep it where it's going to be until it's ready for disposal. Don't keep moving it around, don't keep reopening cans. In other words, it goes back to the strategic planning concept, make sure you know what you're going to do, when you're going to do it, and then you will only touch it once.

So the third major part of the strategic planning effort is that we have a requirement for a radioactive waste management basis in the current Order. What I have come up with, with my team is a much more strengthened radioactive waste management basis. In some places the radioactive waste management basis has been very, very -- considered unimportant and it is a very small document that doesn't really say anything. And what we want to do is make sure that the radioactive waste management basis, which is very much like a safety basis document, has all the information for that facility or major operations or major activity. And within the current Order, there's a laundry list of 20 things you should

do. Have a WAC, a waste acceptance criteria. You have a, you know, a couple of generator requirements, you have some closure requirements, it talks about defense and depth; it's just one of the laundry list. What we've done consolidated, basically the laundry list of requirements and organized it. It's just reorganization so that they fit into a slot.

And so that when you have a facility or operations -- for example, let's say you have the Defense Waste Processing Facility and they are processing -- that facility processes the high-level waste from the tanks and turns it into glass logs. The Rad Waste Management Basis will anticipate the volume of waste it's going to deal with on a regular basis, it will anticipate and describe which organization is responsible for what part of the transfer of the waste from one place to the other, what manager is responsible for signing off on what, what the safety basis is, all other documents that have to do with how that waste is going to be transferred from one place to the other, how the glass logs are transferred to the storage facility and how the facility is going to be maintained and stored. And if you are go doing D&D and you're out in the middle of the field, you may not be able to anticipate

everything, but at least there is a process developed and identified that identifies who's responsible for making decisions, how are decisions signed off on.

So one of the features that is not in the current Order is what I call the pre-generation of waste. When you know you're going to be generating a waste streamyou know about that way before you generate that waste stream. It's an operational -- it's what you do when you operate a facility; you're going to generate a waste stream. If you are a science lab and you're doing an experiment you know you're going to generate a waste stream from that.

Before you generate the waste you have to anticipate that and plan for it. And if you're going to generate a waste -- if you know you're going to generate a waste that has no path for disposal under the current treatment and disposal system we have now, you must inform headquarters, you must have it signed off and approved to generate that waste stream by the field element manager and you have to notify headquarters for your own program, if you're in science, let's say you're a science Program Secretary Officer, and EM because we keep the data management system.

So it goes back, before you start doing

anything, you anticipate what you're going to do. You anticipate how that waste will be stored, you anticipate how it will be treated, and you anticipate how it will be disposed. It comes back to that one-touch philosophy; don't do anything unless you know anticipate what you're doing.

And so there you go; I talked about the waste with no path forward to disposal.

And when you generate the waste, you're not just going to randomly characterize it, you're going to characterize it with intent. The intent is how it will be treated, how it will be stored, how it will be disposed. It all goes back to strategic planning. I've been reading a book by the Dalai Lama and everything is mindfulness and being enlightened and you have to just plan and do nothing random, no surprises.

And the other thing under generation is we have this -- we've spent a lot of time in the past week talking about blending and we have a section -- again, I keep saying we have a section. All this means is draft, beat me up, give me comments, I want to know every idea that you all have about making changes to this.

So the draft says plans for blending is an

appropriate behavior in waste management. If you have a waste that is similar to something else, there is no reason that you have to segregate it. If you have wastes that are dissimilar but it's appropriate to put them together in the same container and it results in the blending of the low-level and another either higher activity low-level or of a transuranic or something else, if it's going to impact workers' safety or if you have to segregate it and it impacts worker safety -- and I know several folks over the course of the past week have shown demonstrations and had videos of things where we cut pieces up and segregated waste just because they were different kinds, but it could easily impact worker safety. You don't separate if it's going to impact -- particularly if it's going to impact worker safety, but also if it improves your ability to dispose of the waste there's no reason why you have to segregate. Just consolidate it, track it, monitor it, and keep the waste moving towards disposal.

Also in the current Order there's a data management section. We have maintained the data management. That is important to everybody involved that we trackour waste streams upon generation and what's going to disposal.

And we did -- on the complex wide review, you did ask us to improve on how we deal with classified materials. And we've had folks from the NNSA, which is, you know, the folks that deal with the classified materials, they've rewritten some sections in there to improve that.

Treatment and storage. Nothing special there.

Disposal. What we've added in the new draft section is you characterize for treatment and storage. You classify, you do your final classification, things could have changed. Separate waste streams could have been consolidated to improve, management, whatever the case may be, you don't do your final classification until it's time for disposal. So that's a new section.

And we've also, we were asked -- because we have an FBI lab at the Savannah River site and some other work that we do for others, we've added some words to recognize that it's not always our waste that we're taking care of.

And also that Section 3116 for the tank closures for the States of South Carolina and Idaho, we've added that in there.

And finally, one thing that we didn't have

before was -- and it's a real mouthful, Unreviewed Waste Management Question Evaluation. And what it is, is a way to track changes in business, some of them anticipated, some of them unanticipated.

It started out there's several places where drums were mislabeled or -- and actually in one case the drum was labeled right, but there were two labels on the drum and somebody used the wrong label. Actually, they put a label and then they put another label on top of it, but the one on top of it actually became less readable over time. Because these are drums that are stored over long, long periods of time and things happen. The drum underneath was read as the one that the waste -- what was in that drum was anticipated as lower level waste. So that things were put into a disposal trench that were a higher activity than they should have put in; a higher activity than met the WAC.

The site said gee, we want to figure out whether we need to dig this out, because it was discovered several months later when somebody was going through all the tracking. And they were able to identify that the waste going into that trench was really higher than it should have gone in based on their WAC. So they went back and said if we have to

dig it out, we're going to have to uncover the trench, we're going to have to send people down there, pull out the drum or a couple of drums, and that's a worker safety issue. But at the other side, is it necessary to pull that out to meet the performance assessment?

So we did this thing called an unreviewed disposal question evaluation, developed a process to review whether that drum needed to be pulled out because you tracked against the performance assessment. So when you did the analysis against the performance assessment, it was identified that it really wasn't -- the overall waste going into that trench did not exceed the performance assessment.

So the site notified the state regulators, they told them all about what -- you know, that was for -- because it will be closed under CERCLA, so it would be in the EPA. So they notified the state and Federal regulators, they performed this evaluation and it was worked through that it was less dangerous to leave it in place and safe to leave it where it was. So we looked at that and thought well, are there other times in the operations of these huge industrial complex facilities that we might want to do another kind of evaluation?

And another event came up at Savannah

River Site. In their 3116 Waste Determination it says they will have the Salt Waste Processing Facility on line by 2011 and we'll be using that facility to separate the waste and, you know, decontaminate the low activity waste before it goes off to the Saltstone Disposal Facility. And the facility said, we aren't going to have that. That was a little bit delayed, there was some problems with construction, it's not online by 2011 and won't be on line for a couple more years. However, we've already signed up to a regulatory document that says we're going to have it online by 2011.

Well, the Savannah River Site is using this other treatment facility, which is actually just a scaled down Salt Waste Processing Facility. It has excellent decontamination factor, they are separating the waste in a beautiful manner, they are absolutely shocked how, actually in fact, how well it was working. So they thought well, it's safe, it's not changing anything, the salt waste that is going to the Saltstone Disposal Facility has very little -- there's no high Rad and the decontamination factors are coming in very high, but if we continue operating the way we are we're not in compliance, because we have this document that says we'll be using the Salt Waste

Processing Facility.

So an evaluation has been done. They've evaluated, they're not changing anything serious, but they're actually going on to -- they are doing the same thing they would be doing, it's just not a Salt Waste Processing Facility.

So therefore when you have a change control like that, that needs to be documented. So we're adding the documentation ability for that kind of happening.

Let's see. Off-site disposal. Oh, there's an exemption right now required for using an off-site disposal facility. We're removing that exemption. You don't have to go through an exemption, you still have to go through a cost-benefit analysis, and you still need -- we have in the responsibility for notifying the state, conducting an audit for the off-site facility to make sure they are in compliance. And also like I said, Legacy Management has now been added to the mix. So there was a request that we make sure that all the appropriate documents were passed on to the Legacy Management office when they take over a facility such as, you know, making sure appropriate institutional controls, monitoring plans. And also we have assumptions in the PAs and CAs and if we are

going to drop a facility over to Legacy Management, we need to make sure that they understand the assumptions that were made in the PAs and CAs and carry those through; that we don't lose those.

Anything else? That's it? That's all I have.

MR. LETOURNEAU: Thank you, Linda.

As you can see, general requirements chapter has a lot of information in it, a lot of stuff. We will hold questions until we get through the rest of the presentations and then we'll get all the Core team leads up here.

The high-level waste Core team lead is Joel Case from the Idaho site. Joel was not able to be here, he had another matter that he needed to attend to, but I can cover that.

What I'd like to point out is that when we looked at the results from the complex-wide review, there were several key things that came to the surface with respect to the high-level waste chapter. First and foremost was the WIR, the Waste Incidental to Reprocessing process, and its relationship to the 3116 legislation and the need to reflect that in the update.

There was also discussion about the need

to clarify citation procedures that would allow equipment that was used in tank farms that had come into contact with high-level waste to be routinely decontaminated and shown to be able to be disposed, even if it had some residual contamination on it.

Recognizing the success of our interactions with regulators and stakeholders was identified as a best management practice; something that will probably be reflected in the guidance documents. And then improving the definitions of all of the waste types so that they're not based on pedigree.

What we've done here is we've not tried to change the Nuclear Waste Policy Act definition of high-level waste. We recognize that Congress created that definition and we cannot change it, but there are parts of that definition that have never been parsed out or adequately defined. What are sufficient concentrations of fission products? Things like that. So we're looking at how to explain the words that are in that definition and how to understand them and provide a better way for our sites to understand the high-level waste definition.

So the high-level waste core team has been reviewing the existing manual requirements to

determine what could be eliminated or consolidated into the general requirements chapter. I know they have given a number of requirements over to Linda to include in general requirements.

They took each of the letter sections out of the chapter and assigned those to subject matter experts and they've been reviewing their proposed changes amongst their group. They have about 15 people in their core team and they've been recommending those changes up to me for review. So we're looking at those right now.

As Linda said, everything right now is a proposed change. But one of the things that we do intend to do is that when we have vetted this adequately with all of our managers and with other folks, we are going to put the whole thing out for public comment just as we did the first time. We'll have a proposed draft, we'll publish a notice in the Federal Register and we will prepare a comment response document for any of the comments that we receive.

Some of the specific changes. As indicated, there are a number of things going to general requirements. As I said, we are going to look at how to sub define, if you will, some of the terms

that are in the definition of high-level waste, including the 3116 process, recognizing that the WIR (or waste incidental to reprocessing) process and the 3116 process are essentially the same, and trying to reflect that in the requirements. Updates to the WIR citation process, as I mentioned.

And then we've got the issue of the fact that the Office of Civilian Radioactive Waste Management does not exist, but we still have high-level waste that's being created, we still have waste that's being put into a glass form. And right now we're still following the QA requirements document. So we're trying to understand what we should say there. We're obviously not going to be solving the high-level waste disposal problem in this chapter, so we're just trying to figure out what we should say that makes sense for continued operations at this time.

And that is pretty much it for the high-level waste chapter. Again, if there are specific questions, we'll address those.

MR. Stroble from the Carlsbad field office is our Core team leader for the transuranic radioactive waste (TRU). He's moving his way up here. I'll let him tell you a little bit about himself.

MR. STROBLE: Thank you.

I'm J.r. Stroble. I'm the director of the Office of the National TRU Program. I'm in the DOE Carlsbad Field Office. I've been associated with WIPP for over 20 years. I was a contractor for about 17, I've been with DOE for about the last three. I recently have been selected as the director of the National TRU Program, although I've been involved in everything associated with it for over ten years.

For the TRU portion of this update, much of the complex-wide review inputs really were rolled up into a lot of what you've already heard in the general section. So what I'm going to cover is really just the specifics to the TRU section that are not already captured in the general section.

From complex-wide review inputs, kind of the highlights were to provide sufficient information for the generation and disposal of classified TRU waste. That is an issue primarily because WIPP does not have a system for managing classified waste; and so if you have a transuranic waste stream and you want to dispose of it at WIPP, which is the only place to dispose of it, then you have to find a way to do that without keeping the classification on the waste. It's a real challenge. We're working with sites every day

to overcome that challenge. And although this Order isn't going to necessarily solve that problem, we're hoping it will offer some guidance on how to approach that issue.

Next, we have been the addressing the impacts of work for others. Linda mentioned that. Transuranic waste by definition in the WIPP Land Withdrawal Act, it has to be a defense-related activity that generated it. We can't change that legislation with this Order, but we can clarify what the possible options, if any, on nondefense TRU waste are. There are no clear paths forward for those right now, but there are cases where we can work with sites individually and maybe find an alternative. It's just going to have to be dealt with on a case-by-case basis.

One of the key things that was in input was to provide instructions, very specific instructions, on packaging waste into a contact-handled or a remote-handled TRU waste form so that we can incorporate that philosophy, that one-touch philosophy, from the beginning. The concept is if you properly plan before your waste is generated, then ideally you won't have to keep touching the waste. You can put it in package form one time, it can make

it all the way through characterization, treatment, storage, and disposal and never have to be opened again. Of course that's ideal, it's not going to work in every case. Transuranic waste is a very challenging type of waste to manage. Everyone who has dealt with it will probably speculate that once through won't work. But I'll challenge you that it's always a good way to start the plan. And if you could minimize the number of times that it has to be touched, that's really the goal.

And then we needed to address the needs for dealing with problem waste streams. Problem waste streams like the ones listed as examples are at most big sites, some small sites and they have to be dealt with on a case-by-case basis too. So I don't know that this Order update is necessarily going to address those directly, but what we had hoped to do is to put a process in place to allow those to be managed on a case-by-case basis.

Here's some more inputs from the complex-wide review. We've already mentioned the once through or one-touch philosophy.

The first bullet there is on records. And the concept there is to keep good records and make that part of your plan. And it's not just direct

records and measurements made on the waste stream, but it's everything associated with the processes that went into generating that waste, because there is this process out there called acceptable knowledge that documents everything you might ever have known about how that waste came about. And it's important that those records are maintained all the way through the cycle from beginning to end. And carrying those over from the point of generation to any treatment that occurs, to the storage areas to the disposal area is going to be key in making it past each one of those steps. Because in just the storage area there could be four or five contractors at two or three different sites that have to store that waste for a variety of reasons. Those records need to come with that waste and be whole all the way through the process.

Little things like defining minimum detection limits for non-destructive assays -- not really little, they are challenging, but the purpose there is so when you get to a point of certifying the waste stream as to whether or not it's transuranic or low-level, that's key. And the rules for doing that aren't necessarily constant from the TRU waste area to the low-level area and vice versa. So we're hoping to make those more consistent.

And then last on the list is to clarify treatment requirements in the Order. And although there aren't a lot of specific treatment requirements for transuranic waste, we hope to find a process by which you define what you're going to do and how you're going to go about doing it and getting the approvals to do it. And it's really more of a process section than anything.

The general approach was to take all those inputs, look at the manual, the guide, the technical basis, assign team members different parts of that chapter. We proposed changes to the steering panel; we've drafted those revisions. All of those revisions have been reviewed at least once by the FPD and it is near final stage, but we still need input from this process to make sure it's heading in the right direction.

Some specifics are moving several items to the general requirements -- you've already heard about this from Linda; I won't go over them again -- eliminating a couple of requirements. Not really the elimination, but really the rollup into the general requirements for things like corrective actions and monitoring. And here are some examples of items that are specific to the TRU chapter that will be

associated with this update.

As I mentioned the remote-handled and contact-handled TRU waste packaging instructions will be referenced for use in the update. Right now those instructions exist in draft form and they are out for review in the form of a notice. Those instructions are very specific. They are not only specific to disposal at WIPP, but they're specific to any interim process that you might incur before disposal at WIPP, such as transfer to a consolidation site like Idaho for treatment like compacting. Or if a contract entity like the Central Characterization Project (CCP) comes to your site to take on your TRU waste effort, they can pick up what you've already processed under these instructions and take it from there.

If you are at a site that already has the assistance of CCP, then you don't necessarily have to follow these instructions as long as you're following their guidance. And let me clarify everything there, CCP may be on site helping a specific program, but if there are other generator sites on that site that aren't in that program, you still have to follow the instructions so that when it's transferred over to that program it's a smooth transfer.

Again, we touched on the once through

philosophy. We touched on managing specific wastes in the world of classified waste. Let me just mention one other thing there. Classified waste typically in the TRU waste world is a challenge not only for information associated with it, the processes that generated the waste, but sometimes the waste itself; the physical form of it.

And so the recommendations are going to be, if it's a physical form issue, try your best to plan a process from the beginning before you generate the waste that would put that waste form in a state that does not have to remain classified. That's all good for a plan but it may not work out, so what do you do if you get to that point and it's still classified? We're going to have to work those on a case-by-case basis. We're doing that today. It's not a major roadblock, it is workable. But every case is unique and basically the message here is try your best to plan to take that out of the classified waste world by the time it's, you know, in waste stream form. Oftentimes you can't do that as long as it's material. But there will be a point where you can transfer it over into waste form and hopefully solve that problem somewhere along the way before you get to a point where it's ready to ship and it can't go because it's

still classified. And then remove erroneous examples from the Manual. There were a lot of examples in the TRU waste section that really no longer apply.

That's all that I had.

MR. LETOURNEAU: Okay. Our final presentation is from Frank DiSanza. He is the Core team lead for the low-level waste chapter and I'll let him introduce himself.

MR. DISANZA: Thank you, Marty.

Since these proceedings are being broadcast on the internet, I first want to say hi to my grandchildren Brianna and Justine. Hi.

The low-level waste core team got input from the 29 sites that manage low-level waste. As such, these 29 sites did provide us over 100 items for consideration as far as best practices or changes that we needed to look at. I don't have time to go through all of those, so I'm going to give you just a peek at what's in there and I invite you to get a copy of the complex-wide review document and go through those items yourself. And I hope that through the presentation you'll see where the Core team was going as far as making certain changes.

A little bit, maybe already discussed this, include language on the appropriate use of concentration averaging; kind of a code word for blending. Include the use of probabilistic modeling and analysis and provide guidance for the conduct and interpretation of PA sensitivity and uncertainty analysis. This is new. Something that the technicians that prepare the PAs, the probabilistic PAs, wanted some additional guidance, and so we're looking forward to providing that. And address CERCLA and Federal Facility Act closures as a possible alternative.

Clarify the exemption process. Marty already talked about that. That was the number one input that we received from across the complex. Well, maybe I've got to clarify the expectations regarding the use of liners for disposal facilities and we hope to address that adequately.

Include language related to the use of the unreviewed disposal question evaluation procedures. Linda talked about the unreviewed waste management question in the disposal section in chapter four. We will discuss the unreviewed disposal question evaluation.

General approach very similar to what J.R.

had up on the screen. Probably the most significant item, if you go down to the bottom of the bullets there, is that we do anticipate preparing a low-level waste technical standard. This technical standard will include all of the various documents that have been produced to -- or prepared to provide guidance to such groups as the groups that go out and review the performance assessments throughout the complex and those, what we are referring to as rogue guidance, will now be documented and in an official DOE document.

Specific changes: a little bit of a discussion already happened regarding the use of concentration averaging was passed on to the general requirements group along with the exemption process. In Chapter IV for low-level waste we will also have -- we'll have to determine whether or not this is double accounting as far as concentration averaging or consolidation. But we'd like to say a few words in the low-level waste chapter.

Other examples of the new requirements for analysis performed probabilistically. The peak of the mean or the medium of the result distribution, whichever is higher, shall be used to assess compliance with the performance objective. That is

how you bring in probabilistic modeling into the preparation of your PA.

The PA shall include a sensitivity uncertainty analysis which shall include an assessment of peak impact with a period of 10,000 years. If the peak impact is not realized within 10,000 years, a qualitative assessment shall be performed from 10,000 years to the peak. That basically answers a lot of questions that we get when we present this information to stakeholders.

Another example is approval of the DAS is based on reviews of certain documents and approval of these documents. That's where the approval for the sites to have an unreviewed disposal question evaluation process will -- you'll be able to find that.

Related to the issue where we need to clarify the expectation on liners, there's a new section on system evaluation for new facilities where the sites will have to evaluate and provide a holistic evaluation of natural and engineered barriers and their effectiveness as a unit.

That concludes our peek at what's going to be new in the low-level waste section. And as Marty says, I'm available to answer questions.

MR. LETOURNEAU: We are actually pretty close to being on schedule here. I want to go back to one slide that I went beyond and that is our schedule slide.

MR. LEVITAN: Good morning everybody, are we still awake? Okay. We're going to take a break shortly.

Marty made the point and I just want to make sure that you all there and you out there across the country understand that if you look at where we are now in yellow, the public workshop. We threw a lot of information at you and I know a lot of you were taking notes, right? But I just want to emphasize that while it may sound like we've done a lot of work, and we have, this won't be the only opportunity for feedback.

As Marty mentioned, if you look, we're here in February through June and the -- I guess that's gray -- those gray boxes are what we're doing. Linda mentioned about the 251.1C compliance package. That means that we're going to get a form that the Orders on Orders says it should look like.

But what I really want you to look at is that October 2011 to August 2012 time frame. We obviously -- internally the DRB is our Directives

Review Board, but notice, particularly public. As Marty mentioned, and I want to make sure everybody understands, we're going to notice this, it's going to be out for public comment. So you'll all have an opportunity to then comment on the product as it resides at that time. We'll incorporate those comments and then we'll go through the formal review process and the Directives Review Board.

So I just wanted to let everybody know there will be plenty of opportunities. And then ultimately once the new Order goes into effect, we'll be doing a lot of outreach in terms of explaining what the Order requirements are.

With that I guess we'll take a break. As I mentioned in my keynote, I look really forward to the next hour and a quarter after the break -- or I don't know how long the break is; you can take care of that, Chip. But to really give us some good feedback.

Thank you very much.

MR. CAMERON: Okay. Thank you.

Marty, any final words from you before we break?

MR. LETOURNEAU: Just one other thought, and it's related to this concept of the schedule and the fact that we are planning on putting this out for

public comment. One of the things that we were challenged with the first time, when we created DOE Order 435.1 and our general counsel is challenging us with again is, is there any, or all of this directive, that is suitable for or should be promulgated as DOE regulation? And that's a question that we'll be asking ourselves and a question that we'll be addressing with them probably about the time that we are putting everything together for the Directives Review System and putting things out for public comment. So there's still a lot of discussion yet to go on. I mean, nothing is set in stone. This really is very much a drafting process that we're in right now.

To that end, one of the things that we've talked about is the possibility of creating a section just on waste classification. And including in that section the waste incidental for reprocessing evaluation process, the 3116 process, concentration averaging, the definitions of the waste; and that that would possibly be a suitable piece that we might look to promulgating. So just another thing to keep in the back of your mind.

MR. CAMERON: And does that really say rogue guides?

MR. LETOURNEAU: Yeah, it does say rogue guides.

MR. CAMERON: Okay. I just wanted to make sure.

MR. LETOURNEAU: Rogue guides is actually a term that the directive system used to identify guidance documents that were outside of the system.

So if somebody put together a guidance that affects more than one program but they didn't put it through the directive system, then that would be considered a rogue guide.

MR. CAMERON: Great, thank you. Thank you, Marty, and thank all of the DOE staff for the presentations.

And we're going to take a break now. I have 10:15 on my watch, why don't we come back in 20 minutes at 25 minutes to 11:00.

And I'd like to talk to the people on the phones right now if I could so that I can see if I can get the names of everybody on the phones for purposes of our discussion period. Thank you.

(Recess)

MR. CAMERON: Okay. Thank you all for your patience, and the coffee will be here.

But we have everybody up here and I don't

want to try to structure this too much, but we did start out with Bill. Bill Levitan gave us some keynote ideas and he talked about risk-performing and performance-based. Marty gave us overview. And then Linda talked about strategic planning general requirements. And thank you for bringing the Dalai Lama and the idea of mindfulness in, which is always great. And then we went through high-level waste, TRU, and then low-level waste.

I suppose I should ask first does anybody have any comments or questions for Bill Levitan that we should start out with? And I just want to remind the people on the phones, we'll be going to you. We're going to have a discussion here starting in Phoenix, then we're going go to phones, then we'll come back here to Phoenix.

Anybody have anything for Bill Levitan at this point?

