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NUCLEAR REGULATORY COMMISSION

Title: Public Meeting on Blending of Low-Level Radioactive Waste

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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 PUBLIC MEETING ON BLENDING OF

5 LOW-LEVEL RADIOACTIVE WASTE

6 + + + + +

7 THURSDAY

8 JANUARY 14, 2010

9 The public meeting came to order at 8:30

10 a.m. at the Legacy Hotel & Meeting Centre, 1775

11 Rockville Pike, Rockville, MD, Chip Cameron

12 facilitator, presiding.

13 PRESENT:

14 CHIP CAMERON, NRC, Facilitator

15 RALPH ANDERSON, Nuclear Energy Institute

16 MIGUEL AZAR, Exelon

17 ROY BROWN, CORAR

18 PATRICE BUBAR, NRC

19 LARRY CAMPER, NRC

20 MARK CARVER, Entergy

21 DIANE D'ARRIGO, Nuclear Information Resource

22 Service

23 JOE DiCAMILLO, Studsvik Inc.

24 BILL DORNSIFE, Waste Control Specialists

25 LISA EDWARDS, EPRI

1 PRESENT: (CONT.)
2 MAURICE HEATH, NRC
3 JAMES KENNEDY, NRC
4 DAVID JAMES, Electric Power Research Institute
5 MARTY LETOURNEAU, Department of Energy
6 THOMAS MAGETTE, EnergySolutions
7 CHRISTIANNE RIDGE, NRC
8 DON SAFER, Tennessee Environmental Council
9 GREGORY SUBER, NRC
10 CHRISTOPHER THOMAS, HEAL Utah
11 BROOKE TRAYNHAM, NRC
12 MARK YEAGER, South Carolina Dept. of Health,
13 CRCPD E-5 Committee
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1 T-A-B-L-E O-F C-O-N-T-E-N-T-S

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

2 8:42 a.m.

3 FACILITATOR CAMERON: On the record. Good
4 morning everyone. Welcome to the NRC Workshop on the
5 issue of the blending of low-level radioactive waste.
6 My name is Chip Cameron and it's my pleasure to serve
7 as your facilitator for this workshop.
8 I just wanted to go over a couple of items
9 on meeting process before we get to the substance of
10 today's discussion and, first of all, a few words
11 about the format that we're using for this workshop.
12 We're using what we call a roundtable setting and
13 don't take that too literally. But the idea of the
14 roundtable format is so that we can promote a dialogue
15 on the issues of concern.
16 And at the table here in Rockville, we
17 have the representatives of affected and concerned
18 interests on the issues of the blending of low-level
19 waste and we not only want to hear what each of you at
20 the table has to say, but we want to get the reaction
21 of your colleagues around the table to what your
22 perspectives are. In others words, we want to have a
23 discussion on the issues. And it's a modest attempt
24 on the NRC's part to try to get a richer type of data
25 than you usually get in a town hall meeting where

there is just a single communication from people to the NRC.

Now although the focus of the discussion today is going to be at the table, we will go out at a couple points during today's meeting to those of you who are out in the audience and also to those of you who are on the phone for any questions and comments that you might have.

The second process issue is ground rules and they're very simple. The first one, and those of you who have been through this before know this, is if you want to talk if you could just turn your name tent up like -- I can't do it. Turn it up like that and I'll know that you want to say something. And that way it will help us to manage the discussion better.

And I would ask that only one person speak at a time not only so that we can give our full attention to whomever has the floor at the moment, but also so that we can get a clean transcript. We have James Salandro with us. He's our stenographer/court reporter and he'll be taking a transcript of the meeting and that will be available to all of you as a record of the meeting.

I would just ask you to be constructive, crisp, concise to the extent that you can be in your

1 comments around the table. I will try to follow
2 discussion threads so that we don't just jump from one
3 topic to the other. So I might not take the name
4 tents in the order that they've been turned up.
5 We do have a parking lot where we'll keep
6 track of issues that might not fit squarely under a
7 particular agenda item. But we will come back and get
8 those at the end of the day.
9 What I would like to do is just go around
10 the table for introductions and then come back and
11 just do a quick agenda check with all of you before we
12 get to our first speaker. And let's start with Bill
13 Dornsife.
14 I should mention -- Bill might mention
15 this -- Scott was going to be at the table, Scott
16 Kirk, our Waste Control Specialist, but unfortunately
17 couldn't be here. So he deputized Bill so to speak,
18 although that's the wrong way to say it, Bill.
19 Go ahead, Bill Dornsife.
20 MR. DORNSIFE: Bill Dornsife, Waste
21 Control Specialist.
22 MR. THOMAS: My name is Christopher
23 Thomas. I'm the Policy Director for a nonprofit
24 public interest group called HEAL Utah, Healthy
25 Environment Alliance of Utah, and pleased to be here.