Okay. We're going to go right over here and just please introduce yourself to us.

MS. LARSON: I do have a question for Bill. I'm Pam Larson from the Hanford communities.

So Bill, in your opening remarks this morning, you talked about a radioactive material is a radioactive material and then all these regulations

kind of swarm around and help us figure out what to do with it. And your example is technetium.

So from the Hanford site we sort of feel like TRU is TRU and whether it was generated prior to 1970 or after -- or 1980 -- doesn't really make any difference to us. But it doesn't look like we're addressing TRU that was generated prior to the definition. So does that ever get caught up in the Department's philosophy? Because the containers aren't very valid at this point in time that have been buried all those years.

MR. CAMERON: Okay. Thanks, Pam.

MR. LEVITAN: You're referring -- yes, it has. And Christine, if you want to add anything as well.

MS. GELLES: No, you're good.

MR. LEVITAN: Yes, it has. As you know, there have been many studies performed by outside organizations regarding the amount of -- for those of you who can't see me, I'm doing quotes -- the amount of TRU or as we say pre-'70 TRU. And so we are well aware of that. And as you're aware at Hanford specifically, we plan on dealing with that waste through the CERCLA process. And the regulatory structure is the regulatory structure and we follow

those regulations.

MS. GELLES: I want to build upon something you said. And Marty, please correct this if you think I'm going too far. But my view on this -- and I think your question is a good one and I'm not surprised that you brought it up.

But because pre-1970 TRU at this point is being discussed as a potential future of remediation decision through the CERCLA process, until such time that the decision is made and the remediation undertaken and those transuranic contaminated soils are actually exhumed and packaged, they don't exist as a waste container that needs to be managed and addressed through our radioactive waste management Order.

So by and large our Order is guiding what we do with wastes as they are generated or as they are in inventory today requiring treatment, transport, and disposal, not previously disposed wastes that predate the enactment of our Order.

MR. CAMERON: And Christine, could you just introduce yourself for the transcript?

MS. GELLES: Yes. Christine Gelles, director of Disposal Operations in EM headquarters.

MR. CAMERON: Okay.

MR. LETOURNEAU: Yeah, that's correct. And what DOE Order 435.1 says right now, and we don't have any intention on changing, is that transuranic waste that was generated prior to 1970 that is in the ground now is a CERCLA activity. If as it is excavated, if that is the decision that is made, that will result in basically generation, a new generation. Any of that excavated waste will be considered new transuranic waste and will have to be managed as such, which would include packaging for certification and transportation to WIPP.

MR. CAMERON: Okay.

MR. LEVITAN: And if I could just emphasize, Marty made a good point. CERCLA has a prescribed process under the National Contingency Plan, 40 CFR 300 if anybody wants to look it up. And so we don't know what the remedy will be at this point. So we're talking about exhumation, but that's just one of many considerations that will be made as we work through the CERCLA process.

MR. CAMERON: Okay, Bill. And hold on to that microphone for a minute. We have one more question for you.

MR. LEVITAN: Well, one more thing that I would point out also is that where we have gone back

and looked at that pre '70 waste at other sites, whether it was for excavation or for characterization, we very often find that a fair amount of that waste, in fact, was not transuranic waste and, in fact, is low-level waste. And sometimes that does end up going to the low-level waste disposal facilities instead.

MR. CAMERON: Okay. And Ruth, please introduce yourself.

MS. WEINER: I'm Ruth Weiner. I work at Sandia (National Laboratories) but I'm here on my vacation, actually.

Bill, I have kind of a general question. When you clean up a site, do you look at the facilities that are on that site, any kind of facilities, and do any kind of cost benefit or risk benefit analysis to see whether the facility itself is worth cleaning up and preserving or not? Because a number of facilities are just gone, and they would still have uses; and I just wondered what kind of rationale goes into destroying a facility.

MR. CAMERON: And Bill, you're going to start and then, perhaps, we'll go to Marty or his colleagues. Go ahead.

MR. LEVITAN: Well, I'll give you the high level answer, which is at sites where EM, as Linda

said, is the PSO, obviously these sites have been given to us because they are excess to the Department's needs. And there are facilities, I can remember one in particular in Idaho, Test Area North, which is the big hot cell, and we probably spent several years determining, because it was a very unique facility, whether there was any use for it and there wasn't. The same thing with FFTF at Hanford. We went through a long process to determine whether there was any need for it and in the end we determined that there wasn't.

Having said that, last week or the week before, the Department announced an initiative called the Asset Revitalization Initiative. Some of you might have heard of it as energy parks, but it is really broader than that. And right now we're just geting it started and figure out -- get a charter so we understand where we want to go. But ultimately we need to involve the communities to determine what their vision of our facilities where we are no longer going to have a mission, what their vision is. And I know Pam would probably be -- is going to be, if not already, very active for the Hanford communities. So looking forward we have that process that we're going to be putting in place.

So that's from, if you will, a higher level policy perspective.

MR. CAMERON: Great, thank you, Bill. And let's see if Marty and his colleague haves things to add.

Is this easier for you to use?

MR. LETOURNEAU: I have nothing additional to add to that.

One thing that I would like to point out is that J.R. is going to have to leave us here shortly; he needs to get to the airport. So if anybody has any specific questions for Mr. Stroble. We probably ought to focus on those. But I can also assure you that any questions about transuranic waste, the transuranic waste chapter, WIPP, between Bill and Christine and myself, Mr. Stroble assures us that the three of us are almost as good as him.

MR. CAMERON: And the emphasis on the almost.

Questions for -- J.R., do you want to respond to the previous question?

Are there questions for Mr. Stroble at this point? Okay. Let's go over to Sue and get her question. And we need to be fair to the people on the phones, I may tune in with them right now, after this,

to see if they have questions for J.R.

Sue, please introduce yourself.

MS. GAWARECICI: Susan Gawarecici, executive director of the Oak Ridge Reservation Local Oversight Committee.

And I just had a question about the concept of packaging the TRU waste appropriately to minimize handing the first time. I was under the impression that a facility had to go through a fairly serious review about the CCR or some project that sounds like before it could treat and ship any waste off. So how -- I mean, how does it mesh? Is this is way of getting it to a -- say from a small generator to a larger facility for treatment, or how are you envisioning this?

MR. STROBLE: At Oak Ridge the Central Characterization Project or CCP is currently assisting the contractor at the TRU waste processing center. And because that's a program that's certified by our office, these specific instructions would not be required at Oak Ridge because an exception in the instructions it says that if you are working with or under a certified program, then you follow that process and not necessarily these instructions. They go hand in hand. It's the same requirements, it's

just under the guidance of the certified program.

So if under Oak Ridge there's a generator that's not currently working with TWPC, that's going to be generating a TRU waste stream, they would have to follow those instructions or they would have to go over to the TWPC and ask for guidance. Does that answer your question?

MR. CAMERON: Okay. And Susan, we need to get you on the transcript, so you're going to have to talk into the microphone, please.

MR. LETOURNEAU: Part of this also, Susan, is really the mindfulness aspect. We have spent a lot of time and money in worker dose unpackaging and sorting through drums that were not properly prepared the first time where somebody knew that they were generating the waste and said, well, okay, I'm going to put it over here, we'll get to it later. Well, when later comes we've lost a lot of knowledge about what went into that package and we end up having to rework it. And what we're trying to do is minimize that rework.

MS. GAWARECICI: I completely agree that's a worthy goal, but I was just wondering about the TRU waste with the characterization program. You know, is it going to have to be unpacked anywhere? But it

sounds like -- and I'm not entirely clear on how DOE Order 435.1 treats CERCLA waste if it does at all.

MR. CAMERON: Do you want to provide a clarification on that general question about the uncertainty about how DOE Order 435.1 treats what Susan called CERCLA waste, Marty?

MR. LETOURNEAU: Yeah, we have had that issue for a long time; it was an issue that came up when we were first writing DOE Order 435.1. And the question was how do we meet our AEA, Atomic Energy Act, obligations if the work is being done under CERCLA? And in our analysis what we determined was CERCLA was trying to accomplish the same thing that we were, which was to identify what the right course of action would be in a given situation and ensure that the waste from cleanup got managed correctly.

So what we determined was that DOE Order 435.1 did not necessarily have a need or an added value to what CERCLA was already doing. So DOE Order 435.1 recognizes CERCLA as meeting our AEA obligations.

The only question we have is if under CERCLA a new disposal facility is going to be created specifically for waste from that clean-up activity, then we do want to make sure that our performance

objectives and our low-level waste requirements are being met? And we do have a process in DOE Order 435.1 for a CERCLA cell to demonstrate how those performance objectives are being met?

MR. CAMERON: Okay. Thank you, Marty.

I'm going to test the phones now for the limited purpose of seeing if anybody has any questions or remarks for MR. on TRU before he has to leave.

Anybody on the phones have anything to say or ask J.R.?

MR. DUNNING: This is Dirk with Oregon, I'm not sure if my --

MR. CAMERON: Dirk, just let me interrupt you just so we can get your full name for the transcript.

MR. DUNNING: Dirk Dunning, State of Oregon.

MR. CAMERON: Great. Thank you, Dirk. Go ahead.

MR. DUNNING: I'm not sure that my question is for J.R., it may be for the headquarters folks. But it does involve J.R. because there's companion issues involved in when WIPP closes and when the last of the transuranic waste is planned to be exhumed at various sites, particularly at Hanford and

whether or not WIPP will remain open for the entire duration and be able to accept those wastes.

The companion question is more difficult. That ties to Pam's earlier question of whether or not DOE headquarters has a basic understanding and recognition of the national security implications of leaving several hundred nuclear weapons' equivalent of plutonium in the near surface.

MR. CAMERON: Okay. Two separate questions. Let's go to the first one. Do you need any clarification at all?

MR. STROBLE: No, I think that was clear.

MR. CAMERON: Okay.

MR. STROBLE: As far as the expected closure of WIPP or the lifespan of WIPP relative to cleanup of a site like Hanford, EM is definitely watching that and is definitely planning to minimize that issue and avoid that issue. But based on projections that you hear from many different sources there could be examples where WIPP might need to close before Hanford was all cleaned up. So it's a real issue. It's many years in the future.

I think when we do the next update to DOE Order 435.1 we're going to know a lot more about where we're at with that situation, it will be 11 years

closer to that situation.

I'm not trying to avoid answering the question today, but it is, you know, 2011. WIPP has many more years of operation left. There's plenty of capacity left and there could be a lot of things that could happen between now and that time, such as Congressional actions, such as consent orders, such as you name it. And so it's going to change a lot between now and then. But I can tell you that EM definitely is concerned about that and is trying to plan for the future so that that issue does not exist when WIPP is ready to close up.

MR. CAMERON: Okay. And Dirk, we're just going to hold on your second question for a second and Bill Levitan is going to try to address that one. I just want to make sure that there's no one else on the phone that has a specific question for J.R. before he has to leave.

Anybody else have a question for Mr. Stroble?

Okay. Great. Bill, do you want to talk to Dirk's second question?

MR. LEVITAN: Sure. Hi, Dirk.

As I mentioned, the area that you are referring to at Hanford of course we're going to be

looking at under CERCLA, and as I mentioned before under the National Contingency Plan process. I'm sure you're very familiar with that process. And we'll be doing the appropriate characterization, the appropriate analyses through the RI/FS process, looking at the CERCLA 9 criteria in the decision making. And of course CERCLA has a lot of public participation elements to it. And we'll work through that whole process, develop a proposed plan, which will be available to the public to discuss and then move on to the record of decision and implement that decision.

MR. CAMERON: And Dirk, before we're going to go -- and all of you on the phones -- we're going to go back to the audience here in Phoenix. But Dirk, do you want to do any quick follow-up for Bill on that answer?

MR. DUNNING: Yes, two parts.

The first is that in doing the CERCLA 9 criteria, to date there hasn't been any recognition of the problem of maintaining security for 10,000 plus years; physical, actual, manned armed security over a burial ground containing hundreds of nuclear weapons' worth of plutonium. That just isn't in the analysis anywhere so far.

The second is in the last decade and a half, there's been huge changes in the understanding of the chemistry of plutonium in the environment. In 2009 there was an actinide conference held at the Pacific Northwest National Lab at Hanford with actinide chemists from all over the world; and not one DOE staff was in attendance. I'm not sure and I wonder whether DOE at the national level has been following the changes in the understanding of actinide chemistry and how important that may be for its mobility in the environment so that the analyses that are done under the performance assessments, the composite analyses, the CERCLA requirements, and the RCRA requirements all take into account those hazards.

MR. CAMERON: Okay. Thank you, Dirk. And we're going to go to Bill and we'll see if any of the other DOE staff has anything to add or anybody in the audience wants to add on.

MR. LEVITAN: Dirk, I certainly appreciate -- I appreciate your comment. I think as we mentioned, I have to think of the various aspects.

I think the Environmental Protection Agency, which of course is the agency that implements the National Contingency Plan, is coming to the recognition now that it's been 31 years since CERCLA

was enacted and they're beginning to see, okay, we're at a point now where some of these facilities should theoretically be closed and done with. So I think they're coming to the realization too that there are longer term effects that they need to look at.

So we will of course -- and I meet with the Office of Federal Facilities Restoration and Reuse, which is the Federal facility office. And indeed we also had a -- EPA sponsored a joint DOE/DOD Federal facility cleanup dialogue with a lot of national stakeholders, local government, state governments, public interest groups. And this issue has very much come up in the guise of long-term stewardship as DOD and we finish our missions. So this will clearly be a topic of national interest and policy interest and EPA is clearly aware of it.

Regarding the new information from a scientific perspective from actinide behavior in the environment, we'll just have to incorporate that information as we move forward through the National Contingency Plan process.

MR. CAMERON: Marty, anything to add?

MR. LETOURNEAU: Yeah, just on that last point. Through our Low-evel Waste Disposal Facility Federal Review Group and our Performance Assessment

Community of Practice, we are tracking the new information associated not only with the actinide chemistry but with also chemicals and other radionuclides too.

MR. CAMERON: And Dan, do you want to add anything to this from the EPA perspective? Okay. Thank you.

And if I could have the people on the phones just mute your phones for now and we'll be back to you. We're going to go to the audience here in Phoenix.

Any questions or comments for Linda on the general requirements, the strategic planning, or for Frank?

Okay. Let's go over to Aaron. And if you could just please introduce yourself to everybody, Aaron.

MR. WHITE: All right. Good morning, my name is Aaron White. I'm with DOE at Oak Ridge. And my question is regarding the blending issues, and I was wondering if you could get into a little bit more explanation about how you plan to maintain the ability for our organizations to do blending and prevent it from being perceived as dilution just for a pure requirement to meet WAC for the different sites.

MR. LETOURNEAU: Yeah. Blending and concentration averaging go hand in hand, and it's an issue that just really in this last couple of years has become a topic of discussion.

NRC has branch technical position that was issued I think in 1995 that really has been industry standard in understanding how to do that. We did not have anything specifically about concentration averaging or blending in DOE Order 435.1 when we wrote it in 1999. What we're recognizing now is because it has become such a topic of discussion that we do need to say something about it. We're working closely with the NRC staff, trying to make sure that we and they are on the same page.

One that I think we are in violent agreement about is the blending of two waste streams is not dilution. Dilution is blending of waste with clean material. And the concern that I have with respect to blending is not the purposeful mixing of two different waste streams, but recognizing that when waste is generated it comes out of a facility it goes into a box or it goes into a drum. And the information about that waste is catalogued and understood; its radionuclide content whether it's mixed waste or not, its size, its weight.

And when that accumulation container is filled, typically what happens is that all of that information is collected and averaged over the disposal container and that is used to understand where it can go for disposal. There very well could be pieces in that container that in and of themselves are of higher concentration and pieces that are of lower concentration, but the important aspect of it for disposal is what is the total radionuclide content of that package going to the waste disposal facility.

So what we're wanting to make sure doesn't happen is that this concern about blending and concentration averaging turn into something that forces picking through barrels of waste and segregating things out into piles of highly contaminated versus lesser contaminated, when in fact it's all waste and it's probably all going to the same place.

We could spend a lot of time, money, and incurred worker dose sorting through those packages, and that's what we're trying to avoid.

MR. CAMERON: Okay. And I think I'll put the blending issue in the parking lot for the NRC/DOE panel discussion this afternoon.

Questions for Linda, for Frank, for Marty

here in Phoenix in the audience? Yes.

MR. LARSON: Paul Larson with Energy Solutions.

I have a question regarding the applicability there for DOE Order 435.1 and its applicability towards commercial facilities. Certainly, there's some decision making guidance in terms of determining disposition path, but then is there further flow down in terms of what the expectation is in terms of assessment et cetera, from DOE Order 435.1 to a commercial facility that may be used for the disposition of waste?

MR. CAMERON: Thanks, Paul.

MR. DISANZA: Paul, is your question related to services that you provide to characterize and ship waste or disposal?

MR. LARSON: It would be applicable to both. Certainly for the disposal voice, but also there is elements in there about the characterization too.

MR. DISANZA: Well, let me finish here real quick.

This is the way I would respond to your question. As far as when you're providing services for characterization and shipment, I believe it will

be the responsibility of the DOE entity that is what we call the generator to pass on to its contractor and if you're a subcontractor on to you, the requirements that are in DOE Order 435.1. And Linda talked about contractor requirements document, that's what you'll be seeing.

As far as disposal, I think that really is who you're looking to as far as your license. You're going to have to follow those requirements other than -- or the requirements that we have at DOE Order 435.1.

MR. LETOURNEAU: Yeah. The other thing I would say, you were mentioning the assessment requirements, and that's really tied to the current policy on use of commercial facilities. As we've said, we're looking at changing the way that it's done; not having an exemption process that requires our sites to come to headquarters to get approval before they decide to ship waste to a commercial site for disposal. However, part of our commercial use policy is still from a due diligence and liability standpoint, we do have a requirement that our generating sites that are sending waste to other commercial facilities, whether it's for treatment or disposal, have assured that those facilities have

somehow been assessed and that we have assurance that they are in compliance with their own license and permit requirements and that's not going to change.

MR. CAMERON: Okay. Here in Phoenix, follow-up on the commercial use issue?

Okay. Let's go to Greg. Greg.

MR. SUBER: Yeah, Marty, in your presentation I saw a very interesting table that you had where you had best practices and areas of improvement. Did you do a compilation of best practices and were some of the best practices at some sites addressing areas of needed improvement at other sites? And is any of that information public so that we can get an idea of exactly what you consider best practices?

MR. CAMERON: You forgot to just introduce yourself.

MR. SUBER: Oh, I'm sorry. My name is Gregory Suber from the Nuclear Regulatory Commission.

MR. LETOURNEAU: Yeah, good question, Gregory.

What you saw, that table, was a rollup of the information that is in the complex-wide review document that we were referring to. We did have some CD's here, I think they've all been scooped up. But

it is available electronically on our EM website under the tab of compliance and it should be the last tab of the list; 2010 complex-wide review.

You're right, some things that were identified as best practices were in fact able to be used to address areas of improvement at other sites.

One of the very notable best practices that we had was the unreviewed disposal question process that is used at the Savannah River Site. That certainly can be used to address areas of improvement at other sites.

I don't know if Linda or Frank have other specific examples, but certainly we did see some of that type of relationship. We trended all of those best practices and areas of improvement when we rolled them up. And what you were seeing on that table was the ones that we saw most significant that we saw at multiple sites or that just stood out as being very noteworthy. We have all of the best practices and areas of improvement cataloged in the report.

MS. SUTTORA: Actually, one of the best practices was the use of the Low-level Waste Facility Federal Review Group, which helps make sure all the performance assessments are consistent across all the sites just by having that Federal review group

requiring improvements to all PAs across.

MR. DISANZA: One other item that I would add is that, as Marty mentioned, when we were working as the complex-wide review core teams and we looked at the number of best practices that were out there, we made a determination whether each individual best practice had the potential of influencing the update to DOE Order 435.1. And what that means is that if it could be applied across the complex, then we included that as an input that potentially would change or have a change in the update.

For those best practices that didn't make that category, I as the low-level waste core team lead, am working with the Low-Level Waste Corporate Board to first review those best practices and to develop processes where we can share those best practices throughout the complex. But that's outside of the update process; it's in the Corporate Board process.

MS. SUTTORA: And actually I just -- one other mention is back in the Salt Lake City meeting last year, each group was handed all of the areas of improvement and best practices from the complex-wide review. So each group had the entire list and we went one by one and identified whether it was, you know,

something for the update for our chapter. And we were to say, gee, I don't think it goes here, it goes into another chapter. And then if it didn't go in either chapter, we would bin it into the Corporate Board, often. And sometimes we said, gee, you know what, this isn't applicable to something. It only affects this one little site, one little thing and it's not big enough.

But I went back before we came out this week and checked to see how our binning went, because we get so caught up in working on the chapter that I couldn't remember if we had actually taken into account all the items that we had binned into saying yes, it needs to go into the general requirements chapter. And in fact every single piece, every single input that was either identified by my group or the other chapters that was supposed to go into general requirements made it in.

MR. CAMERON: Okay, thank you. And I'm going to go to the phones now for anything that they have.

But I guess I just want to put one idea out for you. There was a particularly provocative idea that Marty mentioned that in consultation with DOE general counsel about making part of the parts of

the Order or whatever, we can get clarification, into regulations and I wanted to see if anybody had any thoughts on that. And obviously, there could be implications for an NRC rulemaking too. So think about that.

And let's go to the phones. All of you on the phones, questions? Any questions or comments for DOE here?

I keep looking at the speaker like they're in there. Anybody on the phones?

MS. WILCOX: Yeah, I'm on the phone.

MR. CAMERON: And do you want to make a comment or a question?

MS. WILCOX: I don't have any. I'm just listening, really. I mean, it's interesting and I haven't been involved in any of the other previous session, so it's a catch-up for me but, you know, what I've heard so far is interesting and I'll look forward to the progress that we're going to make on the Order.

MR. CAMERON: Is this Deb?

MS. WILCOX: Yep.

MR. CAMERON: Okay. And Deb, could you just give us your last name too for the transcript?

MS. WILCOX: Yeah. W-I-L-C-O-X.

MR. CAMERON: Okay. Deb Wilcox.

Maureen, Dirk, Rich, Tison, Frank, anybody else on the phone have a question or comment?

MS. O'DELL: This is Maureen but I don't have any questions at this time. Thank you.

MR. CAMERON: And Maureen, what's your last name?

MS. O'DELL: O'Dell.

MR. CAMERON: O-D-E-L-L?

MS. O'DELL: Yes. I work for Bill Levitan.

MR. CAMERON: One of those lucky people who work for Bill?

MS. O'DELL: Yes.

MR. CAMERON: Okay.

MS. O'DELL: Thank you.

MR. DUNNING: This is Dirk. I have one additional question.

MR. CAMERON: And this is Dirk?

MR. DUNNING: Yes, correct.

MR. CAMERON: Dirk Dunning. Okay, go ahead, Dirk.

MR. DUNNING: Hi Bill. Hi Marty.

Marty, as you recall in the Waste Management Area C performance assessment discussions, one of the big questions that came up goes to a topic

I think Bill was talking about in the beginning, but it may have been you, in terms of using models and looking at probabilistic risk assessments. And one of the things that became really clear as we walked through that discussion is that the probabilistic risk assessments look very much at how the model behaves and what the model does, as versus what the model does as compared to the reality.

So my question would be is there a way, or has the Department looked at a way to write into the rules a requirement that the analysis be based on how accurate or inaccurate the modeling is compared to the reality, rather than how precise the model is looking only at itself?

MR. LETOURNEAU: Good question, Dirk.

One of the things that we're grappling with the update here is the amount of direction, both in terms of requirements and guidance related to how to do probabilistic risk assessment and what things need to be taken into account. We've got a pretty strong team of people that are going to be working on that and your comment is exactly one of the things that we need to address to ensure that it's done correctly and that we don't head off on something that just becomes a paper exercise.

MR. CAMERON: Okay. Thanks, Marty. Thanks, Dirk.

Okay. I'm going to go back to the room in Phoenix now. And we're going to go over to Boby and then we're going to go over to the gentleman over there.

Boby, please introduce yourself.

DR. EID: This is Boby Eid. Thank you for the excellent presentation and the discussion is lively.

My question is regarding an issue also we are dealing with at the NRC, which is the period of performance. In the presentation, you indicated that the selected period of performance is 10,000 years. In this regard, how did you reach the conclusion for 10,000 years? It is it a policy decision? Is it a technical analysis? Is it -- also you looked at the NRC, regarding NUREG-1573 where the recommendation at that time, it was 10,000 years for compliance.

And also you indicated that you will do qualitative analysis beyond that time. What do you have in mind to do the qualitative analysis for, and what you are looking for beyond that time and how about alternatives that you are beginning with? Because you said you will try to use the peak dose.

In this regard, if it is the peak dose, where is the probabilistic issue if you use the peak dose in this regard?

And thank you. I know this question is not easy and we are dealing with, so I understand if you have no answer.

MR. LETOURNEAU: It's an easy question. In DOE Order 435.1 right now, we have as our period of performance or the time of compliance for a disposal facility 1,000 years. But we also said that we would look at the peak out to 10,000 years. And that was part of our compromise, if you will, recognizing that the NRC recommends in its NUREG 10,000 years.

In this update, we looked at that NUREG. We looked at some other things including the Utah state requirements and said, you know, everybody else is saying 10,000 years, it's hard for us to say less than that. Everybody would like to see us do 10,000 years. In fact, in most cases we're going out to the peak out to 10,000 years anyway; that's what that compromise does.

So we're saying in this update, yeah, we're going to pony up and say 10,000 years [this statement was refuted earlier and later in the meeting, as discussed prior in this response and on

page 240 (approximately)]. And ultimately, whatever number you pick is an arbitrary number, but since everybody else is using 10,000 years, it looks like we are going to recommend that also.

As far as the analysis beyond 10,000 years, right now the wording that is being proposed says qualitative analysis beyond 10,000 years. I think that what we'll end up doing as we clean up the language there, is recognize that all analysis is quantitative, but what you do with it may be qualitative.

And I think if we can get a microphone over to Rusty Lundberg there, Rusty might be able to quote us what the Utah regulation says about looking beyond 10,000 years.

I think that wording was quite good and we're looking to do something similar to that, which is recognizing that you can look at the peak beyond 10,000 years and do a qualitative interpretation of it. Which means to me that you're not necessarily comparing that peak dose at 50,000 years, say, to a numerical standard, but you're using it as information that helps the decision maker understand what happens beyond 10,000 years. Does the peak go radically up? Does it level out? Does it go down? How far out is

it? That qualitatively is information that is useful to the decision maker.

MR. CAMERON: Okay. Thanks, Marty.

And you mentioned Rusty. I'm going to ask if Rusty has anything to say and then we have George and John Greeves over there.

Rusty Lundberg.

MR. LUNDBERG: Rusty Lundberg.

Marty, I think you did capture the essence of our language without really looking. But the specific language itself is that we do look at this. As you described this, I started to picture. The analogy is that the reason why 10,000 years keeps coming up is it seems like we're all on this rugby scrum together until the ball is kicked out to someone else to say why should it be any different. I think that we all see ourselves in pretty good company as far as at least this first level of evaluation, in terms of a quantitative view of this seems to be that 10,000 year horizon or time period.

Beyond that in the State of Utah, in terms of our specific regulation, we're looking at this in terms of yes, there are issues that go beyond that, particularly as we look at for our particular view of this as it relates to depleted uranium with a longer

horizon of concern is then you look at the peak dose time frame. And that's where you also wrap in this idea of qualitatively what else can you do at that point to be helpful and determinant about what you want to accomplish.

MR. CAMERON: Great. Thank you, Rusty.

Let's go to George and then John Greeves.

George, could you please introduce yourself to us?

MR. SAULNIER: Hello. George Saulnier (phonetic) from Areva.

I just had a question. Marty, you mentioned that in some of the legacy cans you didn't want -- you were going to look at the total dose or the total equivalent in there and not go and pick through the can to take out pieces of waste. But with some of the waste containers at Hanford there's a real dog's breakfast, if you will, of stuff which might even include used fuel.

As an operator contractor are we going to have to separate, for example, if there's little pieces of used fuel or can we just start accumulating in a can, so to speak, and get up to a fissile gram equivalent and send that off to WIPP? Or would we have to do that detailed segregation, which might be

quite complicated?

MR. LETOURNEAU: Under DOE Order 435.1 we have managed pieces of used fuel as low-level waste where it was used in a research activity, small quantities. Certainly, you've got to look at the specific situation. If you are in a fuel fabrication plant, that's a little bit different situation.

But the key thing here, I think, is recognizing that how you understand the work that you're performing is going to help you understand the work or the waste that you're generating. And the examples I like to use are, you know, when we go to knock down a building there's nothing that requires us to take at all rubble that's highly contaminated and put it in one pile or the rubble that's slightly contaminated and put it in another pile. No, we knock down the whole building and we average over the rubble. That's one example.

Another example is I've got waste coming out of a building and it may be a lot of dry activated waste, job control waste, booties, it may also include HEPA filters. I don't necessarily have to treat those as two separate waste streams. I'm viewing this as the waste coming out of the building, it's going into my drum. I'm going to average over the content of that

drum. So in that context, that piece of fuel may be okay, but it does depend on the context.

MR. CAMERON: Okay. Thank you.

John Greeves. John.

MR. GREEVES: Yes. I'm going to get back to something you asked ten minutes ago.

You asked the question about rulemaking versus the Order. And I'll observe that I think part of DOE Order 435.1 has to go to rulemaking. There's the issue of sufficient concentrations; and the Department has a liability at the present time because the Order doesn't go through the Administrative Procedure Act via rulemaking to get you into a defensible position to be able to implement this.

And the sufficient concentration language comes out of the Nuclear Waste Policy Act of 1982; and it raises a question because the Act calls for the Commission to make a determination about what's sufficient concentration. So somewhere along the line, one, I think it needs to go into a rule, two, I think there needs to be an alignment between DOE and the Commission and the question needs to be called who actually makes that call. The Act says the Commission makes the call.

And also, this affects lots of other

things besides DOE, including their nuclear renaissance. There's a white paper, Marty as you are aware, where the industry wants this particular gap in definition resolved and to define what sufficient concentrations are.

So it's a little bit of a long-winded, but that's an excellent topic that at some point in time there needs to be a paper put out as how that's going to be resolved, hopefully in alignment with the Nuclear Regulatory Commission. In fact, I think they're going to have to make the determination; but that's just an opinion.

MR. LETOURNEAU: Yeah, John, think you did a pretty good job of summing up the same position that our general counsel had, which was this feeling that there are some parts of DOE Order 435.1 that would probably be better promulgated as regulation.

So what we've done on our schedule is recognize that when we've got all of the core team work done and we've put together a draft that comports with our internal requirements and we're ready to put that out for public comment and we're ready to put it into the directive system, we're going to sit down with our general counsel and say, okay, let's look at this. What do you think? What do you want to pull

out? Obviously, something like the waste-incidental-to-reprocessing processes is something that they would be very interested in seeing promulgated.

To that end, one of the things that we're looking at is a new specific section, I don't know if it's a chapter or part of general requirements, but a section specifically on waste classification. And that would allow us to address the waste incidental-to-reprocessing concept there. It would also allow us to address concentration averaging and blending.

And if that was all in one section about classification, that might be a candidate that we and our general counsel would look possibly putting out as a DOE regulation.

MR. CAMERON: Okay. Thanks, Marty.

And to give Larry and his staff time to think about this -- Larry, would you be ready to address this when we go to the joint DOE/NRC panel, this idea?

MR. CAMPER: Yeah. We'll caucus at lunchtime and think about what we've heard here. And yeah, we can talk about it at that time.

MR. CAMERON: Thank you.

And we're going to go to John here in the room. And I'm going to check in with the people on

the phones one last time. John.

MR. TAUXE: John Tauxe with Neptune and Company.

I just had a minor historical note here that the Order that preceded DOE Orders 435.1, 5820.2A, also had a 10,000 year standard in it. So you may recall that it was dropped to 1,000, and now you're going back to the 10,000.

MR. LETOURNEAU: Well, we did try to kick the ball out of the scrum by going to 1,000, but nobody followed us.

MR. CAMERON: Okay. Mike Lee, introduce yourself.

DR. LEE: Hi, I'm Mike Lee with the NRC staff.

Over the last couple of days there's been a lot of discussion about the staff's position on low-level waste performance assessment. And at the time that document, staff was also running its own independent test case. The test case was not unlike what was done for the original EIS work, but let me just say it was more sophisticated, if I can use that term.

And what the staff found is that in running the test case, they ran the analysis out to

almost 200,000 years based on the inventories that were defined in the EIS originally for Part 61. And they found that most of the dose was covered within 10,000 years.

So it wasn't a capricious decision, nor was it arbitrary. But there was a basis, if you will, for deciding that 10,000 years seemed to be the right number to go with. And if you go to that document, which I think is as fresh as the day it was first printed, and I think it is pages B-13, or 15 or 17. And the response to public comments, there's about two and a half pages that are dedicated to how the staff arrived at the 10,000 year number. It's in response to public comments. So I encourage folks to read it from front to cover and maybe we can have a quiz one day or, you know, something like that.

MR. CAMERON: A quiz? Okay. Maybe later on this afternoon.

MR. CAMERON: Okay. Let me go to those of you on the phone. You've heard the discussion here. Anything that anybody wants to add to that or any new things that you want to bring up?

MS. CIMON: Yes, this is Shelley Cimon.

MR. CAMERON: Okay. And Shelley, just let me make sure I have the correct spelling for our

stenographer.

MS. CIMON: Sure. It's S-H-E-L-L-E-Y, C-I-M-O-N, in Hanford.

MR. CAMERON: Shelley Cimon in Hanford. Go ahead.

MS. CIMON: Yes. Thank you.

I missed the -- I could not be on the call for the first part of the discussions this morning, but there are some pretty pithy issues that are going to have to be sorted through. And, as always, I am concerned with public policy and how we get there and how the public gets to interface and understand the depth of these issues and also participate in the decision-making process.

And so I'm wondering if this afternoon or maybe this morning there was someone who touched briefly on how -- what the structure of these decisions looks like, the framework for making them? And I guess that's my question for now.

MR. CAMERON: Let me make sure that we all understand where you're going with that. And I always turn to the guru. Marty, do you know what Shelley is going for?

MR. LETOURNEAU: Shelley, I'm not sure which decisions are you concerned with. Is it the

decisions on the development of the DOE Order 435.1 update?

MS. CIMON: Absolutely.

MR. LETOURNEAU: Okay. Well, right now we're doing the staff work and we will be putting it into our directives review system, which will allow all of the DOE headquarters organizations to provide comment on it. We'll have to resolve all those comments before we can move forward.

As I said earlier, we will also be publishing a notice in the Federal Register making it available for public comment. We'll be considering all of the comments that we receive from both the public and the DOE organizations. Then when we go into the approval process, we have to have approval from the Assistant Secretaries of those organizations in order for this to go forward.

Does that answer your question?

MS. CIMON: It does. Is there a sense of the timeline, Marty?

MR. LETOURNEAU: Yeah. We're hoping to have the draft ready to go into the directive system and out for public comment October of this year. We've scheduled, allowed, for a full year for comment and any revisions that need to be done. So we're

expecting that it would come out and be ready for final approval around August or September of 2012.

MR. CAMERON: Okay. Thank you.

MS. CIMON: Thank you.

MR. CAMERON: Thank you, Shelley.

Anybody else out there on the phone have anything? We're almost to our lunch break, but we have time for something else if anybody has anything.

MR. ENGLAND: This is Frank England. And since I took the day off today, I'll identify myself as a member of the public.

I've really enjoyed this. I want to make a technical comment about the presentation and how they look from home.

This is a wonderful system you all have set up. I'm able to see the slide shows, the video -- Marty, you look great in your red or orange shirt and I'm looking to seeing Linda's iPad used some day, tied in with this system. On a 27-inch monitor I've got room for all of this.

MR. CAMERON: That's very nice.

MR. LETOURNEAU: Thank you, Frank.

MR. CAMERON: Okay. I think that's --

MR. DUNNING: One more.

MR. CAMERON: Go ahead.

MR. DUNNING: This is Dirk Dunning again. And I would echo Frank's comments that, yes, the presentation is quite easy to follow over the web, so this worked out well.

One thing I would, expanding on Shelley's comments, is just to remind everyone of the difficulty in any process like this of hearing the voices that are not in the room. As someone had said early on talking about all the discussions you've had, that everybody was nodding heads around the room that we're all on the same page and agreeing; but that's a very closed environment of people and thoughts and views, and there's a whole lot of voices out in the world that are not included. And somehow with public involvement we always need to be mindful of that and find ways to bring those voices in early so we don't get caught in the decide, announce, defend kind of mode.

MR. CAMERON: Thank you. Go ahead, Marty.

MR. LETOURNEAU: Thank you very much, Dirk.

Yeah, that is something we have to keep in mind throughout this process. Certainly, it is one of the biggest challenges in a process like this.

We have prepared a communications plan.

We are identifying as many organizations as we can, site specific advisory boards and different trade organizations. And we are very open to, you know, coming out and giving presentations and discussing these things in these types of public meetings and other forums because we do want to make sure that we can hear the voices that aren't in this room. But we will keep that in mind throughout this process.

Thank you very much, Dirk.

MR. CAMERON: We will have some of those other voices on the phone this afternoon for the NRC part of this, I'm sure. And to the extent that we deal with the cross-cutting issues between DOE and NRC on the panel discussion, we'll be able to hear from them. But thank you for that thought.

And we're going to break for -- we have one more in the room, Jim Lieberman. And Erick, you're going to have to remind me of what I was supposed to remind people of.

Oh, this session is recorded and also transcribed. And the recording will be available on the website and we'll make sure that everybody has that site before we close today.

Jim Lieberman.

MR. LIEBERMAN: Thank you, Chip.

Marty mentioned that small pieces of spent fuel DOE might consider as low-level waste, but I have two questions. Question one is what's the line, where do you draw the line, and how small is small? And second, since one of the goals is to align the DOE approach and the NRC approach, if NRC might speak to what their views are on having small quantities of spent fuel considered low-level waste.

MR. CAMERON: Marty?

MR. LETOURNEAU: Thanks a lot. Jim.

We have had that requirement both in the current DOE Order 435.1 and in the old Order 5820.2A, so it's been around since 1988. And it really is a situational type thing.

It was primarily put in place so that when somebody took a specimen, a small piece of fuel, into a laboratory setting to do work on it, to examine it, to do tests, that when they were done they didn't have an extremely complicated and unnecessary burden in terms of managing that now as spent fuel. Recognizing that we have to look at what the radionuclide content is and how to manage it both in terms of waste form and final destination, waste acceptance criteria, what disposal facility it would go to. But there's not a numerical standard that we've applied as to what small

is. It's been very situational. And again, it was primarily recognizing that people do laboratory work with specimens and in the end those can be managed safely as low-level waste.

MR. CAMERON: Okay. Thank you.

We're going to break for lunch now. I just want to thank Bill and Marty and Linda and Frank and all of you on the phones. We're going to start at 1:00 with Larry Camper and the NRC process.

Thank you.

(Recess)

MR. CAMERON: Welcome back, everyone. We're going to start the afternoon session of the joint Department of Energy and Nuclear Regulatory Commission public meeting on low-level waste issues. And we talked about DOE Order 435.1 this morning and now we're going to talk about the NRC and Part 61 and efforts to perhaps revise Part 61.

And there are two major components to this afternoon -- or I should say three major components to this afternoon's agenda. We're going to have presentations by the NRC staff beginning with Larry Camper of the NRC, the division director where all of this low-level waste churning goes on. And we're going to hear from Charlie Miller, who is the Office

Director of Federal, State, Materials and Environmental Management at the NRC, and Larry's division is in Charlie's office. And then we're going to have presentations by a cast of thousands from the NRC. We're going to take a break and we are going to come back for public discussion, which will start -- I'll start here with the people here in Phoenix and then we'll go to the phones and we'll go back here to the room.

There's going be a panel at 4:15. This is a joint Department of Energy and NRC to talk about cross-cutting issues between the update of DOE Order 435.1 and Part 61, and we already identified some issues this morning that we have in the parking lot for that discussion. And then there's the 5:15, 15-minute summary.

And I just wanted to point out to people who are either new or new on the phone that the agenda that was on the NRC website has been superseded by the new agenda and we don't stop until 5:30. I think the old agenda had us stopping at 5:00. So I just wanted to point that out to everybody.

And there's a slide up with the web page where the recorded version of today's meeting is going to be; it's going to be on the web page. There's also

going to be a transcript available that could be downloaded also. So two ways to see what went on today.

So we'll leave this up for a few minutes until we are ready to get started with Larry. And I would just ask those of you who are on the phone now to just mute your phones and we'll be checking back with you after the NRC presentations.

And it's a real pleasure to introduce Larry Camper who is going to kick things off for us.

MR. CAMPER: Good afternoon. Thanks for coming back after lunch and not staying outside enjoying that lovely Arizona weather.

Before I give my remarks, I want to clarify something for those of you who were not in the topical workshop yesterday or those of you who are on the phone listening in. You've heard this meeting referred to several times, so I just wanted to be clear that the meeting that's being referred to is a topical workshop that took place yesterday afternoon as part of the Waste Management Symposia WM2011 meeting. It was not a Federally-sponsored public meeting. If you are interested in the proceedings of that, you can certainly contact me or Dr. Boby Abu-Eid of my staff and we can make you more familiar with

that discussion and why it's been referenced here several times.

It was indeed a very interesting discussion. It had to do with performance assessment and long-term monitoring for low-level waste disposal facilities. But of course when we got to talking about that we naturally gravitated at times into the construct of Part 61 and so that's why you hear it being referred to several times here.

Well, I do want to welcome everybody to the session that we are having this afternoon and it is certainly a pleasure to work with our colleagues at DOE in bringing this together. Clearly, we have a lot of interest in what's taking place in the updating of the DOE Order 435.1.

Alignment was mentioned several times this morning. Alignment is a laudable goal. We do have certain statutory constraints and jobs that we do differently, different roles. But having said that, alignment is something that makes an awful lot of sense. And I think alignment and what's the best process for regulating low levels of waste in the United States is something that will be talked about a lot over the next couple of years. So I'm sure that will come up again and again.

But in terms of our workshop today, I want to just briefly discuss the goals for the workshop. And the first is to introduce SECY-10-0165 and the title of that document is The Staff's Approach to the Comprehensive Revision to 10 CFR Part 61, it is identified as SRM M100617B. That was prepared in response to a Commission direction and that's why it is referred to as a staff requirements memorandum or SRM.

We want to elaborate on the options that are described in that Commission paper. That Commission paper is dated December the 27th, 2010. If you are interested in getting a copy of it, it is available, of course.

Clearly, we are mostly interested, of course, in soliciting feedback from the stakeholders. That is an important part of our process and we certainly hope to get lots of dialogue and feedback this afternoon. We had a lot of good input yesterday and I'm sure much of that will continue today.

We also want to describe in the course of our various discussions -- that's good, Marty, that's cute. We want to discuss future opportunities for public comment. There will be a number of public meetings along the way on examination of Part 61, and

so we look forward to getting more input along the way.

We did publish a Federal Register notice dated the 28th of February that did a couple of things. It announced this joint meeting with the Department of Energy, but it also identified certain questions that we are asking for input back from the public on. Those questions were: Should the staff revise the existing Part 61 or should it be left as it currently is? What recommendations do you have for specific changes to the current rule? And then last but not least, what are your suggestions for possible new approaches to commercial low-level waste management here in the United States?

Later in the course of our presentations you are going to hear several members of the NRC staff giving you information about Part 61, about our existing regulatory process, about the information that's contained in the SECY Paper, which I cited. And the whole idea is for us to inform in the first part of our presentation, or do a data dump if you will, so that everyone has a common understanding of the subject matter at this moment in time. And then, of course, that will facilitate the discussion that will follow and questions and so forth and so on.

What I'd like to do now is introduce our keynote speaker for the afternoon, Dr. Charles Miller. It gives me a great deal of pleasure to introduce Dr. Miller. Of course he's my boss and we've been colleagues and good friends for a very long time. And I was very pleased that he would join us and come here today, he's very busy, and take time out of his schedule to demonstrate to all of you how important within his office we believe the Part 61 issues to be.

Dr. Miller is the director of the Office of Federal and State Materials and Environmental Management programs, FSME. Dr. Miller joined the NRC in 1980 as a nuclear engineer in the Office of the Nuclear Reactor Regulation. He served in a number of positions within that office including project manager, technical assistant, section leader, project director, standardization project directorate, project director for project directorate 1-2, chief of the emergency preparedness and radiation protection branch, and deputy director of Incident Response Operations.

And then from 1987 to 1988 he also served as a technical assistant to former Commissioner Bernthal. In 2001 he was appointed the deputy director of licensing and inspection directorate

within the Spent Fuel Project Office and the Office of Nuclear Material Safety and Safeguards.

In October -- excuse me. In 2003 he was appointed as the director of the Division of Industrial and Medical and Nuclear Safety within NMSS. And then in October of 2006, Dr. Miller was appointed to his current position as the director of FSME.

He received his Bachelor of Science degree in engineering from Widener University as well as a masters and a PhD in chemical engineering from the University of Maryland. He is also a licensed chemical engineer, being licensed in the District of Columbia.

Dr. Miller.

DR. MILLER: Thank you, Larry.

Good afternoon everybody, it's a pleasure to be here today.

I recognize that the majority of the stakeholders that are here today are somehow affiliated with some Federal, state, licensed, or contractor or consultant types of responsibilities, but I don't know if we have any members of the public or just interested citizens in the audience today; if we do, if you could raise your hand. I don't see any. I don't know if we have any on the phone. With that said, each of you is an important stakeholder to us,

so I feel that this is a great step as we begin our journey.

Larry talked in a little bit of detail about the workshop yesterday. And I had an opportunity to observe that workshop and it was really gratifying for me because I felt that it was a great intellectual debate. And I think that was very important and there were a lot of great perspectives put on the table for consideration.

As Larry mentioned, I've got a lot of responsibilities that are fairly broad within my office, but low-level waste is certainly one that has risen to the forefront in the last few years. As you know, the day-to-day operations are led by Larry and his division, but I did want to acknowledge one of the new members to the group, Drew Persinko. If you could stand, Drew. Drew is one of Larry's deputies that has recently been placed in a management position there. And many of you will be getting to know and work with Drew.

So what I want to get into next is basically a little by way of background. And the reason we're here today is that the Commission asked us to engage you, our stakeholders, on the important issues and the concerns with regard to commercial on

low-level waste regulations as promulgated in our Part 61.

As most of you know, Congress created the NRC from the earlier Atomic Energy Commission in 1975. And one of the earliest projects that the Commission took on once it was formed was the development of Part 61 as our regulation. That was around 1977.

As part of the development process, the Commission embraced the NEPA process, which was itself relatively new and relied on environmental impact statements to help scope the regulation. The staff met with stakeholders at that time, including interested members of the public on the rulemaking initiative on at least seven occasions. The final Part 61 rule was issued in 1982 and later adopted by our 37 current Agreement States.

We believe the current rule is fully protective of public safety and protection of the environment. I think that's an important matter to state today. But as you all know, you know, the current rule is being implemented in Agreement States only right now because all of our licensed facilities in the United States are currently located in the Agreement States.

So let's talk for a couple of minutes about current events. For the last couple of decades the low-level waste program at the NRC, based upon what I just told you, was essentially Jim Kennedy; who many of you know. He was the agency's eyes and ears when it came to low-level waste issues while the program was in a maintenance mode. And over the last few days Jim was referred to as many things, but I affectionately refer to Jim as the guru of low-level waste. And I know that embarrasses him, but he truly is.

So within the last few years there has been a growing interest in activity in the low-level waste arena. And let me just name a few items of interest, which is certainly not all-inclusive. We've had over the last many years the opening of the Clive, Utah and the WCS sites, the emergence of depleted uranium as a waste stream, the change in status of the Barnwell site, concentration and averaging and blending of low-level waste as the business model for some generators, the ongoing NRC reprocessing initiative, whatever it might turn out to be if we do proceed to fruition, and issues related to the disposition of low-activity Rad waste and norm; these are just to name a few, and the list goes on.

Another significant development happened in about the 1995 time frame where the Commission issued a probabilistic risk assessment policy statement that directed to staff to expand its use of probabilistic risk assessments and risk methods including areas such as low-level waste. Consequently, with all the changes and the new developments, the staff prepared SECY-07-180, which was entitled Strategic Assessment of a Low-Level Waste, Radioactive Waste Regulatory Program.

And let me just pause there for a second before I go on, because we talk a lot about the staff and the Commission and SECY Papers. And one of the things I found in speaking in many forums are it's not always obvious that all of at the members that are there really understand how the NRC does business. So if those of you that know will indulge me for a minute, I'll cover that.

Our Commissioners, we have five when fully filled and we do currently have five Commissioners, are nominated by the President of the United States and confirmed by the Senate; and then the President gets to choose who the chairman will be at any given time. They only have three Commissioners from any political party. That was in the wisdom of Congress

when they promulgated the Atomic Energy Act. And as an independent agency, the Commissioners fill a five-year term. When they are appointed and confirmed in a timely manner they can be renewed.

They do not serve at the pleasure of the President except for the chairman as the chairman. But if the chairman is asked to step back and be a Commissioner, they still fulfill their term if they so choose. And there is a separation of functions aspect to what we do. There is an NRC staff and then there is a Commission.

And so the NRC staff does all of the work with regard to implementing Commission policy and presenting the Commission with policy for decisions to make. And a majority vote of the Commission sets the policy. So when you hear us talk about those SECY Papers, in many cases the NRC staff is giving the Commission policy issues to debate and determine by a majority vote how they want the staff to proceed to implement the program.

So that's just a little bit about how we do business.

So the SECY Paper that I referred to, which is the strategic assessment, identified about 20 ongoing and future staff actions and activities, along

with associated schedules that the staff thought would need some attention by the NRC in one way or another, given the renewed level of interest in low-level waste. One of those areas, of course, concerned whether there might be a need for a Part 61 makeover, which was item 10 in the strategic assessment paper.

So why are we here today? Well, following -- in 2010 there was a Commission briefing on the blending of low-level waste, and the staff received Commission direction to outline its approach to a comprehensive revision to Part 61 that's risk informed and performance based. At the time, the staff was engaged in developing a technical basis to support a limited rulemaking to Part 61 that was intended to introduce both an explicit performance assessment requirement as well as a requirement for a human intrusion calculation to the Commission's low-level waste regulation.

These regulatory enhancements are intended to deal with near-term issue of how to address new and emerging low level waste streams in the context of Part 61, as well as to improve the regulations alignment with the 1995 Commission PRA policy statement. That limited rulemaking is currently under way.

In response to the Commissions direction though, the staff prepared a SECY Paper, SECY-10-165, which Larry just put up on the board, that determines some options on how to revise Part 61 in a manner that's risk informed and performance based. The staff recommended to the Commission that before the Commission deliberates on the various options that we meet with our stakeholders and get feedback, solicit reviews; and that's why we're here today. The beginning of that process is really starting with our public meeting today. And so this is the first such engagement of that and we hope to do more. The number of which will be determined as resources permit, but we will have a number of these as we go along.

As many of you know, meaningful, clear communication with the public is an important agency goal for the NRC. We pride ourselves as the recognized number one Federal agency to work. And of course we get a lot of grief about that. However, one of the things that we place a high premium on is communication and to make sure that we try to continue to improve our communication both internally and externally.

Consistent with the earlier Part 61 development model, we once again would like to hear

from stakeholders and seek your feedback on the presentations that will follow from Larry and his staff today. These presentations are intended to stimulate some thought and discussion and we hope that you'll be engaged.

Okay. I mentioned that we're going to have some future meetings, but we also expect to rely on technology to engage stakeholders using electronic media platforms like "GoToMeeting.COM" and the like. You may find that you wish to consider what was said today before you react and so if you chose to send us written comments, we're always happy to receive those and encourage those.

You must also have alternate views on changes to Part 61. And if yesterday's workshop was any example, I'm sure that we'll get plenty of them as we go forward.

In closing, I'd like to note that the NRC is always mindful of how it can improve regulatory efficiency and decision-making without compromising public health and safety and the protection of the environment.

A prime example of the consciousness for improvement in this area is nuclear power licensing activities that we are currently doing for new

reactors. About a decade or so ago, the Commission amended its decision-making process to include early site permits, design certifications, and combine operating licenses. The marriage of these three elements is beginning to produces some real-time successes in the area of new reactor licensing as we review a number of applications. We'd like to hear from you as to whether similar changes are now appropriate for Part 61. At this point we're very open minded; we've formed no conclusions and are in an input-seeking mode.

And so I thank you for your time and interest in being here today, especially on a Friday afternoon after a long week for many of you. And I hope that you will engage Larry and staff after you hear their presentations with some challenging issues for us to consider. Again, thank you and I hope that you have a good session this afternoon. Larry.

MR. CAMPER: Thank you very much, Charlie.

Often when we're up talking with Charlie about issues in my program, which is a fairly broad program that includes decommissioning, of course, and low-level waste issues and waste-incidental-to-reprocessing and NEPA assessment and uranium recovery, he'll often look at me and say, is there anything in

your division that is simple and straightforward? And the answer of course is, no, it's not. So we really do appreciate Dr. Miller coming out and spending time. He's actually been here the whole week during the conference. He's very interested in what goes on in our area. And he's a busy guy and, again, I very much appreciate him being here with us this week.

Before we get into our presentations, I did want to address one issue that came up this morning. John Greeves raised a question regarding sufficient concentrations and we talked with our legal staff at lunchtime, and Lisa -- where's Lisa London (NRC Office of the General Counsel - OGC); is she here? Lisa was going to make a point of clarification so there's no confusion about what was being said. And we did talk with John about it, so he's aware that we're going to make this clarification. But Lisa thought it was important that we -- that everyone stays on the same page --

MS. LONDON: I don't know if this is on?

MR. CAMPER: Yeah, it's on.

MS. LONDON: I thought I had misheard something earlier that John (Greeves) had said, so I just wanted to clarify in case anyone else thought they heard the same thing. Mr. Greeves raised a

point; I thought he was stating that the Commission was in fact required to set the standards for sufficient concentrations pursuant to the definition of high-level radioactive waste in the Nuclear Waste Policy Act. What, in fact, he was saying was that the Commission has the authority to do so and that it was his and I'm assuming Jim Lieberman and Talisman's advice that they should do that and that, in doing so they should do it as a broad-brush effort, as opposed to in discrete situations such as West Valley.

So I just wanted to make that clarification for the record. They were not, in fact, saying "required," and they are just saying "authority." Thanks.

MR. CAMPER: Thank you, Lisa. Thank you very much.

All right, with that then, I'm going to introduce our first staff presentation, then each of the speakers will introduce the one who follows him in turn. Of course, our first speaker, who could better talk to us about the historical development of 10 CFR Part 61 better than Jim Kennedy?

Now, I want you to know that for those who weren't in that workshop yesterday afternoon, we were talking about old geezers and so forth. Jim made a

declaratory statement that he was not to be considered as an old geezer. Okay. Jim.

MR. KENNEDY: Thank you Larry, it's a great pleasure to be here.

And today I'm going to give you a historical overview of the development of NRC's regulation in Part 61. I am going to describe what happened that caused NRC to undertake this large rulemaking; that is give you some context for what was going on at the time when Part 61 was initiated. I'm going to describe how we went about it. I'm going to also talk about some of the safety and risk management issues that were examined at that time. Some of them you heard yesterday, so I won't dwell too much on those.

And I think it would be really interesting to spend more time going over the history. It's kind of like history in the schools now; you just don't pay much attention to it, but if you go back and look at it and ponder it and ask questions like, you know, what's different between now and then in waste generation rates, technology, experience, regulatory philosophy, and so forth? Why was that effort successful? You know, what did they do right back then and what, if they had to do it over, would they

do differently?

I would argue that, you know, in light of 30 years of Part 61 being in place, that most people would agree that it's been a great success. We've had 30 years of safe disposal of low-level waste. It's true that we're talking about improvements that we can make and risk informing it and so forth, but I think most folks would agree that it's been a big success and that there may be something to learn from how it was developed.

Now, I'm not going to belabor geezers and all that. Somebody called me ancient yesterday; I won't disagree with that. I don't feel ancient, but I will say I was working -- you know, I had been working for some time before Part 61 was even developed.

That said, I was not involved in the development of it. I've learned a lot, having worked in low-level waste for a long time. I've learned a lot about how it was developed. And I've worked with Paul Lohaus in particular and some of the other folks who were involved at the time, so I've learned a lot from them.

But a lot of what I've learned and a lot of my talk today came from NUREG-1853, The History and Framework of Commercial Low-Level Waste Management in

The United States. That was mentioned yesterday, it was prepared mostly by Doctors Lee and Ryan, Mike Lee and Mike Ryan, when they were with the Advisory Committee on Nuclear Waste. It was published in January 2007. It's really a great summary of the national program and more specifically the regulatory program Part 61 in particular, but even beyond that as well. And you know, I would say that I refer to it probably once a month, there's a question that might come in from the public or public affairs or one of the technical staff and I have it on my desktop and I just call it up and do a word search and it's a really useful document.

Well, first the early practices for commercial low-level waste. In the beginning, ocean disposal was the primary method by which commercial low-level waste was disposed of. It occurred at 60 different sites, mainly in the Atlantic and Pacific Oceans. It occurred from 1946. They started phasing it out in the early 1960s. It was first done by the Navy up until 1959 and then the Atomic Energy Commission licensed seven companies to perform this ocean disposal. There were, in fact, even standards for ocean disposal that had been developed by the National Bureau of Standards back in 1954.

Now, back in that time there was adverse public reaction to marine pollution. That eventually led to the 1972 London Convention, which put constraints on dumping in the sea. On top of that, it wasn't cheap to dispose of low-level waste in ocean; it cost about ten times what it cost to dispose of it on land. And for those reasons the AEC shifted from a policy of ocean disposal to disposal on land. Ultimately, their policy was to encourage the development of private disposal sites. But between the time that ocean disposal was being phased out and private companies had developed new disposal sites for commercial waste, as an interim measure they allowed commercial waste to be disposed of on DOE sites, or AE sites at the time. There were 16 of those.

Now, of course most of us in this room are familiar with the early commercial disposal sites, Beatty, Richland, Barnwell, Maxey Flats, West Valley, and Sheffield. They were all licensed in the 1960s. There's only been two more that have been licensed since then under Part 61 or the agreements date equivalents, and that's the Clive site in Utah and the recently licensed Waste Control Specialist site in Texas.

We should note here that they were all

licensed under 10 CFR Part 20. There was a provision in Part 20, specifically 20.302, which was just a few sentences long. There was no systematic site selection criteria or design criteria, just general licensing criteria of a few sentences in 20 CFR 20.302.

Now, in the 1970s there were performance issues at three sites: Maxey Flats, West Valley, and Sheffield. Problems occurred at these sites. As time passed some waste consolidated and collapsed causing some of the disposal trenches to settle and become depressions in the ground. These depressions collected rain and therefore increased contact of water with the disposed waste. Site and groundwater conditions around the trenches at these sites also combined with waste consolidation and led to releases of radionuclides from the trenches through surface and ground water. There weren't significant release of radioactivity off-site, however.

Those problems and performance issues were caused at least in part by the lack of the specificity in the regulations. That is, when they were licensed and when companies went out and developed these sites, they just didn't have much guidance or regulatory criteria on which to base their decisions.

Now, these performance problems drew a lot of attention at the national level. The public was very interested. There were several Government Accountability Office reports at the time. There were Congressional hearings. NRC, Charlie mentioned in his talk, one of its first major actions as an agency was to look into low-level waste and the problems at these sites.

We formed a task force, and in 1977 the task force issued its report. They concluded that there was an urgent need to establish a comprehensive set of standards for low-level waste disposal and a need to accelerate the development of the regulatory program for the disposal of low-level waste. So this is really the beginning of Part 61 in 1977.

I'm going to go off point for a second here. At the same time that Part 61 was being initiated and later developed, there were Congressional actions with respect to the management and disposal of low-level waste, not really so much from a safety point of view, because that's covered under NRC's regulatory program and the Agreement State program, but at a broader policy level.

The Congress passed the Low-Level Waste Policy Act in 1980 making states responsible for

providing disposal capacity either within or outside their state. It authorized states to form compacts and to exclude out of compact waste and it enabled them to do so after January 1st, 1986. Now, as you know, the Act was amended in 1985, it extended the timetable by seven years and it also addressed some other issues such as GTCC, making it a Federal responsibility, emergency access by which generators who were excluded under the compact provisions could have a ruling that would enable them to dispose of their waste under certain extreme conditions, and below regulatory concern was another topic that was addressed in the Amendments Act.

But returning to Part 61, from my point of view looking at this, this was a relatively quick rulemaking, given how controversial and comprehensive it was. The ANPR (Advanced Notice of Proposed Rulemaking) was first published in October of 1978. I think as Charlie mentioned, there was considerable stakeholder outreach at the time, there were four regional workshops during 1980. It's interesting to reflect back because my perception is stakeholder outreach is a relatively new phenomenon, say the past 15 or 20 years. And yet back in 1980 they really reached out to the public and had, you know, something

that's comparable to what we're doing today.

We published the proposed Rule in July of '81. We published a draft EIS and the final EIS in 1981 and '82. And the final Rule was promulgated in December, 1982. So from start to finish, really, it is four years, five years.

Part 61, just an overview of it. First, I don't have a bullet for this, but it applies to all land disposal facilities. That does not include geologic disposal facilities but would include everything else. We have specific technical requirements for near-surface and above-ground disposal technology. It applies to commercial low-level waste disposal, that is, privately owned companies, and uses an integrated systems approach in the regulations consisting of site selection, site design and operation, waste classification, waste form, and closure.

Now, NRC's Regulatory philosophy in developing Part 61, it included the usual things. That is, we protect members of the general public, we protect workers under Part 61, we have redundant systems; that is some defense in depth. But what was unique about Part 61 was that it was addressing long-term waste isolation and protection of an inadvertent

intruder; those were two new areas that were not addressed in other parts of the regulation.

Now, I'm not going to go into this in detail because I think most of you heard a lot about this yesterday, but the primary technical basis for Part 61 is contained in the Draft EIS, NUREG-0782. Its purpose was to provide the basis and record for decision on requirements that were adopted. Its scope includes the health impacts of low-level waste disposal, various means of limiting impacts such as waste form and deeper disposal, the benefits achieved, and alternatives in facility environments, waste characteristics, design, and operating practices.

It's really quite a large and complex and complicated document I would say. You know, I've read it many times myself and in my review there are only a handful of people who probably really understand most of what's in there. I would include Dave Esh in that category and Matt Kozak, Mike Ryan, Mike Lee. But it's an interesting document and there's a tremendous amount of information in there.

Now, the waste streams that were considered at the time were commercial generators. The authors of the DEIS constructed a low-level waste profile, they identified dominant radionuclides from

waste generators, they defined a likely inventory for disposal consisting of 36 waste streams among four waste classes. The four classes were light-water reactor process waste, trash, low-specific-activity waste such as bio-waste, and special wastes such as sealed sources. They identified in particular 24 radionuclides of interest, and they looked at exposure pathways consisting of those that were activity limited, that is off-site releases to a member of the general public, as well as concentration limited, which affect protection of an inadvertent intruder onto the site.

They considered potential mitigation or risk management approaches in the EIS or DEIS. Namely controlling waste stream concentrations to limit the exposures, specifying waste form and packaging configurations, relying on limited engineering features, and adopting institutional controls.

The dose standard that was proposed in the original Part 61, the proposed Part 61 rather, was 25/75/25 millirem per year, coupled with 4 millirem per year at the public water supply source. The DEIS also had a three-tier waste classification system that we're familiar with, LLW Classes A, B, and C, based on the 500 millirem per year dose to an inadvertent

intruder.

The FEIS was published in NUREG-0945. It's not an updated version of the Draft EIS as most final EIS are; rather it simply references the earlier document and presents the decision basis and conclusions for the final regulations.

Now, this is kind of busy. It's a summary of the Part 61 waste classification system, which is only a part of the regulation, but one that gets a lot of attention. I'm not going to go through all of that. Suffice it to say that, you know, there are three classes that are defined in Part 61 and the controls that reutilized and specified in Part 61 increase with the increase in hazard from A, B to C.

Well, what about other radioactive waste, other low-level waste? Of course, there's GTCC; and in 1988 or '89 we added a provision to Part 61 that addresses GTCC. It presumes that GTCC would be disposed of in a geologic repository, licensed under either Part 60 or when Yucca Mountain was viable, Part 63. It also says that the Commission can approve other alternatives. Those alternatives could be approved under Part 61. The performance objectives would apply in that case, the four performance objectives in Part 61. However, there are no detailed

technical requirements for GTCC waste in Part 61.

Below regulatory concern. NRC proposed standards for NRC waste in 1986 and 1990; Congress revoked those in 1992. And from about 2000 to 2005 we worked on rulemaking on disposition of solid materials, which would have enabled disposal of and recycling of materials that met the IAEA standards for clearance. And as Dr. Meserve mentioned in his keynote address on Monday, that rulemaking was put on hold in 2005, in part because of higher priority rulemakings dealing with security.

And then another important low-level waste stream that's not addressed in Part 61 explicitly is low-activity waste. Low-activity waste is low-level waste at the very low end of the spectrum. Low Class A is another way of saying it. Sometimes it's disposed of under NRC or Agreement State provisions in Section 20.2002. There's a typo on the slide, I apologize for that. And EPA over the years has addressed it. They had an ANPR on the topic back in 2003 and I think they are considering it again, perhaps as showing some guidance in the future.

Low-activity waste also considers or includes rather, NORM waste, even though that's not regulated by NRC. Many folks define low-activity

waste as including NORM; that is uranium and thorium in relatively low concentrations. And states regulate NORM. Much of that waste goes to RCRA subtitle D and subtitle C landfills.

Just to summarize, Part 61 rulemaking. You know, it's been, I think, a success for the last 30 years. It's provided for safe disposal and caused improved practices for disposal. I think we'd all agree it's outdated in some respects and there are lots of different ways that we could go about revising it that we're going to be talking about this afternoon.

I'll just finish with this. I want to emphasize how helpful and useful the NUREG-1853 is. Another good reference that I'll mention is a publication of DOE back in 1994 regarding the history of commercial sites. And that's somewhat different from NUREG-1853 in that it focuses mainly on the sites themselves and the geology and hydrology and the licensing history and so forth, and that's another good reference that I've used for today as well.

Thank you for your attention. Any clarifying questions?

MR. CAMERON: Jim, I think we're going to go through all the presentations.

MR. KENNEDY: Okay.

MR. CAMERON: And I just thank everybody for their patience not only here in the room, but on the phone. We're going to go through all the presentations and then we'll be back to you. Thank you, Jim.

MR. CAMPER: Jim, thank you for that historical overview of Part 61. And what I want to try to do now is continue to paint the picture of what brings us to where we are now by addressing some recent developments that have come along.

Dr. Miller in his comments referenced the low-level waste strategic assessment, which was done in 2007. We had a situation in the low-level waste program, which I think even Dr. Miller mentioned. The low-level waste program has been in a maintenance mode for years, staffed at about five FTE. And around 2006 the staff -- we looked at this and we said, wait a minute, there's just more and more work that's coming up in the low-level waste area and we've got to do an assessment and try to figure out okay, what can we do with the resources that we have and share that information with the Commission?

So we did this strategic assessment. And we looked at 20 various activities as part of that

assessment and identified seven high-priority items and then we shared that with the Commission and said, okay, these are the seven high-priority items, this is how we're going to handle the remaining 13, in this is the time frame. And the Commission was okay with that.

Well, one of the things that was set forth as a high priority item was to update the Branch Technical Position, the Concentration Averaging BTP. We had a workshop on the 24th of February, just a week before the symposium in which we had an invited panel and we had a very active discussion about the BTP. The BTP, of course, is the operational document that is used every day as utilities and other producers of radioactive waste go about packaging the waste and preparing it for classification and so forth. So we started down the path of updating the BTP with the goal of making it more risk informed and performance based and easier, frankly, to read.

Then along came the disposal of large quantities of depleted uranium. In fact, in the SECY PAPER that you see cited there, SECY-08-147, which the staff prepared in response to Commission direction because the Commission directed the staff outside of the adjudicatory proceedings associated with the

Louisiana Energy Services licensing hearing to evaluate whether we felt that Part 61, specifically Section 61.55(a)(6), which is the default provision which makes depleted uranium Class A LLW according to the Section 61.55 waste classification tables, should in fact be modified in any way to handle the fact that there was going to be these large quantities of depleted uranium to be disposed of. Large meaning that if one looks at the DOE DU located at Paducah and Port Smith, enforcement anticipated DU coming from uranium enrichment facilities that are being licensed and will operate over 30 years, you are in excess of 1 million metric tons of depleted uranium. So clearly it was a problem that warranted some attention.

We conducted a couple of public meetings and then made a recommendation at SECY-08-147 that yes, we felt there was a need to change the regulations. We thought that it would be appropriate to require a site-specific performance assessment to address the disposal of what became known as unique waste streams. A unique waste stream is any waste stream that was not evaluated at the time Part 61 was created, including large quantities of depleted uranium, of course.

The Commission agreed with that and

directed us to proceed with a limited rulemaking, which is currently under way. We plan to produce a proposed rule later this year, I think it is October of this year.

As part of that we will be identifying a period of performance, we will be identifying other technical parameters that need to be evaluated, we will be doing more work on the intruder protection scenario by requiring a deterministic dose calculation, assigning a dose value to that.

And the Commission, interestingly enough in SECY-08-147, the staff requirements memorandum, did something else. In addition to requiring the staff to go ahead and proceed to do the limited rulemaking, which is under way currently, the unique waste streams rulemaking, it directed us to budget for, and we assume they meant proceed to do therefore, a risk informing of the waste classification scheme. That assignment is on the table today for the NRC staff to carry out. Dr. Esh, who follows me, will talk about that in more detail; and it is the first option in the SECY Paper that the staff has prepared to address this issue of perhaps some sort of comprehensive revision to the Part 61.

In terms of the updating of the

concentration averaging BTP, along the way we started to do that work. We actually had a version published to make it more user-friendly. No changes to its technical content, but along came this concept called blending. So the staff decided that we should put the effort to update the BTP on hold until we could assess this issue called blending, communicate with the Commission about that topic, and then have the Commission decide what they want to do about this topic called blending.

What was interesting about blending was that blending is not specifically addressed in our regulations, nor is it prohibited by our regulations. So the staff prepared a Commission paper, you see it there, SECY-10-43, we held some public workshops, we conducted a Commission briefing last summer. And then as a result of that the Commission said blending should be added to and addressed within the branch technical position, the updating of the BTP, and gave us certain specific direction about things to address that are related to blending, such as for example homogeneity criteria. So today the BTP update continues, blending is now being addressed within that.

The next item deals with reprocessing.

The issue for potential commercial reprocessing has emerged again. The staff undertook an analysis and realized in doing a gaps analysis there are things that we would need to do to enhance our existing regulatory infrastructure if we were going to license a commercial reprocessing facility today. Within that gaps analysis one of the areas that was identified was the fact that commercial fuel reprocessing certainly could result in new waste streams that have not been currently addressed in Part 61 and therefore that more work was needed in that particular area.

You see that SECY Paper identified there, SECY-09-82, in which the staff's analysis of those gaps and its suggested path for proceeding ahead to address how to deal with commercial reprocessing, including the advent of new waste streams.

SECY-10-165, you know, the subject matter of why we are here today, identifies options for revising Part 61. It does focus upon approaches that are risk informed and performance based, but in developing the SECY Paper what the staff recommended that we do is to proceed to go get stakeholder input. Clearly, Part 61 is a regulatory part that we knew would generate a great deal of interest and there is a strong diversity of opinions about the existing

regulation or how it might be modified or how it might be improved and so forth.

So our recommendation was let's hold numerous public interface meetings and get some ideas. We do identify five options in there. And I would make it clear though that at this point in time the staff has no preconceived notion at all on how we should proceed on Part 61, nor should we, because we would not be true to the process if we had preconceived notions at this point.

Updating DOE Order 435.1. Of course, DOE has undertaken that update for some time now; today is the third public meeting. Some discussions this morning clearly make us all realize the synergism and perhaps the opportunity for some alignment as DOE continues to update that Order, and that's something that we'll be looking at very closely as we proceed down the road.

In terms of the five options in the SECY Paper, the first was to risk inform the Part 61 waste classification framework. Again, that is an assignment that we have right now per the staff requirements memorandum that came out of SECY-08-147, and Dave will talk more about that in a moment.

The second was a comprehensive revision

option. We refer to it lovingly as the "Big C." Clean slate, open mind, what should Part 61 look like? If we were going to start anew and look at it from the beginning, what would it look like? That's the comprehensive revision idea.

The third is the international alignment option. Of course as you know, the International Atomic Energy Agency has a different waste classification system and includes at one end the category of exempt waste, and at the other end has high-level waste. It is a waste management process, but the issue here is could we, should we align with the international approach?

The fourth option was the use of a site-specific waste acceptance criteria. Very much like the DOE model, the use of a site-specific performance assessment with a waste acceptance criteria being identified for each particular site. And if you stop and think about it, given the work that we're doing today under the limited rulemaking, where the Commission directed us to require a site-specific performance assessment for unique waste streams, we would be then very close to that option once that particular regulatory activity is complete. So that's the fourth option.

And the fifth option is to maintain the status quo. What's interesting about that particular option though, and you're going to hear more about it, it's a negative option. Under that option, it would say don't proceed to risk inform the waste classification scheme. Rather, proceed only with the existing assignment; that being the unique waste streams rulemaking. And you'll hear more about that.

Obviously, this is all about getting stakeholder input. We are trying to cover each of these topics so that, again, everyone has a current understanding. We've got information that we can talk about today, but stakeholder feedback will be critical today as it will be in the future.

So with that I'll stop and Dr. Esh will be talking about the first option within the paper. Dave.

DR. ESH: All right. Thank you, Larry.

This is an interesting presentation. When I was assigned it, they gave me all of five minutes and I said, well, you can get a title slide and a joke and some conclusions, then. And so they gave me five more minutes, so I have a little bit more to talk about that.

I would like to note that my title is

incorrect on this slide. Somebody decided to make me a senior staff scientist and I'm actually a senior systems performance analyst, which means I have the unfortunate situation of being on a mailing list of being sent innovative solutions for the government's IT problems.

This topic has been around a long time, waste classification, and so there will naturally be some resistance to change in it. We heard some yesterday about even whether the whole system should be scrapped. In this presentation, I'm going to talk about some options that you may consider keeping the system, but not the radical option of maybe scrapping it altogether. We have other things that have been around an awful long time and we have trouble scrapping those too, like Jim Kennedy and Larry Camper.

And we did hear yesterday from some people about waste classification. I'm sure this seems like a bit of an oxymoron, risk informing waste classification, because they say, well, when you're in this scenario of people disturbing waste, that's not a risk to begin with. And there's some merit to that, especially when we're talking on shorter time frames. When we get the longer time frames though, I think

there's more merit in having some kind of a classification system. So this risk informing waste classification might be a little bit like referring to Milli Vanilli as singers, for some of you younger folks in the audience.

Background. Our NRC waste classification system is prescriptive. And what we mean by that is NRC took the burden upon themselves of doing the assessment and generating something that would apply to everyone then. The approach was based on the assumption at the time that we would have many low-level waste facilities. So they saw this as a burden, this 61.42 area where you're trying to consider what happens to people if they disturb waste inadvertently. It's much more reliant on the human component and so it's much more open to speculation and interpretation. And they viewed it as being difficult for a diverse set of stakeholders and a diverse set of groups to come to similar outcomes when you have that, maybe, higher amount of uncertainty.

So what NRC did was they performed inverse calculations. And I'll talk about that in a slide coming up; what I mean by that. The approach resulted in the waste classification tables that you see in the existing regulations Tables 1 and 2 at Section 61.55.

But the bottom line is then that this approach constrains all sites to the NRC sets of assumptions and parameter values when they did that calculation.

So a little bit more background. What's an inverse calculation that I just referred to in the previous slide? Well, it's an estimate of the doses that result from unit concentrations. And tables 1 and 2 of Section 61.55, they're constrained by a residential construction scenario and a human site. So, if you are a facility in an arid site and you dispose of your waste much deeper than three meters for instance, you're still bound by the waste classification concentrations that were backed out that were derived for this scenario and this particular site and its environmental conditions, et cetera.

The analysis did consider dilution factors and the distribution of the wastes. So that, I'd say, it is leaning in a risk informed direction, including dilution and dispersion. And then what they did is they calculated the concentration that would result in 5 millisieverts, 5 millirems. So you put in a unit concentration, estimate the dose and then put a dose of 500 millirem in the ratio to the concentration and that backs out the concentrations that you see in the

tables. So those tables that are developed are consistent with the institutional controls, intruder barriers and waste segregation requirements that you find in the Rule.

The waste classification system was built assuming that low-level waste is going to have characteristics where it decays over time, it becomes less hazardous, and by putting in requirements for segregation and intruder barriers you can ensure that for waste that is higher concentrations and might pose a hazard beyond, say, 100 years when our active institutional control period ends, if you put in an intruder barrier or you bury it deeper, you can ensure that the people that might be exposed to it sometime in the future will be protected.

So what are some approaches that we could use to risk inform? And I've color coded some of this because listening to regulatory speak, it's easy for your eyes to glaze over, but there are differences here as I walk down the slide and I want you to pay attention to what those differences are. So if we start at the top, one approach that we could do would be to revise the tables that were in the regulation, adding nuclides that aren't there now with the old generic modeling. So the old generic modeling, we

heard about it yesterday. They developed some codes in FORTRAN, I believe they're called impacts and they did the calculations that were used for development of the EIS and therefore the regulation.

Well, at some point in the very recent, within the last couple of years, Sandia National Laboratory did optical character recognition of those files and basically got the old codes up and running. So if needed, we have access to those old codes, we could exercise them, it would be pretty straightforward. Now, those old codes don't have probably every element and every isotope that you might be concerned with, so you might have to add in additional isotopes to it. But they do include more isotopes than ended up with the final tables in the regulations, so it would be easy to do that step. So that's at the top where you're at that time point of smaller effort but limited flexibility. So effort is low up here, flexibility is limited.

So the next thing we could do would be to revise the tables to add nuclides and maybe with new generic modeling. So what do I mean by new generic modeling? You can update parameter values, you could update the dosimetry, there are some things that you could keep the same sort of calculation but make it

more recent and add in the radionuclides you want. That would be a step in the more risk informed direction or at least using more modern information that we may have.

Then the next level down below that, we could do something like revise the tables to add new radionuclides and maybe do new generic modeling. So NRC would still be doing the modeling in this case and we would still develop a table, but it might be a more sophisticated table, okay? So I put a 3-D table here, that would be wonderful, right? The code of Federal regulations would probably crash if we said we wanted a 3-D table put in it. But we could take a 3-D table and make it two-dimensional in the document.

And what do I mean by that? So that would mean, like, well, maybe a facility you could have depth and lifetime of an intruder barrier, for instance. If you analyzed -- did this inverse calculation with updated information and you said, well, two main variables I want people to be able to account for at their facility would be how deep they're going to put it and how much effort they want to put into their intruder barrier. That could result in different concentrations that they could be allowed depending on how deep they put their waste and what

sort of barrier they put in.

You know, and this is starting to move away from keeping it simple. You know, you want to make it as simple as possible but no simpler. And it would provide more flexibility though, but sometimes flexibility can come at a cost. It would be more effort and it would be more complicated.

And then at the bottom something that we've talked about quite a bit would be whether there would be merit to go to a site specific waste classification approach. That's what's done in DOE, that's what's done in a lot of international countries. That would give a great deal of flexibility to determining what waste can go where. It would be also, correspondingly, a lot of extra effort because you'd essentially be doing this calculation at each site, needing to review it, needing to get stakeholders to agree to it. It would be a lot more effort.

So what are so pros and cons of increasing site-specificity for waste classification? Well, some pros would be that it would be more risk informed. I recognize that some people believe that looking at the intruder and the disturbance of the material is not risk to begin with, but I believe that depends on the

waste that you're dealing with and how long it's going to persist. It's very difficult for us in our short experience to translate that into these very long time frames. And human behavior over very long time frames gets more and more uncertain. So you have to be practical and understanding of that uncertainty and develop some approach in your regulation and guidance, et cetera that accounts for that.

So the pros would be risk informed greater flexibility. It would align the site actions more directionally with decreasing stakeholder risk. So in the system now where the waste concentrations are basically hardwired and they're applied the same for all sites. As long as they accept waste that meets those concentrations, there's no incentive for them to necessarily do something else for that waste. There may be for Section 61.41 to show that they can meet the Section 61.41 performance objective, but there's no direct incentive for them to align their calculation more with affecting the stakeholders' risk at their site.

If you go to one of these more detailed approaches that I had on the previous slide at the bottom here, I think those would more directly align the action that you're taking with maybe some risk;

and it would be more consistent with what's going on in the international community.

So cons would be that the effort is definitely going to be larger and you're going to need more regulatory oversight because you're essentially handing off part of the calculation from the regulator that goes through the rulemaking process and subject to public comment to the licensing process performed by the licensee and reviewed by the regulator. So that puts more burden on the regulator to review those calculations and make sure they were done appropriately.

It could possibly increase stakeholder confusion. And what I say by this is if you go to let's say a waste acceptance approach; you could end up with a concentration at one site that might be significantly lower or higher than the concentration at another site. So the stakeholders at one site will say, hey, but they accept waste that's at a much lower concentration than what you're accepting here for me; why are you exposing me to this more hazardous material? And so we would have to -- NRC and the other stakeholders that would be using this effort with more approach, would have to be able to communicate what this means and how it's working for

them and why they are still protected.

And then you also run the risk of revisions. So if somebody -- even if you consider well, NRC has the risk of revision right now, because we did the calculation, we may revise it, some concentrations may be higher, some concentrations may be lower. But if you go to a site specific DOE-like WAC approach, the site does the calculation, they may do a calculation, everybody reviews and approves it and then they get some new information sometime down the line, new measurements for something they thought they knew very well, and it changes their calculation and then changes the concentrations that they could accept. So that would be a challenge with going to a WAC approach.

Also I would acknowledge that in the commercial realm where you have businesses that are competing, that may be a different scenario than say in the DOE world where they have -- they use the WAC approach but the disposal sites aren't really competing with each other; they're just trying to best put the waste where it needs to go. But in the real world you have businesses competing; you can have all these human effects. Like a site develops a waste concentration limit for a particular nuclide which

allows them to take a waste. Another site is at a lower limit because of the characteristics of their site. They may have an incentive to say, well, how can we get our limit in better alignment with this site over here, when maybe it's not justified.

So in the real world I think there could be complications and unintended consequences from going to some of the more complex approaches. But hey, we're here for you and we'd like to hear your feedback on what you think is appropriate. And this can range from the existing system is just fine to scrap the whole idea of waste classification or any of the alternatives that I presented in between. So I thank you for your attention.

DR. LEE: Hi, good afternoon. My name is Mike Lee, I'm with FSME. First of all let me get the record straight, I got Dave's title wrong on the slide. So I'll take the caning later.

Anyway, I'm here to talk about the Big C, which Larry referred to earlier. And I need to just dispel one rumor, the Big C doesn't refer to Larry, it's shorthand for the comprehensive revision option to Part 61. Even so, Larry is still the Big C.

That being said, Jim, you get the continuing education credits for getting the history

of low-level waste right, so we'll work out exactly how many credits you get later on after the meeting. I'd like to acknowledge also Howard Larson. He worked on the NUREG as well and it was a lot of fun working with him and Mike Ryan, and it was just an interesting task to take on. The committee was preparing to review the strategic assessment that Jim Kennedy and Jim Shaffner and Mike Tokar were putting together, so the charge from Dr. Ryan was he didn't understand how we got to where we are today. So that was kind of the motivation behind the development of the document.

As Jim pointed out, when Part 61 was developed there really wasn't a knowledge base to work from. RCRA didn't exist. The operating disposal sites weren't performing very well. There was little international experience in waste management. And then you fast forward to today, you know, 30, 31 years later whatever, maybe 40 years later, there is a lot of experience in risk management. We're not starting with -- for those of you who might be Latin students from parochial school, there's a term "tabula rasa," which means a blank slate. And the Big C is not intended to refer to a blank slate, it's intended to say today -- or to suggest to you folks, our stakeholders and other interested members of the

public if we were to start over today, knowing what we know about waste management of a variety of different types, how would we develop a low-level waste regulation?

So starting from scratch might not the be the best choice of words, but it's essentially if we were to take what we know today, how would we redo a commercial low-level waste regulation in the United States? And the answer in many respects depends on what types of waste streams we intend to manage. And that kind of leads to the next slide.

If you go to appendix A in NUREG-1853, I think, in the low-level risk white paper there's a review of the historical development of definitions for the various radioactive waste classes. And we know that low-level waste is not certain things but what we do know is that commercial low-level waste is Part 61 light waste I can kind of refer to as the classic 36 waste streams, 24 radionuclides that were identified in the EIS work. From the recent LES decision-making, we are reminded that according to Section 61.55(a)(6), if it's not listed in table 1 or table 2, it's Class-A low-level waste. This can also include low activity waste.

And as Larry alluded to earlier, there is

an initiative under way right now to develop a reprocessing regulation. It's currently referred to as 71X, and over time we're going to get more direction from the Commission on that. But it's very likely that there will be some commercial reprocessing streams out of a SNF reprocessing facility that would be low-level waste like.

So when you think about the low-level waste regulation and any comprehensive revision thereto, we have to ask ourselves a couple of questions, one of which are we going to still be focused on those waste streams that are amenable to disposal in a near-surface environment, or should we also include those waste streams that might be amenable to disposal or management in an intermediate depth environment?

If you go to the EIS for Part 61 as well as some other references in Federal Register notices, perhaps, I think one is greater than Class-C waste. I don't recall the exact citations, but you could begin to connect the dots and see that the regulation is intended initially for shallow land disposal, but there's also a reserve provision for other types of disposal remedies, if you will, for low-level waste.

Larry pointed out earlier; there was a

de minimis provision in the Commission's charge when it first developed Part 61. Should we revisit that charge once again? Is it appropriate if you are going to be risk informed performance based, should we go back and visit that aspect of the framework, if you will, for the management of this class of wastes?

And the other question, of course, is how much specificity should be in the regulations? Where the Commission's PRA Policy Statement was driving the staff to work on risk-informed performance based approaches to regulation, which places an emphasis typically on some overall system performance objective with less specificity on how you get there. The Commission of course has historically supported the defense-in-depth-concept. Should we still retain those features of the new regulation, should there be one? So these are things just to think about for the future. And these are things, of course, we like to hear from the public and our stakeholders on.

That being said, when we think about a risk-informed/performance-based approach, the staff suggests that there may be some types of activities you would have to reengage in terms of the development of any new rule that we're basically starting from scratch on. One of which is we have to resurvey, if

you will, the waste generators. What kind of waste streams are we going to be managed and in what context would we manage them?

It's very likely that we'd undertake another generic performance assessment for some generic site that we think might be appropriate for how these wastes would be managed. We're not sure if it would be geographically an eastern U.S. or a western U.S. environment, we could, you know, hypothetically do two PAs. Again, this is something that we'd like to hear some feedback from members of the public on.

We're likely to have to do an updated environmental analysis consistent with NEPA to the extent that we're dealing with new waste streams. We think it's also appropriate to kind of evaluate the literature and talk to generators and managers on what the current engineering practices are and for the management of these waste streams. And then of course there's a need to reconsider what guidance needs to be considered and updated.

So in kind of a nutshell, that's what we would like to hear from folks on, if not now in the future, with regard to this particular option. So thank you.

So now Boby is on deck.

MR. CAMERON: For those people who are on the phones who might not have the benefit of the new agenda, I just want to assure you that it still is Friday here in Phoenix and we have four more presentations to go and we have Boby is going to start. And we're going to try to get done by 3:10.

DR. EID: Good afternoon.

One of the options I would like to talk about which is in SECY-10-165 is the alignment with IAEA standards. At the beginning we said international, but international is broad, so try to focus in this presentation about IAEA standards. This topic is much broader than what was discussed before because there are other areas of overlap and harmonization that we need to think about.

I will try to cover briefly, because we do not have much time, about the radioactive waste classification system was already mentioned, but I want to go through it very fast. And then, of course, I will introduce you to the IAEA waste classification system. And then you can compare -- I established a simplified chart that anybody could take a look and try to compare to see, okay, what is there, what is in common? And then I will try to address comparison of

IAEA safety to the Part 61 safety criteria. A safety criterion for the NRC is very important. They want to see whether are we harmonized or not. And then I will talk about international alignment and harmonization issues in generic sense hopefully, it may come to our recommendation to leave it to you just to think about. It's not a recommendation for us to adopt, but those are areas for you; we'd like to hear from you what you think about it.

I would like to go briefly and very fast about first the radioactive waste classification system in a generic sense; I cannot cover everything. But as you can see it is based on fuel cycle waste and non-fuel cycle waste. And under fuel cycle waste you have the uranium and mill-tailings, low-level waste, transuranic, high-level waste, spent fuel. Under non-fuel waste you have the NORM and the accelerated produced material. But if you can see here on this graph, that would be focused on the low-level waste which is coming here under NRC waste classification system. We have greater than Class C, Class C, Class B, and Class A. So that's our focus today. Just focus on this, so when I try to make the comparison you will understand.

I will not discuss this in detail because

it was mentioned in yesterday's workshop and also today by Jim Kennedy. However, the waste classification is based essentially on the two Section 61.55 tables, Tables 1 and 2. And these two tables, they are the long-lived radionuclides and the short-lived radionuclides. And the Class A as you see here is from other waste classes. Class B waste must meet a more rigorous requirement on waste form to ensure stability. Class C waste must meet more rigorous requirement to ensure stability and requires additional measures to protect against inadvertent intrusion. Class A, B, and C, and greater than Class C are stabilized, indirect determination of concentration is acceptable. And the acceptable to average concentration over volume of waste, which that's where it came, the average concentration.

Now, in this table I will not go through everything single RAD unit. This is the long-loved radionuclide table. Just look at the footnote below the table, that's more important.

So those are the numbers in the table for the long-lived radionuclides. And if the concentration is less than .1 of what is indicated in this table, the waste is Class A. If concentration is larger than .1 but less than what is in the table, so

it is Class C. So if the concentration is larger than what is in this table, it is greater than Class C. So that is the first basis.

The second table is the short-lived radionuclides. Again, I will not go through all of those numbers. Focus on the footnote below. If the concentration does not exceed column 1, the waste is Class A. if the concentration is larger than column 1 and less than column 2, it is Class B. And if the concentration is larger than column 2 and less than column 3, Class C. And if it is above, it is greater than Class C and it is not appropriate for near surface disposal.

Now, having this in mind immediately if you look at the IAEA waste classification table, okay, if you look at this figure, you will find on this axis, the X-axis, the half-life. And you will look at this axis is the activity concentration. The activity concentration in this case is ambiguous, because it could be a concentration of unit weight or unit volume or it could be total active. So they're listed just like that. And the half-life is very clear and as you can see here, there are lines. And the IAEA have something in mind by what they mean by short half-life or other kinds of things. So I want you to

concentrate on those classes.

So based on this -- so they have the high-level waste -- and by the way, as Larry mentioned, the intent of waste classification by IAEA is management of waste in order for disposal. So under each category, you will find high-level waste, where it's intended to be disposed and deep geological disposal.

Then what they have intermediate-level waste, which we do not have and then I will talk about. And this is to be disposed in what is called an intermediate level. And yesterday we explained what is meant by near-surface disposal and we said at the depth of less than 30 meters because IAEA, they recognize this depth and they say more than 30 meters, down to 300 meters it is considered intermediate-level waste.

And then they have the low-level waste. This is what we are talking about, the low-level waste. And the low-level waste here corresponds to our low-level waste where we have GTCC and LLW Classes A, B, and C.

Then on this side here we have the very short-lived waste and this is intended for decay and storage, this kind of waste. Because you could manage this waste by decay and storage, it does not need

disposal. And the half-life for decay is very short, rated from hours or a few days. And for IA, they could go to about a few years; this means one to three years.

Now, the very low-level waste is intended to be disposed in a landfill, which currently, again, there is an issue in the United States; we do not have this kind of category of waste.

And below they said, well, this is not called waste, you call it exempt waste and they call it sometimes clearance. So keep in mind what IA waste classification.

This table is established just to simplify it and to capture exactly for comparative purposes. On the left side is the IAEA waste classification, on the right side is the current USA commercial waste classification. High-level waste and high-level waste are more or less similar, and we agree on those.

Now, if we look at low-level waste on the right side. In the United States, look at the right side, those are the categories I talked about. It includes GTCC, Class C, Class B, and Class A. In our case, we say the means of disposal for GTCC, it is not appropriate near-surface disposal for the GTCC and we leave it at that. And we say, but it is low-level

waste. However, we say, okay, this is low-level waste for near-surface disposal.

In the IAEA system, if you look here, you see that the categories they have are immediate- level waste, it is not low-level waste. And then they have one category of low-level waste is called low-level waste. And that's something to keep in mind when we compare. And then I will come to talk about more elaboration in terms of harmonization.

Below you can see that they have very low-level waste and the very low-level waste somehow corresponds to the EPA ANPR. If somebody remembers that was popular, I believe, in '03. And there it was intended to categorize what is called low-activity waste. This was intended for disposal in the landfill. So far we do not have option of this category, but we thought about it and the question is if we need to harmonize, do we need to think about this? Already we have IA waste classification system.

Then what we have is decay in storage. Decay in storage, of course it is true that when you have the decay of the material it is gone, so it is not really waste. And the question is you cannot keep the material for one to three years. However, in our C currently, decay in storage, our practice is 90 to

120 days for decay and storage. Can you expand that and call it this other category so you can minimize the volume of waste now to be disposed?

Then the last one, which it was mentioned before that we have the proposed rule for clearance for the NRC. Again, the clearance is being built on a case by case basis and this is called exempt or clearance waste by the IAEA. So with this here, you can really capture the picture, the comparison, between IAEA and NRC and to see where are the things they are missing, where are the things that we need to deal with, types of waste categories, and where is the overlap and what do we need to do about it.

Here now, I'll try to go through very fast the CFR safety requirements, because when you compare you want to compare as well the safety requirements; what are the basis for the safety requirements? So I will not go through this or it was -- it was talked about by Kennedy and others yesterday. Those are, again, the safety requirements and the intruder dose and so on. I will not talk about it.

Now, the IAEA low-level waste safety requirements. IAEA, they publish their safety requirements under SSR-5; a specific safety requirement. It used to be called it DSE-54 and it

has been published recently in late 2010. What is the requirement? And also I would like to emphasize that the requirement for IAEA is more important than the standard. The standard could be like a guide, this is a requirement; it is compliance.

So what we have here it is somehow comparable to our current dose criteria. We have the dose criteria to members of the public .3 millisieverts, which is 30 millirem. And we are talking about .5, so we are close, we are not that far away.

Now, the inadvertent human intrusion; what kind of criteria do they have? The IAEA tried to be smart, they said well, we're not going to give criteria, we'd like to give optimization. So what they said is if the dose based on the intruder evaluation and assessment, it is 1 millisievert, which is 100 millirem, which is our public dose criteria, so it is fine, you do not need to do more optimization. So it is acceptable and you do not need to do anything more.

If the dose is 100 to 20 millisieverts, which is 2 millirems in this case, okay, well, you need to do some optimization. So that's their upper limit in terms of the intruder dose.

If it is above 20 millisieverts, forget about it, the site is not appropriate for low-level waste disposal.

Now, the other criteria for IAEA it is important and the issue we are dealing with, the issue of uncertainties and the issue of the performance period. What they have for the issue of uncertainties, I will read it for you. Uncertainties associated with this, this is the dose criteria, estimates will increase for time further into the future. Caution is to be exercised in applying criteria for periods far into the future. Beyond such time scales and uncertainties associated with those estimates become so large that the criteria might no longer serve as a reasonable basis for decision making.

And the other point regarding the period of performance, the disposal facility shall be sited, designed, and operated to provide features that are aimed at isolation of the radioactive waste from people and from the accessible biosphere. The features shall aim to provide isolation of for several hundreds of years for short-lived waste and at least several thousand years for intermediate and high-level waste.

And what they meant by intermediate and

high-level waste, when you are talking about long-live radionuclides; that is really what is meant.

So the issues pertaining to international alignment and harmonization, those are the following issues that I would like to summarize. And this will be open for discussion.

First, in the United States intermediate level waste is not defined and intermediate disposal requirement does not exist for commercial radioactive waste. Under the IAEA system GTCC waste might be classified as intermediate-level waste. In the U.S. it is classified as low-level waste and is suitable for near surface disposal.

IAEA has only one low-level waste for near surface disposal whereas NRC has three classes, A, B, and C. They show one low-level waste class may need explored or thought about.

IAEA very low-level waste category is comparable to the waste described in the EPA's ANPR. And as Jim Kennedy mentioned, Section 20.2012 could be too.

And IAEA very short-lived waste can be compared with low-level waste stored for decay on site. And this is currently dealt on a case by case basis. IAEA exempt waste can be compared with waste

categories under disposition of solid material, commonly known as clearance. The clearance is conducted currently on a case by case basis.

Other international issues that maybe we need to think about is retrievability and reversibility; performance period we talked about; recycling and categorization of waste, whether waste can be as a resource or it can be considered as a waste; how to address climate change; decision making and uncertainties; stakeholders' inputs; institutional controls; safety criteria for intruder protection; and a graded approach and safety goals. So those are the other areas that overlap with international issues.

Thank you.

MR. CAMERON: Okay. Thank you very much, Boby.

And we have Greg Suber coming up to the podium now and he's going to speak to the use of site-specific waste acceptance criteria. And then he's going to stay up there and address status quo and path forward. And then Larry is going to wrap it up for us with some closing remarks for this session. We're going to take a short break; we're going to come back for discussion with all of you in the room and with those of you on the phone.

And when we go for a break, I'd like to talk with the people on the phone to see if we have anybody added from this morning. That will help us when we get to the discussion.

This is Greg Suber.

MR. SUBER: Thank you, Chip. My name is Gregory Suber and I am the chief of the low-level waste branch at the NRC.

The first thing I would like to do is clear up one small oversight. I thank Bill Levitan for congratulating Mike Lee on putting this together, but we also had significant help from Marty Letourneau. And so I think he should be recognized as well.

Mike Lee also helped me with my presentation, so I have to give him credit for that. He also helped me with my talking points.

So I would like to begin. One score and 19 years ago, our regulatory fathers did set forth the proposition that all low-level waste regulatory structures should be created for the people and by the people for the purpose of human health and safety. Now, we are in the midst of a civil war to determine if such a regulatory constructive, so conceived in liberty could --

Wait a minute, Mike, so conceived in liberty could long -- Isn't this the Gettysburg Address?

That was my vain attempt at humor. No, I think I'll scratch that one.

So like I said, I'm going to do the waste acceptance criteria presentation. And much of this has already been touched upon in the other presentations. So I'm going to probably move kind of fast here and try to get us back on schedule.

With respect to the background the only thing that I think I would like to state and make a clarification of is that when the waste types were conceived originally in Part 61, there were a couple of things that weren't considered. In one of them, one of the implicit assumptions was that DOE waste would not be disposed of in commercial landfills. And so we know that that's no longer reflective of the reality of the situation that we live in.

There was also an assumption that there wouldn't be a large quantity of waste with -- long-lived radioactive waste with long half-lives. And we know that both of those don't reflect reality. So in changing Part 61 and in revising Part 61 to reflect reality, one of the considerations that the staff has

is to adopt the waste acceptance criteria.

The first step in accepting the waste acceptance criteria would be eliminating the tables that have been referred to several times in Section 61.55. I'm not going to go back again and talk about how these tables were constructed, but they're very prescriptive and what a WAC approach would do -- and I'm not saying WAC in a negative context -- but what a WAC approach would do is it would get rid of those tables and allow the sites to conduct a performance assessment to determine what type of waste the site was capable of accepting. There would still be a requirement for an inadvertent intruder analysis and the site would still have to meet the performance objectives for Part 61, Subpart C and also there would be a requirement to perform periodic updates of your performance assessments.

Some of the benefits of the system are that a waste acceptance criteria would increase the flexibility of the facility to integrate site characteristics, engineered features, and modern operational practices when the site was developing its disposal strategies. It would also allow the site to represent the disposal options in a more, as we said, risk informed and performance based approach, which is

clearly more focused on the actual hazard produced by the waste, as opposed to what class the waste is in.

The main challenges to implementing this regulatory scheme is number one, it's well institutionalized. As we've said before, the current infrastructure has been in place for over 30 years and all of the existing and operating sites, low-level waste dispose sites are in Agreement States. All of these states have promulgated rules and regulations in a regulatory framework to manage these sites and to regulate these sites. And any change that we would propose to the structure may adversely impact the regulatory schemes in these states.

Also, there's a potential that some waste might be offered as a result of the development of a waste acceptance criteria that eliminates that particular waste from being disposed of safely in that site. And so those are possible challenges that we would face if we adopt the waste acceptance criteria approach.

And briefly I'm going to go over the last option that we had in our paper, and this option was basically to maintain the status quo. And Larry Camper already went over this briefly, and I'm just going to go over it in not very much more detail.

The first thing that this option would do is preclude the staff from revising the waste classification tables that the Commission recommended that the staff undertake. Under this option, we would not revise the waste classification tables and we would maintain the regulatory framework essentially the way it is, with the exception that the ongoing rulemaking would go forth. And this rulemaking would do a couple of things. One of which it would introduce the requirement for a performance assessment, and it would also introduce an explicit requirement for dose assessment to protect the inadvertent intruder.

So that's the end of my presentation. I'll give it over to Larry Camper.

MR. CAMPER: Thank you, Greg. Thanks to all my staff for the presentations. Can you imagine trying to provide adult supervision to that crowd? They're fun.

Just a couple of remarks quickly. A lot of material; I apologize for that. You've sat here for a very long time and you've been patient, so we thank you for that. You're going to have an opportunity to talk to us when we come back. I know some of my staff had to speed their presentation up a

little bit. It' always tough when you're doing that, but I appreciate that.

But as you can see on the slide just a couple of things: We are seeking feedback from the public. There is a Federal Register notice that was put out; I think it was actually February the 28th, where it talks about this effort that's ongoing. This meeting is being transcribed. We have an internet webinar connection. We have the telephone call-in, of course; we thank everyone out there listening and taking part. And last but not least, you see where to send written documents -- written comments, rather. There's a docket identified as NRC-2011-0043. I'll repeat that for those listening in, its ID is NRC-2011-0043. That's the docket number assigned to this particular regulatory effort.

So we want those comments and, again, thank you for your patience and for letting us share all this information with you. But we thought it was important to get everybody on a level playing field at this point in time so you can fully understand the challenge that we're facing. Thank you.

MR. CAMERON: Thanks, Larry and thank you to all the NRC staff.

And we're a little bit ahead of time,

which is amazing but we're a little bit ahead of time. And I have a little bit before 3:00. Why don't we take about -- you've been sitting a long time, why don't we take 20 plus minutes and come back here at 20 after 3:00.

And I'd like to just ask the folks on the phones -- I'd like to find out if there's anybody new on the phone from this morning so that will make it easier when we go to the discussion period.

(Recess)

MR. CAMERON: I'm going to ask the NRC staff that spoke to come up to the table to answer questions and respond to comments. And then when we go to the panel discussion, we're going to ask Marty and his colleagues to join the NRC staff at the table. But right now we're going to focus on the NRC issues.

And you heard Larry and Greg Suber and Dave Esh and Boby, all of them, talk about various alternatives that they're thinking about. And Larry I think mentioned we're starting with a clean slate. Yesterday afternoon in the Waste Management Symposia Session, there were a couple of thoughts thrown out that we should just do away with the classification tables. I think Mike Ryan was pretty provocative about that.

We heard a lot of things about the Agreement State program, and I'm sending Leif (Eriksson) and Rusty Lundberg out to have a beer together. But no, this was another issue that came up. And we also heard from Lisa Edwards about the use of Section 61.58, and I know that some people in this audience had been thinking of something similar to that.

So we're going to go to our discussion now and what I'm going to do is go to Lisa Edwards first. It's not only relevant, but she also has to catch a plane, and then I'm going go to John Greeves.

Lisa.

MS. EDWARDS: Thank you very much. Let me first of all thank the panel members. I really appreciate the forum and you've given me a lot of food for thought and I appreciate the multiple perspectives.

I really have two major points that I want to make just so that it's on the record. From the research that we've done at EPRI I'd like you to consider in the process that you use for both Part 61 and the BTP the concepts of reasonableness and reflective. And what I mean by reflective is we look at the baseline assumptions that are contained for

things like what's the volume of waste that was going to be disposed of? What are the activities that were assumed in that waste? What are the specific attributes of -- site specific attributes of the various disposal facilities and how do they compare to the assumptions and the Part 61 EIS? How do engineered barriers and the protection that they may or may not offer factor into the concentration limits that are derived? And had an update of the dose conversion factors so that they reflect the more current science that we know of.

So in our process I would like us to be reflective and that means that the assumptions contained in the rule would be reflective of current practices.

The second part of that is reasonableness. And what I mean by is that is first of all with intruder scenarios. But a task lies before us to not have a limitless supply of intruder scenarios but rather construct a series of intruder scenarios that are well defined and bounded in the types of reasonable types of intruders that we could expect. And within reasonable, I mean representative and not necessarily bounding.

I do think it's important that we

understand that the bounding cases of the most fantastic intruder that could exist. I'm not sure that our decisions should be based upon that and rather they should, I would suggest, be based upon a reasonable intruder.

There should be a recognition of intruder barriers. In other words, there should be some barriers that recognize present unaware intrusion into a waste form for a specified period of time.

I would challenge the assumption of the 100 years as the right time frame to consider the initial intruder at. And kind of in line with that, a reconsideration of the length of institutional controls. We are on the low side of institutional controls compared to what the international community does. I think we need to understand why that's appropriate today.

And finally there's security. And right now, I think we've considered safety in the original rulemaking, but security is certainly part of our lives now and is not currently contained.

The second larger point I'd like to make is acceptableness. So in my kind of simplified picture of rulemaking, I think the science digs ditches that go on either side of the road and perhaps

the road is the practical implementation aspects. And finally, once you have the ditches dug and the road laid that hopefully isn't full of potholes, you have to consider what's acceptable.

And sometimes when we think of the word "acceptable," we might jump to the conclusion that I'm only referring to stakeholders that would have heightened level of concern that would only drive us in a more conservative direction, but I would offer to you that the concept of acceptableness goes in the other direction as well. If we dig these ditches with our science and we lay a road that considers practical implementation, then we wind up with a rule that orphans sealed sources. In other words, we get a result that doesn't allow for the responsible disposal of sealed sources; is that an acceptable outcome? And I think not.

We need to balance protecting the interest of some envisioned or really potential future intruder against real-life risks that are posed in today's world.

And finally, I think we have a higher calling here to serve the public interest. I've heard it referred to many times and I think that our work is not done until we have protective disposal available

for all low-level waste streams, including greater than Class C and sealed sources.

Thanks for the time.

MR. CAMERON: Thank you very much, Lisa.

I know we're going to be talking a lot about these concepts that Lisa brought up. I just want to check in with Larry and his colleagues here. you're getting some suggestions now about how to do this and without going into everything in detail, at this juncture are there some high-level thoughts that you'd like to respond to Lisa with?

MR. CAMPER: Well, yeah. Thank you, Lisa, by the way, for your comments.

Some of what Lisa brought up came up yesterday during the earlier Waste Management Symposium topical workshop. It also came up last week during the NRC workshop on the concentration averaging of BTP.

I mean, what we're really hearing is questioning some of the scenarios that have been used in the past. They may be overly conservative; they may not be truly realistic. Certainly, 30 years plus now of operating history shows us that many of the fundamental assumptions in the environmental impact statement are remarkably different than what reality

is today. So I would simply, without getting into it more deeply, say, yes, you make very good points about the need to reexamine some of the existing baseline assumptions and the approach that is used.

MR. CAMERON: Okay. Thanks, Larry.

John, did you want to talk to us?

MR. GREEVES: What I'd like to do -- and Chip asked us to be succinct and clear. And what I'd like to do is be a little bit provocative in my own right.

Jim Lieberman and I wrote a paper. It's on the back table; I think everybody at the front desk is familiar with it.

And the staff talks about a limited rulemaking and a comprehensive rulemaking. This meeting is about a comprehensive rulemaking. However, we wrote that paper before we saw your list of options and, in fact, talked to many people about it. And Larry, last September, labeled the approach the (so-called) "Grieberman" approach.

So my question here -- or my comment is it isn't quite any of the five options that you have in the paper that we're talking about today, it's maybe a combination of two of them. And so just naming two of the things that we've stressed, being requiring site-

specific performance assessment for all, and I repeat the word "all," waste streams, not just DU and blending. So the approach we identified is to do that in the limited rulemaking; do it all. And I don't think I have total clarity on what the limited rulemaking is doing, but I'm being real clear on what I would recommend that it do.

The second one -- and these are the only two I'm going to mention, the paper has more -- is provide explicit language to allow for a site-specific performance assessment to override the tables, which would be retained in Part 61. The limited rulemaking isn't addressing the tables.

So what I come out of that with is a question, can the staff consider that approach, the Grieberman approach in the limited rulemaking? And I would assert that it's consistent with the Commission direction in the 2000 Savannah River Site decision on waste-incidental-to-reprocessing. It's also consistent with the West Valley policy statement on decommissioning, it's also consistent with the National Defense Authorization Act, Section 3116 legislation.

So I leave you with that question, can you take those recommendations in the paper that we

provided, use them in the limited rulemaking? And if that's the case, you don't need to spend the money 10 to 13 FTE equaling to $3 million to do a comprehensive rulemaking. You can get 90 percent of the way there with the limited rulemaking, just pushing it a little bit further.

So hopefully I've been clear. I'd be happy to answer any questions. But I would like to know either now or later whether you can take that approach on the limited rulemaking. And Jim, if I missed anything, feel free to correct me.

MR. CAMERON: Thank you, John.

And these suggestions that you're hearing are fair game for comment. Lisa's, John's, the sixth option, okay?

And I'm going to go over here to Tom Magette and then we're going to go over to that gentleman back there.

MR. MAGETTE: I'll use the handheld, then I can be like Chip and work the room.

I'm Tom Magette with Energy Solutions and I appreciate the opportunity to make these comments.

I'll start by saying I agree with what Lisa said. I think that if we are driven by the science and guided by the science, then we see that

there is an opportunity to make some changes to Part 61 that would be a real improvement for everybody concerned. Now, I won't repeat what she said, but improved dosimetry, better knowledge of waste streams, particularly the phantom four that she didn't mention today that she did mention yesterday, which is a real driver in the disposal world for completely artificial reasons. So there's some things to be fixed there.

But what I'd, rather than go through what I think they all are, what I'd rather focus a little bit on why. A little bit of justification, because I know you're still looking at, you know, what do you do, how far do you do, how do you justify doing it?

In David's presentation he mentioned some of the pros and cons. Certainly, he made some legitimate points. Unfortunately what I hear on the con side from a lot of people is a different list. And I think there are a lot of bad reasons not to reform Part 61 that are floating around. The states won't be able implement this. These tables and this regulation are built into statutes. Generators aren't used to it. It kind of adds up to it's too hard.

I personally don't think it's too hard for us to make some solid science based improvements. One of the last and, I think, most misleading is that it's

too hard because we have this notion that we have these tables, if you comply with the tables everything is okay.

Well, that's not true. You're doing a rulemaking already right now because the waste that we want to dispose of that complies with the tables isn't okay, maybe. Or you want to see more analysis to demonstrate that it's okay.

Admittedly, there are some complications like the depleted uranium waste stream, the blended wastes, no new isotopes, the same waste that's been coming out of the power plants for 30, 40 years. And yet we're going to have to do a site specific performance assessment to evaluate disposing of those.

So the tables aren't okay; they don't give us the answer. We're doing performance assessments anyway. All two, otherwise known as both, of the sites that have been licensed since Part 61 was put in place are doing this, so we're not talking about an overwhelming regulatory burden.

And I think that's another point. You know, we looked at an analogy of the revisions to Part 50 yesterday and one might suggest that, you know, what we're talking about is going in the other direction; Part 50 needed to be made simpler so you

could have a more reasonable licensing basis for power plants and this is making it harder.

I don't think it's making it harder. I think maybe people don't realize what we have to do to implement Part 61 in the BTP. We have a full branch of our organization, eight to ten people, whose full-time job as engineers is working with generators to see if this waste can come in the site. Every day of the week that's their job. So this is not like, check a box, send it to Clive.

So I would submit that this is not an increased regulatory burden, because we are already doing it and because there are a lot of burdens that go unappreciated in the existing system.

And finally, I would say a site specific approach is absolutely, entirely appropriate. I've spent the majority of my career licensing a variety of facilities, particularly power plants and transmission lines. I can't tell you if an emission from a power plant is going to comply with the Clean Air Act unless I know where it is.

It may be okay to have a once-through cooling system on Calvert Cliff sitting on the Chesapeake Bay, but I don't think it would work real well in the middle of the Arizona desert for Palo

Verde. So, you know, you simply can't have a "hey, if you make it like this it's okay" in most other regulatory schemes that seek to protect human health and safety in the environment.

So I don't think it's anything unreasonable that you would be imposing on the industry if you did this. I don't think it's anything more than we're going have to do anyway and are already doing anyway, nor do I think it would necessarily be greater than the burden that we have today.

So in sum, I think you have a really strongly profound justification for modifying and updating Part 61. Thank you.

MR. CAMERON: Okay. Thank you, Tom. That was Tom Magette.

And we're going to go to this gentleman here and then were going to go over to Marty.

MR. GOLDSTON: I've never gone before Marty before.

MR. CAMERON: Do you want to try it?

MR. GOLDSTON: I'm going to try; it won't work, though.

I'm Sonny Goldston with Savannah River Nuclear Solutions. And I wanted -- I didn't realize

the comments this last gentleman was going to make; mine are very similar.

I was watching David's presentation and thought to myself the site-specific performance-based low-level waste disposal is what we do in South Carolina at the Savannah River site and I've been up in front of the Citizen's Advisory Board, other stakeholders, the South Carolina regulators, the EPA many times and explained to them what we do and how we do it and they have understood it completely. In fact, you can go and look at the CAB recommendations in the past and see that they repeated back to us clearly what we said we were doing, agreed with it, and agreed with our recommendations to go forward with different types of disposal. For example, moving low-level waste items that had lower concentrations out of our vaults and into trench disposal based on our site-specific performance assessment.

So I think it is time to revise Part 61 and I would recommend that you proceed on with that and not concern yourselves so much with the fact that it might be too complicated or complex for people to understand.

Also, I don't understand your tables so I think that's pretty complicated on its own. And I

remembered Mike Ryan's presentation yesterday where he was talking about concentration-based standards for low-level waste disposal was probably the wrong way to go, that you really need to understand the total quantities and the effect of those radionuclides and those total quantities on your site rather than a concentration.

So thank you.

MR. CAMERON: Thank you, Sonny. You did that well, before Marty. Marty.

MR. LETOURNEAU: Okay. What Tom meant to say --

MR. CAMPER: Let me just quickly. Tom's comments and then Sonny's as well.

I made this comment yesterday that one of the observations I made in the top of the workshop was there is probably more willingness, if that's the right term or even interest, in a significant revision to Part 61 than I might have imagined before we started this process. Now, we're early in the game and there are going to be lots of discussions in lots of places. And there are those who hold different sentiments about the existing waste classification scheme or the approach that we're hearing here.

But having said that, I would only repeat

what I said yesterday, I'm struck as I think is the staff, we're struck by the -- I think I referred to it yesterday as intellectual purism in terms of looking at 61 and being prepared to deal with it much more realistically, shall we say, than I might have thought before we started this process.

MR. LETOURNEAU: Well, now that Tom and Sonny went before me, I don't have to say the things that they said. But I agree completely with them on everything. Well, at least the things they said here today. And I say that as an intro because when I make some of my comments here, you are going to think I don't agree with them. No, I absolutely agree with them.

But I've been sitting over here listening to the presentations and I've been coming up with the thoughts that are going to make your skulls hurt and I wanted to throw some of those out, because you're going have to deal with them sooner or later and you shouldn't be scared of them.

But first just as a historical note, one of the other students of history has led me to believe that one of the primary reasons for creating the A, B, C classification system was to make things easy for the generators so that they could identify what they

had and, oh, this facility takes A, this facility takes B. And it was supposed to be an easy way for them to manage their waste. I think as Tom said and as we've experienced it's really not that easy and, in fact, a lot of work still goes into it.

So if that was one of the driving causes behind having that type of a classification system, maybe that's part of the initial analysis right now and determining that well, yeah, maybe that didn't work. Maybe that's one of the reasons that we can put forward for moving away from it.

Somebody had mentioned needing to do a NEPA analysis on this. And I started thinking about that, what would the NEPA analysis look like on this? It could look like the original EIS, it could look like what we ended up doing when we did our waste management PEIS and we actually looked at a generic facility of the same size and scope in different locations. And I started thinking about that and, you know, the NEPA document may be the place where you can begin to put down some new markers in this ground. If you wanted to try to establish a number other than 100 years, the NEPA document would be the place where you'd have to start. So if there is any thought about changing some of those societally-decided numbers,

it's going to have to be in the EIS; no question about it.

Avoid over-complexity. What you put in the regulation versus what you put in supporting guidance. Be careful to make sure we can keep it flexible. We've all learned a lot about things that we tied ourselves into with Part 61 that we should learn that lesson and going forward find ways to make dosimetry be something that can change over time.

Clearance; the below regulatory concern issue. We do have that. We have a release program. We have restricted release and unrestricted release. And it pretty much comports with the clearance or the very low-level categories on the IAEA system. We're using a similar site-specific analysis based on the 1 millirem the IAEA would suggest that you apply. And for a -- in most cases we end up with a restricted release, which means it's going to a landfill and it can only go to a landfill. Very little can meet the unrestricted release, which would mean that it could be used everywhere. But there certainly is precedent for that already.

One option. We all know that greater than Class C, that line between C and GTCC is a political hot potato. We all know that science wouldn't

necessarily support it, but if we had to go forward with something that would appease those who feel that line is important, maybe that line stays or maybe that line gets adjusted in where it's located. But we still have that concept of what's going to be called low-level waste without categories and limits would be based on site-specific performance assessment, but we still have that upper line that we say, you know, these things we still say are generally unacceptable for shallow land burial. That might make the whole thing more palatable.

Another thought about the PA approach. It really does require good knowledge of the volumes and types of waste, radionuclide content that you're going to be getting. If you're going to be doing a site-specific assessment, you've got to know what's going into the facility before you can get the source term and the radiation standard right. And it also means as soon as you get it done and approved, it will be wrong. Because as soon as you start -- the next barrel of waste you take will be different, maybe higher, maybe lower than what was in the PA. The PA will have to be updated over time to reflect those changes and, of course, at the end of the facility.

Related to that, it is very possible --

not only possible, very likely, that an existing facility here, the first time out when they are doing their PA they are going to find that things that would have been acceptable under the existing system may not be acceptable by their PA; either types of radionuclides or concentrations thereof.

That does not mean that they are not protective, that doesn't mean that they won't ultimately be able to show protection, it just means that PA is a graded and iterative process and you're going to go through it quite a few times before you work all the bugs out of it.

And, you know, this isn't a commercial for what we're doing on Saltstone, but a lot of what we're seeing on Saltstone at the DOE site is very similar in that I believe that facility is protective. I believe Barnwell is protective and I believe that Energy Solutions Clive facility is protected. But getting the PA to correctly and accurately represent how your system operates is still a tough thing to do.

And to that end, our tool for managing that is the PA maintenance plan. That is where we manage the uncertainty and the things that still need to be updated as you go forward. I would believe that any PA based system would have to have a PA

maintenance plan a as part of its regulatory regime.

MR. CAMERON: Thank you, Marty; very comprehensive.

We're going to go over to Scott Kirk at this point and then I want to check in with the people on the phones. And when we do that, I just want to ask Rusty also if he wants to give us some perspective of an agreement state who is going through this process right now.

But we're going to go to Scott, check in with people on the phones, and come back to Rusty.

Scott.

MR. KIRK: Yes, I'm Scott Kirk, Waste Control Specialists.

I think this whole workshop has just been fabulous. It's really opened my mind up to a lot of key issues. And I have two questions and, Larry, they're really for you. One is pretty direct and the other is more philosophical.

The first one is on your slides you were talking about the limited rulemaking for DU, and that's depleted uranium, and it had to do with the deterministic human intrusion calculations. Now, you mentioned that is going to be one of the requirements, but my question is how are we going to match that up

against a radiation protection standard?

Now, Part 20 is being revised. I think it was a 500 millirem recommendation I think when Part 61 was promulgated back in '80s, but if you have to have that limit right now, how do you reconcile that?

MR. CAMPER: Well, the 500 millirem dose limitation for the intruder was part of the analysis of the Part 61 in the draft EIS, but not in the final EIS. There is no dose standard today in Part 61 for the intruder.

What came out of the discussions during the course of public meetings around the DU rulemaking was a sense that there should be a codification of a dose limitation Part 61 for the intruder. The staff, we tended to agree with that. And one of the things we are going to address as part of that limited rulemaking is to incorporate a dose standard for the intruder in Part 61.

The fact that that might change over time because of some further adjustments to Part 20 is something that you would come back and revisit as you always do. I mean, any modifications to Part 20 -- the Commission is still evaluating what it wants to do about changing Part 20. Any changes to Part 20, as you know, takes a long time do and it may have some

trickle-down effects. It may have some need to make, you know, further adjustments in the regulations once Part 20 is adjusted.

So in terms of reconciling, I would say that the answer is that that is the number that was used before, there's been a general sentiment in the workshops that we've had that there should be a an incorporation of the dose limit to protect the intruder and that's the number that's been discussed.

MR. KIRK: And then my -- the other question, which is more philosophical. You know, I would agree that the current system has been well institutionalized, but the issue is really about harmonization. You know, as Letourneau pointed out, and others, is that some States have implemented these requirements completely different. Like in Texas there is a period of performance and it is 1,000 years or peak dose, whichever is longer. And that's a very high bar that we had to cross over.

There's also issues about waste at the very low end of the scale too, which would be the use of RCRA subtitle C facilities, and on what those dose limits should be. It's worked well in some parts of the country but not necessarily other parts of the country.

So I guess my question is, you know, when you -- as you've gone through these discussions and what you've learned, if you were king for a day, what do you think would need to be harmonized? What's worked and what hasn't worked and what are your views?

MR. CAMPER: Well, I'm certainly not the king for the day, the Commission is the king for the day, for every day for that matter.

Just a couple of observations. It's very clear to me -- and this is just my personal view -- it's very clear to me that many of the assumptions that were set forth in this environmental impact statement for Part 61 clearly do not reflect reality today based on 30 years of operating experience.

I mean, the manner in which waste is disposed of today in the low-level waste facilities is remarkably different than what was envisioned within that environmental impact statement. And it strikes me, therefore, that the industry and the public at large would be better served by having an updated -- excuse me, a new. You can't update it, it's too old. A new environmental impact statement that reflects the reality of the disposal of low-level waste in the United States. So I think clearly that needs to be done.

I also think that while it is good for regulators to be conservative in order to protect public health and safety, I think most of us would agree that the linear non-threshold, for example, model is a conservative approach.

It's perfectly reasonable to be conservative; however, as has been pointed out by some of the other callers, you also have to be realistic. And one of the things that I have found very interesting in the last few days has been the discussion around the fact that the probability for the intruder is 1. It does happen. Is that realistic?

So I think the staff needs to go back and take a look at some of these assumptions and ask ourselves what realisms are we bringing to bear?

One more comment on the period of performance. I have been working with the staff just recently as we go about developing the unique waste streams rulemaking. And one of the things we're going to do in that rulemaking is to specify a period of performance for the unique waste streams rulemaking, which includes depleted uranium. As was pointed out yesterday, I think it was Matt Kozak, that's a challenge. Depleted uranium is an interesting and

challenging and unique isotope.

But we are going to propose a period of performance. I'm not at liberty to say what it's going to be at this point because we have not, you know, vetted this with the Commission yet. But there will be a period of performance in the proposed rule and we will be soliciting comment on that period of performance. And I think it's going to be a very interesting opportunity for members of the public to react to what we are proposing for a period of performance. As you know, there is no period of performance specified in Part 61 today.

So there will be one for the unique waste streams rulemaking. How broad the unique waste streams rulemaking ends up being, getting back to John's comment earlier and Jim Lieberman and John Greeves' letter. We have a working group that's looking at that. And one of the things that working group will ask itself is should there be a more broad application, i.e., capturing all radionuclides and not just so-called unique waste stream. But we'll see what the working group comes up with.

MR. CAMERON: Okay. Thanks, Larry.

Let me check in with all of you on the phones. Does many anybody have a comment or a

question out there?

MR. DUNNING: This is Dirk from Oregon. I do.

MR. CAMERON: Okay, Dirk. Go ahead.

MR. DUNNING: Question: At this point are you still looking for alternative concepts and other important considerations as the rule development is perceived?

MR. CAMERON: Could someone mute their phone? Could you mute your phone? Someone who's talking about key working concepts. What's that? Oh, they might have their TV on? Well, mute your phone or turn your TV off, or both.

Dirk, I'm going to go to Larry. Did you get the question?

DR. LEE: Yeah, this is Mike Lee.

Consistent with option number two, one of the things that the staff would like to hear from stakeholders and other members the public on is do you have other views on how Part 61 might be revised other than the options that are laid out in the SECY paper or the existing approach to Part 61? So we welcome any and all suggestions.

MR. CAMERON: Okay. Dirk, any and all suggestions.

Anybody else on the phone have a suggestion or questions?

MR. DUNNING: I have one more.

MR. CAMERON: Okay, Dirk, go ahead.

MR. DUNNING: Yeah, and it regards -- and unfortunately, I had to step off for a time and so this may already have been addressed.

Have you discussed or have you begun discussion that included looking at some of the more recent studies on death associated with cardiovascular risk and death associated with stroke as well as changes in the dose reduction equivalence factor the EPA has made?

MR. CAMERON: Does that go to the Part 20 issues, Larry? Anybody want to try that from the NRC?

DR. EID: This is Boby.

Regarding the dosimetry for Part 61, as all of you know, the dosimetry is based on the ICRP-2. ICRP-2 has been there for a long time and the staff came with a paper to the Commission for actually revising or trying to look into Part 20 in order to be in harmony with the most recent one, ICRP-103.

And one of the areas, of course, the staff will look into how revising Part 20 will impact also other kinds of regulations and this will be addressed

in the SECY paper. So while we're revising Part 20 and if we revise, of course, Part 61, definitely the dose conversion factors will be taken into consideration.

We did consider also in other applications, for example in the commissioning, where we did allow based on the request of the licensee to use more advanced ICRP dose conversion factors. However, having said this, so the licensee should not take advantage of increasing the dose but they should be consistent. If they applied ICRP-103 or 60 or other ICRP dose conversion factors, they need to be consistent in all of their requirements for safety. So consistency is very important.

So I agree with, also Lisa raised that issue regarding the ICRP-2 and when it's going to be changed. This is one area, definitely I agree with her, that needs to be changed. So this is an area we need to look into.

MR. CAMPER: The only thing I would add to that is in the direction from the Commission with regards to SECY-08-147, that limited rulemaking, there was direction from the Commission to use updated approaches including modern ICRP approaches.

So there will be a modernization that

takes place bringing to bear a current ICRP methodology. That's point one.

Point two is, as we all know, you know, this is a continuum. You update Part 20, which takes a long time, you're continuing to improve your analytical methodologies, your application of ICRP recommended dose values and so forth. So it's a continuum, so we'll always be doing that.

MR. CAMERON: Okay, thank you.

So Dirk, it looks like you should be following the Part 20 efforts of the Commission.

MR. DUNNING: I agree. The concern that I have is actually -- it isn't with ICRP, this information is more recent than that, but indicating risks comparable or greater for cardiovascular death and for stroke death than for current cancer death curves.

MR. CAMERON: Okay. And I would imagine that the NRC would be interested in that information. And whatever vehicle you want to use to get it to them, they'll make sure that that's shared with the relevant staff.

And Larry?

MR. CAMPER: I was going to say, on one hand as a regulator you always want to be cognizant of

studies and things that emerge that show you things about radiological implications that you did not know before. However, there is a process that you go through as a regulator when you decide to get to the point where you endorse certain information that's out there such as this ICRP process. And so there is a fairly regimented process that you follow in arriving at regulatory based upon prevailing information.

MR. CAMERON: Okay. We're going to go to Rusty now but I just -- is there anyone else on the phone who wants to say anything right now?

Okay. We're going to go back to the room then; we have a couple of other people who want to talk. But I'm going to go to Rusty Lundberg now.

And I just want to say that our next event here is to have the DOE folks come up and join the NRC folks at the table for a panel discussion. And we'll see how that goes, how that takes off, but it may be that we just continue the discussion that's going on now.

But let's go to Rusty Lundberg from the state of Utah.

MR. LUNDBERG: Okay. Thank you very much.

If I may begin first of all to, I guess, lay the foundation of working off some of some of the

topical -- or the comments from yesterday's topical workshop as well. I'm going to be brief so that I don't extend this thought that the state regulator would like to protract things out just for the sake of doing that. But I do want to offer some things in terms of a perspective here a little bit.

In one of my presentations during the symposia, I began by noting, having been involved with environmental programs for over 30 years, that we tend to do things -- and I mentioned this to Bill yesterday too -- is that we look at things in terms of a more circular, dynamic aspect of things. Meaning that as we talk about revisiting our starting point, that draws in this nature of an opportunity to look at things in a circular opportunity, but at the same time look at ways to improve that and move it forward to update.

So that's where I want to lead into my first comment that in terms of as we look at how to modernize the aspect of this, I think that's a good concept. But I also want to say and go one step a little bit beyond that by indicating that I think that that's a good thing to do, to modernize, but we certainly don't want to limit ourselves by saying the current conditions ought to help, say, and do all that

we need to answer things that will be important in a more long-term aspect.

And so my point of that is simply yes, it's good to modernize, but let's not do it just for the sake of holding ourselves hostage to current views of things but look beyond as well. And by that I mean we're getting now into more issues that relate to philosophical aspect as well. Those are difficult questions to answer simply just by the science. In fact, they go beyond the science.

And that's appropriate too, because I want to have you understand that in terms of the acceptability as a host state and having the public be confident and accepting of facilities like this as a host state, you also have to address not only the science, but you also have to address the philosophical or the policy aspects of these things too.

Let me give you a quick example of why that's successful. In Utah, one of the reasons that I firmly believe personally that we were successful in not only siting the Energy Solutions facility, but attendant to that about the same time we were looking at the siting of commercial hazardous waste facilities, both an incinerator as well as the

landfill. All of that was kind of concurrent and went through the process.

That led the local government, Tooele County, to be a little more foresightful about what it meant to host facilities in their area in the west desert. Without that foresighting creating the foundation of the ability to site facilities in a zoned area that was specific for that type of industry, that simply set the stage and also in a way a restriction as to what was acceptable. So that was not just the science based aspect. That was a policy driven basis in which to site and to move forward. So we have to look at the combination of both of those in terms of acceptability of a host state.

Let me move on to another point that relates to this. It's been mentioned that sometimes state regulation, the implementation of that should be fairly harmonized and consistent. I think states across the board regardless of the program have uniformly said, yes, we need some kind of consistent floor to work from across the country. That's simply just helpful for us as we implement what we have set out to do on behalf of the Federal government.

As we look at that floor, however, I think that you'll find most states would want to move into

it; however, don't remove some flexibility for us. I know that's a little counter to what others have said.

When you open up flexibility, that opens up patchwork and again this idea that it's not consistent anymore. However, I think that when you allow for some flexibility, whether it be implementation of the rule content itself, you account for localized or more geographic demographics, all of those things that tend to be a little more localized and a more local concern. Without that flexibility and setting just a floor only, I think you wreak a little bit of havoc by not having that flexibility. Again, you would not have something sited in Utah if you didn't have that additional flexibility.

And that stems from a follow-up comment in terms of some of the information that we received from the reports too as you look at comparisons. Arid climates tend to be in the west, eastern climates, more humid -- eastern area, more humid climates. I think that's good for the short term, but as you look at the long-term horizons in terms of some of the long-term changes that can happen with climate, that does not really hold. But for purposes of comparison it does.

And, again, this is more of an aspect that

we need to look at the acceptableness. It also has to be practical in terms of the right time horizon as well.

And let me just conclude with the last little bit is that -- again, my comments are not to get in the weeds as far as the desire, at least representing the states a little bit here, the desire of what would be acceptable for states in terms of the specifics. I don't think we're at that point right now and I think that that's a good thing is to look first of all at the higher level conceptual aspects and then move into the weeds a little bit later.

And with that, I should have started my comments by expressing appreciation to both DOE and NRC for hosting this. I know earlier, they consulted with some of the states about how to proceed through this process of looking at the rulemaking and accounting for changes that would be appropriate for Part 61. And I think it was probably uniformly said that we need to keep this in an open opportunity for all of us to participate. And I think having this today is reflective of that commitment on behalf of both agencies to do that and I think that it's important for us to continue down that path; not that you would not otherwise do that.

I think that kind of pretty much captures some of the points that I wanted to make in terms of some of the things that have been brought up. But I, again, do appreciate this chance to express these comments.

MR. CAMERON: Thank you very much, Rusty.

Let's go to John and then we'll go to Susan.

John.

MR. TAUXE: John Tauxe again, with Neptune and Company.

I just wanted to touch on one piece that came up in Mike Lee's talk about option two, and that was the concept of the generic performance assessment. And of the -- given my experience, having worked on 11 PAs at six sites and at least a dozen more that I've studied, I just don't think this is really a workable concept to have a generic PA. There's really very little that's generic about them.

And the simplification that there's east sites and west sites and humid and arid, but even among sites one to another in a humid place or one to another in the west, they are very different. And the idea that you could have a generic sort of PA is -- I don't think that's a very good starting point, because

they're all just so different. I wouldn't even know how to build a generic PA. I mean, I made a generic PA model that I shared with everybody, but that's just a toy model; it doesn't represent any particular site.

Anyway, I think the generic PA concept that would be used to help construction disposal decisions is not a very good place to start. I love the idea of doing site-specific PAs and I think given the number of sites that we're talking about, that that's quite a reasonable thing to do.

And then one other aspect about genericness of assessments is -- and I may get -- I expect that this is a rather controversial thing, but personally I think the idea of having a member of the public and an inadvertent human intruder scenarios that are generic, which is sort of where we are now, also doesn't make much sense. And I would -- that's a particular part of the language in these regulations that I would completely do away with in favor of doing another -- that part of a performance assessment should also be site specific, so that you're looking at site specific receptors. Who would be showing up? What would they be doing? Whether they're an intruder or a member of the public sort of thing is irrelevant. What things might people do at a

particular site?

And we should abandon the idea of having cookie-cutter dose assessments in the same way we would never entertain the idea of having cookie-cutter groundwater models or something like that. It's as unique to every site as is the hydrogeology and the biology of each site.

So I would promote unique site-specific -- Well, I would say dose assessment, risk assessment, but impact assessment perhaps, to adopt some of the new language that DOE is promoting.

MR. CAMERON: Okay. Thanks, John.

And before I go over to Susan, I just want to go to Marty who has a follow-up on that, I think.

But could we get the DOE staff to come up to the table? And if you guys could make room for them.

MR. LETOURNEAU: John, didn't you participate in the Sandia disposal work group effort back in '95?

MR. TAUXE: Yes. I would say that in essence it was a form of generic performance assessment.

What we were doing was that we were charged by a group of people to look at 12 different

sites that were being considered under the waste management PEIS as potential sites for a mixed low-level waste disposal facility. And we developed a sort of generic PA model with the idea that we were going to populate it with site-specific information and that we were hoping to get an order of magnitude answer. So sort of a generic facility that we would go to a site, collect their site-specific information, run some simple calculations, and we were looking for order of magnitude information.

We used tritium, carbon-14, cesium, strontium, technetium and americium, plutonium, and uranium. And when we ran those results, lo and behold, the numbers that we got were about an order of magnitude right around the NRC limits in the tables. We proved what the EIS proved, that those are the concentrations that are generally acceptable for shallow land disposal.

The only other thing we proved was that dry sites were better than wet sites by about an order of magnitude and waste form could buy you about an order of magnitude but it was asymptotic; the longer the half-life, the less it bought you.

MR. CAMERON: Thanks, Marty.

And Marty is going to go up there.

And Susan. And we have Susan's name in the record already, her last name. Susan.

MS. GAWARECKI: So you're not going to try it?

My name is Susan Gawarecki and I am the executive director for the Oak Ridge Reservation Local Oversight Committee. I had my hand up but Dr. Miller missed me. I'm probably the only member of the public.

And I'm here because I was at waste management and also because we're seeing DOE looking more towards commercial disposal of its wastes, so I really wanted to learn more about it. I have a technical background; it doesn't go very far into radioactive waste disposal but I've learned a lot and I -- let's see, I had a few questions and comments.

Okay, first of all I'd also like to say any comments I make or opinions are my personal ones. My Board of Directors actually has not had a chance to even begin to look at this. But we do deal with sometimes overarching policy issues as well as technical issues. And one question I had was for policy issues on the revision of Part 61, should the public contact the NRC Commissioners?

MR. CAMERON: Okay. Larry, do you want to

-- we're going to go -- Larry, you can address that.

MR. CAMPER: You certainly can write letters to the Commissioners, you certainly can request an audience with the Commissioners; anyone has the right to do that. However, that is not the normal process. The normal process is to provide comments through the docketed information that I provided earlier, because all of the comments that we receive on this rulemaking, on any rulemaking, has to be processed by the staff and then reactions identified, articulated, and ultimately in the rulemaking vehicle itself. So that's the more effective way to do it.

MR. CAMERON: All right.

MS. GAWARICKI: I would say that as far as your options for revision, I don't think it's rational to update the existing tables and use the existing calculations, because it doesn't really acknowledge the knowledge base it's accumulated since these regulations were written. And, you know, I'm really a little bit surprised at how it's currently done. I can't imagine that if you were starting over again, you would choose the same system. So I'm going to urge you to look at some of your other options.

And one of them I think you might look at would be to redefine the wastes, even if for

discussion purposes, to align with the IAEA standards; that's your option three. I've done some work with the IAEA and when you start to look globally, it's more important, I think, that the United States be talking the same language as everybody else in the world. I can't wait until we get to the metric system, but I'm not holding my breath on that. And combine that option with more of a site-specific performance assessment and using waste acceptance criteria. I think that some sort of blended option would serve NRC best in this respect.

A lot of my questions were answered. The one about the number of current facilities, I mean, I think we all recognize there were two out there. Is there any expectation that, you know, a significantly larger number will be licensed within the next ten years? I don't see any on the horizon. Maybe you all might.

But I tend to agree with the commenters who said this is not doing -- site-specific work is not too difficult. We have a huge number of very competent consultants out there who've done this for the DOE.

As a DOE stakeholder, you know, I've looked at performance assessments, the basis for waste

acceptance criteria, some of infractions of disposal in landfills. We have an onsite landfill in Oak Ridge for DOE's CERCLA waste and the stakeholders participated in probably at least a year of discussions over that, every aspect, and it's certainly not beyond our understanding.

I guess one question I have because I'm -- I was interested to learn that the NRC doesn't delegate their authority to Agreement States but sort of passes it over wholesale. And to what extent and how quickly and what are the drivers to have the -- to require the states to update and enforce their regulations to be consistent with any changes you might make. That would be a question I have that I don't really understand very well.

MR. CAMERON: Why don't you finish what you have and then we'll go to that question.

MS. GAWARICKI: All right.

Oak Ridge also dealt with the issue of volumetrically contaminated materials, and maybe this is straying a little bit from Part 61, but the state was actually looking to allow release of huge quantities of very lightly contaminated nickel into the commercial market for recycling. Many antinuclear stakeholders went berserk over this. We did not.

We looked at how the decontamination was done and the test results and the science behind it and decided, you know, it was perfectly protective of human health. But the DOE now has a moratorium on that.

And in general we're seeing that a lot of money is spent managing things as waste, which there's no need to from a human health perspective. And I think there needs to be some rationality injected into this process. Not every gamma ray is going to cause cancer.

So I think we need a de minimis provision, we need a way to free release material that is below regulatory concern. I mean, that's only common sense. EPA does that with hazardous waste which has no half-life, and we certainly should be able to do it with low-level radioactive waste.

And I had one more, actually two more comments.

Dirk's issue regarding cardiovascular effects. And I know that the NRC is charged with protecting people, but -- and I mentioned this yesterday -- on balance the particulates and the emissions from coal-fired plants according to EPA's risk assessments kill 400,000 people a year; 400,000

real people, not, you know, some intruder far in the future who may or may not show up on site, may or may not drill into it for water in the middle of the desert.

So there's got to be a balance here. You can't make life so difficult for nuclear power plants so that they can't bring the benefits of non-carbon, non-emission power to the people of the United States.

And then finally, the intruder scenario -- in Oak Ridge of course there is that consideration for the closed waste sites, but what the community is really looking at is you can't protect, I mean, there's just no way that these sites aren't going to eventually deteriorate. And one of the keys is to implement a system called long-term stewardship where you have these sites registered with the county registers, they're on deeds, they have restrictions, there's institutional controls as well as the physical barriers, you have an ongoing education program. Those things are essential elements for when a site is finally closed and the operators are gone. And maybe NRC would like to start to look at long-term stewardship requirements as well as some of the other technical requirements.

And I want to thank you for your time. I

really appreciate the extra day-long meeting. I'm a little bit sorry there aren't more members of the lay public here, but it can be tough sledding with some of this technical stuff. Thank you.

MR. CAMERON: Okay. Thank you, Susan.

And before we go to the panel, and I will go over to Leif, Larry maybe you could just briefly put a little bit of the finer point that relinquish doesn't mean wholesale.

MR. CAMPER: No, it does not.

The reason that I pointed out that we relinquish the authority as opposed to delegate -- during one of the presentations the term "we delegate" was used. We relinquish our authority, vested in the Atomic Energy Act. But when we do that, we do that under a rather rigorous process.

The Agreement State, for example, has to come in and demonstrate that they have developed a set of regulations that are adequate to protect public health and safety, that they have achieved the level of compatibility that has been assigned to those regulations, that they have adequate staffing, that the staff is properly trained and so forth. So when the governor of a state and the chairman of our agency enter into an agreement, it is not just that we just

say, here, now it's yours; it doesn't work quite that way.

And then in addition to that we have a -- for any given regulation a compatibility is assigned for various components of that regulation and then the Agreement States have a prescribed amount of time to implement those regulations consistent with the compatibility that is assigned. And then we go through a rather rigorous monitoring process where we interface with the Agreement State regulators and conduct what we call a vertical slice. We look down through their licensing activities, their selection activities, the quality and currentness of their staff in terms of training. So there is quite a bit more to it to become an Agreement State and then to maintain that status as an Agreement State, it is a rigorous review process. So when we relinquish that authority, it's not just wholesale.

MR. CAMERON: Thanks, Larry.

I'm going over to talk to -- see what Leif has to say.

But for the panel, we started out this morning saying that the purpose of the panel was to deal with any cross-cutting issues. There were a number mentioned this morning: implications of the DOE

rulemaking, blending, period of performance, sufficient concentrations. I don't know where all of you want to start with that or whether you want to start with where are you collaborating or where are the potential areas of conflict to start that discussion.

But we're going to go to Leif first and then we'll go up to panel.

MR. ERIKSSON: Well, maybe this isn't such an issue. My name is Leif Eriksson.

I made some comments yesterday and to my great satisfaction, most of them have been addressed here, so I will not belabor you with those again. I just hope that -- David enlightened me yesterday on B and C conditions, and there will be a lot of A's if A is what I think it is.

What I would like to do is to look a little bit broader. And that is we have a problem in the United States today, we can dispose of low-level waste, it is more expensive at some sites than others due to the way the states implement the regulations but we still have -- we have four buckets if you're going to keep the classification system they have today, A, B, and C, and Greater than Class C.

My thinking on Greater than Class C is that it could be beneficial to push Greater than Class C into 10 CFR Part 60 and 40 CFR Part 191. And I'm not

quite sure that that would work, but I just wanted to lay it on the table for consideration by the NRC to begin with.

And also with regards to Greater than Class C, the EIS looked at various disposal solutions. I would recommend that also and anyone who is interested in a relatively safe solution close to the surface, go to www.skb.se (the website for the Swedish Nuclear Fuel and Waste Management Co. or SKB) They (SKB) have operated a facility since 1978 for short-lived, low-level, and long-level radioactive waste. So they have tremendous experience. And in my mind, that is the place where I think the GTCC could go without any problems if it doesn't go to WIPP.

MR. CAMERON: Okay. Thanks, Leif.

And I'm going to get to you. I want to make sure that we at least kick off the panel discussion.

Do we have any good ideas about how to kick that off?

MR. LETOURNEAU: I've got to start by making a confession and correcting the record, since I misspoke this morning. Yeah, I know. I know.

Frank pointed it out to me. We have not proposed capitulating on the 10,000 year time of compliance. We are still keeping 1,000, doing peak up

to 10,000 and then adding the qualitative analysis for any peak that occurs after 10,000. So we're adding the qualitative part, we're still going to use 1,000 for compliance.

MR. CAMERON: And let's go to Boby; you have that right there. And then we'll go down the mic. Boby.

DR. EID: I think your question is regarding what areas of collaboration in order to achieve something so we can satisfy the public and the stakeholders and the licensees in terms of low-level waste sterilization activities. In terms of PA, definitely, we need to work together because as was indicated, and Dave also tells us that PA is not an easy task; it is a complicated issue, so methodology could vary from one agency to another. So it may be a good idea to establish some kind of a group to interact with each other. It's not just only with DOE, it's with EPA because those issues there are overlapping.

And to address risk-informed performance based approach, one solution could be how can you establish a model site. It is not just on what you call it model A, B, and C, try to tackle that issue based on a practical approach, some data available,

and then try to conduct some kind of PA analysis using different approach, different methodology, different codes. See how we do it independently and then after that, get together and see what kind of issues that we do it in different way.

If we leave just the PA to be conducted by the consultants and all these things by themselves and then after that we try to look at it, maybe we will find we are not in harmony.

So my solution if we can start this activity to harmonize the PA methodology, PA approach, I think this would be a good idea.

MR. CAMERON: Okay. Thanks Boby, that's very helpful.

And I'm reminded of Rodger's presentation yesterday where he talked about the group that meets in May. And I want to get to Mike Lee, but Marty, do you just want to tell us the name of the group that Rodger is talking about?

MR. LETOURNEAU: This is definitely a partial answer to Boby's concern and we'll make sure that he gets the information. We're setting up the steering committee right now. And we're trying to establish it such that it becomes a true community of practice; not a DOE community of practice, not

anybody's community of practice. But in order for it to be successful, it has to have DOE, NRC, EPA, state regulators, and so on, and practitioners to be successful.

So we'll continue to work with you on that. And I think there is a special project in your future.

MR. CAMERON: Wonderful

MR. LETOURNEAU: Thank you.

MR. CAMERON: Okay. And thank you, Boby. Mike Lee.

DR. LEE: Just a couple of points. I think the committee that Marty talked about is laudable. I know that when the staff put together the staff recommendations on low-level waste PA, that document went out for public comment. We got a lot of comments from Agreement States as well as practitioners. And that's an opportunity, I think, subject to resource availability. It might be useful to get engaged in.

The other comment, though, regarding the time of compliance and as Larry elaborated on earlier is that there is a rulemaking effort under way. The staff as part of that rulemaking effort are developing a technical basis for their position on what that time

of compliance might be. And then there's an alignment process that's going to take place and then ultimately it will go to the Commission; and then the Commission is going to respond to what the staff recommendation is.

So I don't think we can do anything more than that right now, just let the process run its course. Ultimately, if the Commission decides to do so, it will make that document available for public comment prior to giving -- I mean, there are a couple of scenarios. The Commission could say let's make it available for public comment after they review, they could turn around and say well, we don't want to weigh in on it until we hear from the public on it. There are a couple scenarios.

But I think that the important point for the audience and other folks to bear in mind is the fact that there is an alignment process that has yet to take place. And the other thing, of course, is the process has to kind of reach fruition.

So there's not a lot we can really say until we get some internal alignment.

MR. CAMERON: This is the beginning of a good discussion and we're going to go back to you, go to Frank. I know that we have a member of the

audience, Tom Magette, who wants to comment on what you're discussing.

But I want to make sure that this gentleman gets the chance to get on the record before he has to go.

MR. MAYHUNE: Okay. Thank you.

My name is Arthur Mayhewn (phonetic). I work for Energy Solutions in the U.K. I'd just like to provide some observations from a U.K. perspective.

About five years ago in the U.K. we embarked upon a similar program of work to what you are now considering. We decided that we needed to modernize our low-level waste policy and update our disposal regulations. And we had a classification for waste that in principle is very similar to the U.S. system; it's not quite as complex, it's not quite as prescriptive. But it was based on activity concentrations for various categories of waste. And those activity concentrations stemmed from work that was done in some cases going back to the 1960s.

The system that we've moved to is a risk-informed system. It's based on good science, it's based on a proportionate pose to risk and it's very, very flexible.

What we haven't done, though, is throw

away our old classification system. So the new system that we've got, we've still got to old classification system. And the majority of waste that's currently being consigned to waste routes -- waste disposal routes in the U.K., is being done so under the old classification system.

But there are new routes that are now being developed; and those new routes, they have site-specific waste acceptance criteria. And I think the changes in the policy and the regulation framework in the U.K., they've really driven better solutions to radioactive waste.

We've now got very low-level waste and lower activity level waste. We've got routes (disposition paths) opening up for those waste streams. We've also got a route for intermediate-level waste that we are now developing.

And so I really would urge people within this room to consider a risk informed approach. We really haven't found the difficulties in implementation that I think were suggested by a number of members of the panel.

Yes, there is more work to do for the developers in terms of performance assessment and environmental safety case developments and there is

more work to do for the regulators, but we haven't found that to be significant. Just to give you an idea of that. We've gone through an exercise for a waste landfill to take very low-level waste, it took us around about six months to put together the application, it's taken the regulator 12 months to actually review that application. So we don't think those are unreasonable time scales.

I'd just like to make another couple of points. The inadvertent human intrusion scenario in the U.K., we only look at credible inadvertent human intrusion scenarios, but we do apply a probability of one to those scenarios. And, again, I think that goes back to a more proportionate type approach.

In terms of institutional control in the U.K., the period of institutional control is subject to discussion with the regulator. It can be up to 300 years.

I think there was also some discussion about the period over which you would need to do a performance assessment and look at the risk to the public. In the U.K. we have to apply the same standard of protection to future generations as to the current generation. What that means, of course, is that we have to have a look if there is the potential

for there to be significant risk to the public in 1,000 years, in 10,000 years, we have to do some type of assessment. But again, those types of assessments, given the uncertainties associated with those time scales, they can only be stylistic. And in terms of the burden on developers in order to do those assessments, they haven't been -- we haven't found them to be significant.

Okay. Thank you.

MR. CAMERON: Thank you very much.

I think Tom's comment very much to the topic of DOE, NRC. And then we're going to go back up to the panel and start with Frank.

MR. MAGETTE: I just had one comment largely relevant to what you were just saying, Mike. I really appreciate the idea of DOE and NRC getting together on this. But it seems to me that if there's one place where you really ought to have harmony it's on the period of performance. Because if you are going to dispose of DOE generated waste, the commercial facilities that are licensed by the NRC on Monday and dispose of on-site cells on Tuesday on DOE sites, it doesn't make a whole lot of sense that you ought to use two periods of performance to assess whether Monday's site is okay or Tuesday's site is

okay.

So it might be hard -- okay. It will be hard, but it would be really nice if you guys could get together on that.

MR. CAMERON: And, Frank, we're going to go to you but, you know, I just want to see if after Frank if someone, anybody on the panel wants to address how do you go about harmonizing that? And we'll go to Marty. We'll go to Frank and then we'll go to Marty.

MR. DISANZA: Mine is real quick.

On time of compliance is that the way we structured our DOE Order 435.1 update is that we have the requirements, but following that we have a guide. And in the guide it gives you the argument for why we chose 1,000 years. And what I'm suggesting is it's real important that you read that. And I don't know exactly what the process is but I hope, Marty, we can make that available.

MR. LETOURNEAU: Our friend from the U.K. gave me another great idea. So this is another one of those brain busters.

Suppose we keep the classification system A, B, and C, but we have a site-specific performance assessment. And where the dividing line between A, B,

and C is, is site specific based on what the important assumptions were about those classes.

Class A is what you can dispose of as is. So based on your site-specific performance assessment, how high of a concentration can you dispose as is before you have to kick into Class B, which means you need additional waste form? And your limit of Class B would be as much as you could do based on your site-specific PA with that waste form. And then C would be, of course, deeper.

MR. CAMERON: And where does that get you in terms harmonizing the period of performance?

MR. LETOURNEAU: Oh, no. No. I'm not dealing with that right now. I had to get this out of my head before my head exploded.

MR. CAMERON: Okay.

MR. LETOURNEAU: Was that what you were thinking about?

MR. CAMERON: That's a brain buster but --

We'll see if anybody else wants to --

MR. DISANZA: Chip, I'd like to add on to what Marty was saying.

MR. CAMERON: Okay.

MR. DISANZA: As a manager of a disposal site, many times when I take people out to the site I

refer to our facility as a boutique disposal site. And what that means is that we are at a point where we are looking waste stream by waste stream as far as how to dispose of it.

And we run the computer models, we make the appropriate decisions regarding does it go in our standard trench or do we have to excavate a new trench that's deeper, wider, so on? Are these trenches that are required deeper disposal, are they small trenches, large trenches and so on. And so that fits right in with what Marty says.

As far as what we do, I think we do the latter part of it, because we don't get any standard little waste that just goes over here into a standard trench.

MR. CAMERON: Okay. I think Tom's point -- I mean, in terms of public -- in terms of credibility, can you really have two different periods of performance? I don't know how that would --

We're going to go to Dave. Dave.

DR. ESH: Well, I think -- and for the transcription, this is Dave Esh, NRC.

We do now. I mean, we do now between NRC and DOE. We do now within NRC's programs between our Agreement States. We do between NRC and various

international programs. So it's not like -- the period of performance, I think we should identify it based on technical considerations, societal considerations, policy considerations.

And some of those things may be mutually exclusive between different groups or programs and they may not be amenable to a resolution, because people think very differently about this problem. I've done a lot of work on it, I'm looking at what different programs do, different groups do, and there's a very diverse range of the approaches that people take.

I think the best that we can do is we can clearly develop what we think is an approach and share it with stakeholders and get feedback. And I appreciate all of you to give us feedback whenever we get our information out there and we'll consider it and, if needed, revise the approach that we take. And some of that feedback we hope will come from our brethren at DOE and EPA and the other government agencies that we're all trying to represent protection and public health.

MR. CAMERON: So it's not necessarily a fatal flaw that there's different periods of performance?

DR. ESH: I don't think it's a fatal flaw, no. I mean, I think it's one of those areas where it can be challenging to discuss it with the stakeholders, but it's not any different than NRC having 25 millirem for a dose limit and the EPA having 15. I mean, that's the same as --

MR. LETOURNEAU: Yeah, we live with that too.

DR. ESH: Or having groundwater protection or not having groundwater protection. I mean, a lot of energy goes into arguing or discussing a topic like that. So you're going to have these differences and some of them are not going to be amenable to resolution like that so simply. But we'll certainly try. Just because it's difficult and you may not come to resolution doesn't mean that we won't try to achieve resolution on it.

MR. CAMERON: Okay. Thank you, David.

MR. LETOURNEAU: Rusty, for the non-DU what's your time for compliance for energy solutions?

MR. CAMERON: And Rusty, let me make sure I get this answer on the record.

MR. LUNDBERG: It's 500 years for non-DU.

MR. LETOURNEAU: Scott, you said Texas was 1,000?

MR. LETOURNEAU: A 1,000 year peak.

Anybody know what South Carolina is for Barnwell?

MR. GOLDSTON: They evaluate at 2,000 years, I believe.

MR. LETOURNEAU: Two thousand years? We win.

MR. CAMERON: Okay. Thank you all. I want to do one last check with the people on the phones before we go on.

All of you on the phones, you've been listening to the discussion between the NRC and DOE staff and also have been listening to other things that have been said from the audience. Does anybody have anything that they want to offer at this point?

MR. CAMPBELL: Hi, Chip, this is Tison (Campbell) with NRC's OGC (Office of the General Counsel).

MR. CAMERON: Hi, Tison. How are you doing?

MR. CAMPBELL: All right.

I just wanted to clarify a few points about the Agreement State program.

MR. CAMERON: Good. Okay.

MR. CAMPBELL: And I believe one of the

questions that was asked was how long do the states have to implement regulations after the NRC adopts them? And the answer to that is three years.

MR. CAMERON: Okay.

MR. CAMPBELL: And also on this compatibility question, when we develop the regulations, we work with the Agreement States and make them aware of what we're doing throughout the process. And at the end of the day, the states have the -- you know, we assign a compatibility level to each section. And depending on what we have done, the states either have to adopt an identical regulation, they can adopt something that is more restrictive than what the NRC has done, or they are in some cases given the option to not adopt the regulation at all.

MR. CAMERON: Okay, any other thoughts? This is Tison from the Office of General Counsel at the NRC.

Anything else, Tison?

MR. CAMPER: That's all I have right now. If anyone has any questions, they can get my contact information from some of the NRC staff and I'm happy to answer questions offline.

MR. CAMERON: Okay. Thanks, Tison.

Anybody else on the phone want to make a

comment or question?

MR. ENGLAND: Frank England. Thanks again, for an excellent presentation. The technology worked great the second half of the day, including the chat. And I appreciate Tison's comments. And with that, thanks and I'm out.

Oh, one other comment. (Inaudible) and ask to make an announcement of how we could get all of the materials shown in the slideshow. We couldn't download them, and we attempted to during the presentation. Thanks.

MR. CAMERON: Okay. And NRC materials are going to be -- and let's find out how we get NRC and DOE materials. NRC materials?

MR. KENNEDY: Yes. We set up a website for today's meeting. There were a couple of typos in the slides. Today is Friday, we'll probably have a corrected version reposed by Monday or certainly by Tuesday. So if you can wait a couple of days, we'll have a corrected version of the slides on the NRC website under the low-level waste program.

MR. CAMERON: Okay. So just go to the NRC website, low-level waste program.

MR. KENNEDY: Well, the slides are there now, but we've picked up on a couple of typos.

MR. CAMERON: Okay. In terms of the DOE slides?

MS. SUTTORA: Okay. So we're going have the DOE slides, if you go to the Department of Energy, so it's energy.gov, then go to the environmental management, which is actually em.doe.gov, under the compliance link on the far left-hand side, they will be there probably Monday or Tuesday.

MR. CAMERON: Great. That's terrific.

And we already gave the website where people can get a recorded version of today's proceedings. And I just want to make sure, the transcript, when it's available, and usually it's maybe ten days or whatever has been paid for in terms of urgency, but where will that transcript be posted?

MR. SUBER: The transcript will be in ADAMS and it will also have a link on it when we update the webpage. So you can either go to ADAMS and get the transcript or through the link.

MR. CAMERON: And it may be easier to go to the link and just click on -- go to the website, click on the link for the ML number.

MR. LETOURNEAU: And we'll do the same thing. We'll post it in the same place where our presentations and the recordings will be.

MR. CAMERON: Great. Thank you for that question, too, because that clarifies a lot of things.

Anybody else on the phone?

MS. O'DELL: Maureen is still on, but I don't have any comments. Thank you.

MR. CAMERON: Okay. Thank you very much. Was that Deb?

MS. O'DELL: No, it's Maureen O'Dell.

MR. CAMERON: That's Maureen. Okay. Sorry, Maureen.

MS. O'DELL: Oh, that's okay.

MR. CAMERON: All right. Anybody else in the -- oh I'm sorry, sir, I think you had your hand up earlier. All right.

MR. SMITH: Len Smith from CORAR, that's the Council on Radionuclides and Radiopharmaceuticals.

And firstly, I'd like to say I really appreciate that we're having this discussion with both NRC and DOE; it's wonderful that we're doing this.

CORAR had concerns way back -- oh, first of all I should explain that the members of CORAR are the major manufacturers of radionuclides and radiopharmaceuticals, and we supply -- our customers are mostly the biomedical community, but also we produce sealed sources for quality control and so

forth. So of course we generate quite a lot of low-level waste manufacturing and also our customers do as well.

Way back when Part 61 was created we were concerned that there was just one set of tables, you know, the two tables and we felt that there should have been another set for the arid sites; and we still feel that. And the other thing that we're very much aware of is that that practices have changed in the existing sites and they are much more protective than was envisaged before.

So we strongly feel that there needs to be an updating of Part 61 to accommodate those changes, recognize those changes.

We do believe that concentration limits should be recalculated for current site conditions and practices, and we also believe that it should be done for each low-level radioactive waste disposal site. However, we do appreciate that might be a prohibitively costly process.

And that brings up another issue for us. We have had a long-term concern that many licensees do not have access for disposal, either access or they can't afford to dispose. So there are quite a few licensees that store waste on site and would continue

to do so even if the access was available to them. So we're concerned about the costs. So any update to 10 CFR Part 61 we think you should be considering the costs; you should try and get some feedback on how it would affect the cost of waste disposal to the generators. We would be glad to try and help you with that.

So looking at the options, we see there is value in virtually all these options except the last one. We do not like the status quo. We think there is a real need for change. But it seems to us that probably, if there's a cost problem, that the best option is having just simply another set of default values for arid sites.

MR. CAMERON: Thank you very much. And just for the stenographer could you just write your name down on that and make sure she got it.

Okay, are we ready to have the two big dogs so to speak come up and do a sum up for us, or are there other things that the panel wants say or people in the audience?

Jim Lieberman, we'll go to him

MR. LIEBERMAN: Jim Lieberman.

Mike Lee described the rulemaking process and the norm is that SECY papers with proposals are

not disclosed to the public until the paper has been submitted to the Commission. But that's not always the case.

There are some cases when there is a sufficient stakeholder's interest, that the staff releases the draft for a preliminaryreview so the public can comment on it so that when the SECY paper is finalized, the Commission has the benefit of stakeholders' views when it reviews the staff's proposed rule language. And I suggest that in this case, especially with the issue of time and compliance with the Unique Waste Commission paper, that this might be a candidate for the staff to consider releasing their views prior to the SECY paper.

DR. LEE: Thank you, Jim, for that comment.

I alluded to an alignment process, and that process includes higher levels of NRC management. We certainly intend to remind them of what options are available in terms of release of information and they in turn will deliberate on those options and tell us what they think is best.

So I'm not going to say that it's not going to happen one way or another, but we'll do our due diligence, brief management, and then management

will get back to us on what they think is an appropriate approach. And we will certainly let them know what your position is. Thank you.

MR. CAMERON: Okay, thank you all. And Marty, another comment?

MR. LETOURNEAU: Yeah. I just wanted to throw out some thoughts about the intruder scenario, because there's been a lot of discussion about that.

And one of the things that may help us in having a more realistic understanding is making sure that we understand what we're talking about with the intruder scenario. Typically, you know, we are talking about somebody who is going to intrude in the site and we're talking about a 500 millirem standard. But what does that really mean? That's a 500 millirem dose in a year.

So whether you assume that the intruder lives there for 70 years or you assume the intruder is only there for a year, you are only looking at the highest year during that time period and comparing that to the 500 millirem standard. So as unreal as it may seem to have somebody assumed to be living there, it may make us more comfortable to understand that we are looking an annual dose against the limit.

So maybe we do assume that we have

institutional control over these facilities and we don't lose it and there are going to be guards and gates and guns, or at least somebody that comes by once a year from Legacy Management to walk the grounds and make sure that nobody has moved in there or nobody has -- there hasn't been excessive erosion or subsidence. So that would say -- well, let's assume even every two years, every other year; they're cash strapped so they're only going to come out there every other year. You are still -- you are in a situation where you're going to discover somebody fairly quickly before they are going to be able to set up too much of a camp. They might have their house partially built, but they're probably not going to have the house, the barn, and the corral built by that, but let's make it even simpler. The point of highest dose for an intruder is usually going to be in that first year right after you assume that you've lost institutional control. Because of decay and because of short life products, the further out you go typically, we see that the intruder scenario is smaller.

So we really are talking about, if we are going to use a probability of one, picking a point and applying it and seeing what happens. We don't have to make up a lot of scary bizarre scenarios about who's

living there and how long they were living there. We're talking about what happens in a year at the point where they are going to get the highest dose, which will in most cases be the year that you assume institutional control is lost.

MR. CAMERON: Okay. I'm going to ask Greg and Marty to just slide down one and we're going to ask Bill Levitan and Larry Camper to come up.

And I just wanted to thank Justin, our audiovisual person that did an excellent job for us and also Tina, our stenographer, and the officers who helped us out before that. And Erick Reynolds has done a lot of the setup on WebEx and all that; so thank you, Erick.

And here with go with Bill and Larry. And if we could -- okay.

MR. LEVITAN: Well, thank you all. I'm surprised how many people are actually still here at 5:00 Mountain Time. And I guess we'll call you the hard core, but we appreciate you being here. And I certainly appreciate our NRC brethren, our co-Federal agencies.

This is not the first time we've been sitting with one another and it won't be the last, but I think that's positive, because actually the NRC

plays two roles with us. One is if we just look at 3116, both a monitoring role and a consultation role. And we try and be very careful as we work through those different hats that they wear.

But I think from a consultation perspective, if I could say, and a common interest perspective, that we have a very healthy relationship and we look forward to that continuing and we look forward to that continuing in these types of public venues. Because, I'm not political, but clearly -- you've heard the word transparency a lot from the current administration. Our assistant secretary is very much about transparency and we've been talking over the past couple of days about the chairman of the NRC very much being an advocate of transparency as I think is our recent traditions in both of our agencies anyway.

And I think we recognize that we both have a common interest and a common mandate, frankly, on my term and actually sort of a CERCLA term on protectiveness. Protectiveness to the public health and the environment.

We at DOE though depart a little bit from the NRC in the sense that we actually have a mandate from the communities in which our sites are and from

the Congress that we need to clean up these sites. As I may have mentioned this morning, I can't remember, but we literally have hundreds of milestones in our compliance agreements. We have approximately 40 compliance agreements and hundreds of milestones a year that drive us.

And we went into an agreement with EPA and our host states on these agreements, so we want to meet our commitments to the communities that supported basically us winning the cold war.

And as a result, as I said this morning, we and I and my staff and most everybody in EM really has a sense of urgency as we go about our business. But with that sense of urgency is a sense of responsibility that we maintain a safe envelope, that we maintain a compliant envelope and that we maintain protectiveness; that's our goal.

So we're not interested as sometimes we're accused, of cutting corners. What we are interested in doing is completing our mission effectively and efficiently and delivering results to the taxpayer.

So as a result what I mentioned this morning about this transition -- and there is a point whether it was at a waste treatment plant or waste processing, with technologies that are constantly

being developed, with models that are constantly being improved, that we basically have to draw a line in the sand and say this is what we know now, we need to get on with it. And that's because we have these pressures to perform as well.

So I find this -- this has been very interesting for me because, as I mentioned before, I don't get immersed; I leave that to Marty and to Linda and others on our staff. I don't get immersed in the details, particularly of Part 61.

So I've learned a lot today and yesterday and I really appreciate our partnerships and thank you all very much.

MR. CAMPER: Well, obviously, I would echo much of what Bill has said in terms of the amount of communication and effort that goes into the relationship that we have with the Department of Energy. And so this opportunity for a joint public forum was quite acceptable and quite interesting to both agencies. And frankly, we welcomed the opportunity and we started planning this probably a year or more ago and it has really come together very well. And so I would certainly echo the sentiments that Bill set forth.

I think yesterday afternoon we were

closing the topical workshop, I made the comment and I would echo it again here today at this point in time; there is more going on right now in low-level waste policy space than has been the case in the United States in the past 30 years.

We have been updating and risk-informing and performance-basing the concentration averaging BTP. We have the unique waste streams rulemaking. We are addressing this topic of blending within the unique waste streams rulemaking. We have this examination of Part 61, which has been the topic of this discussion today, and of course the updating of the DOE Order 435.1. That is a tremendous amount of policy activity in the low-level waste arena.

We owe a recommendation to our Commission in December of '12 with regards to Part 61. We're going have a number of additional opportunities for public participation in that process over the next year or so.

Clearly, the stakeholder input is a critical part of what we do. The Commission has a strong interest in stakeholder input and I know that DOE does as well, as Bill expressed in his comments.

We got a lot of very useful input yesterday and today and, again, I would also echo the

sentiment of thanking all of you for staying here until 5:15 on a Friday afternoon in lovely Phoenix, Arizona. Throughout the day you've had a lot of very interesting things to say and you've given us much to think about as a staff.

In the final analysis, Part 61 has worked well; Part 61 is adequate to protect public health and safety. That is not to say that it can't be improved. And I think what I'd like to see us do as we work on Part 61 over the next year or so and try to decide what we want to recommend to the Commission, is that we bring to bear the best science that we can, the most realism that we can, all the while ensuring that we continue to adequately protect public health and safety.

So we thank you for your input. We thank you for your active participation. And we look forward to the next opportunity to interface with you publicly as we proceed ahead looking at these various policy issues on the low-level waste front.

Thank you.

(Whereupon, at 5:00 p.m. the joint workshop was concluded.)