1 MR. YEAGER: My name is Mark Yeager. I'm
2 with the State of South Carolina's Agreement State
3 Program that regulates the Barnwell Facility.
4 MR. ANDERSON: My name is Ralph Anderson.
5 I'm with the Nuclear Energy Institute.
6 MR. MAGETTE: I'm Tom Magette. I'm with
7 Energy Solutions.
8 MR. CARVER: Mark Carver, Fleet Manager of
9 Rad Waste for Entergy.
10 MR. BROWN: Roy Brown, Senior Director of
11 Federal Affairs for CORAR. CORAR is the North
12 American Trade Association for the Radio-
13 pharmaceutical Industry and Biomedical Industry.
14 MR. AZAR: Miguel Azar, I'm the Rad Waste
15 Manager for Exelon.
16 MR. KENNEDY: Jim Kennedy, Low-Level Waste
17 Branch, NRC Staff.
18 MR. SUBER: Gregory Suber, Chief of the
19 Low-Level Waste Branch in the NRC.
20 MR. HEATH: Maurice Heath, Low-Level Waste
21 Branch, NRC.
22 MS. TRAYNHAM: Brooke Traynham, Low-Level
23 Waste Branch at the NRC.
24 MS. RIDGE: Christianne Ridge, I'm in
25 Performance Assessment at the NRC.

1 MR. LETOURNEAU: Marty Letourneau, Office
2 of Compliance, U.S. Department of Energy.
3 MR. SAFER: Don Safer, I'm Chairman of the
4 Board of the Tennessee Environmental Council from
5 Nashville, Tennessee.
6 MR. JAMES: David James, I'm here
7 representing the Electric Power Research Institute,
8 also known as EPRI.
9 FACILITATOR CAMERON: Great. Thank you.
10 Thank you all.
11 We're going to go to -- Joe, we're just
12 doing introductions around the table. So go ahead and
13 introduce yourself to us.
14 MR. DiCAMILLO: Thank you. My name is Joe
15 DiCamillo. I'm General Counsel of Studsvik Inc., a
16 waste processor and low-level waste processor.
17 FACILITATOR CAMERON: Okay. Thank you
18 all. I just wanted to quickly run through the agenda.
19 Larry Camper is going to lead us off with a welcome
20 and overview and he's also going to mention our
21 different agenda items. But basically after Larry is
22 done, we're going to go to Larry's deputy. Larry is
23 the Director of the Division of Low-Level Waste and
24 Environmental Protection at the Nuclear Regulatory
25 Commission.

1 After Larry is done, we're going to go
2 right to his deputy, Patty Bubar, who is going to talk
3 about the regulatory infrastructure. In other words,
4 what does NRC have in its regulatory framework on the
5 issue of blending? And then we're going to all of you
6 around the table for some clarifying questions about
7 that regulatory framework. Obviously, we could get
8 into a whole bunch of discussion. But we're going to
9 save that for the discussion topics. And anybody who
10 has questions for Larry Camper at that time we'll do
11 those at the same time that we go to Patty for
12 questions.
13 But our first discussion topic is going to
14 be Safety, Security and Environmental Concerns and
15 Christianne Ridge is going to tee that up for
16 everybody. We will go for a discussion. We think
17 that it's probably going to be a very involved
18 discussion so that we're going to take a break in the
19 middle of it, come back, finish it up. We'll go to
20 anybody in the audience who might have a question on
21 that topic and to those of you on the phone.
22 We're then going to go to Brooke Traynham
23 who is the project manager for the development of this
24 policy paper on blending and she's going to tee up the
25 issue of Practical Considerations, again discussion,

1 audience, phones. Then lunch.

2 When we come back from lunch, we're going

3 to hear from Maurice Heath on Regulatory

4 Considerations; again a discussion topic.

5 The last topic of the day is called Policy

6 Considerations and that's sort of a collection of what

7 we've heard throughout the day because policy

8 considerations could arise from any of these topics.

9 I'll be keeping track of those and we'll go over them

10 again at that point as well as any other policy issues

11 that you want to bring up and we'll have a final

12 session with the audience and the phones.

13 That last public audience comment period

14 will be open-ended, whatever concerns that you might

15 have. But the previous ones we want to keep that on

16 topic.

17 And before we go to Larry, we have one of

18 other participants coming to the table, Diane D'Arrigo

19 and I'm going to let her get settled and just

20 introduce herself to us and then we're going to go to

21 Larry.

22 Welcome Diane.

23 MS. D'ARRIGO: I'm Diane D'Arrigo, Nuclear

24 Information and Resources.

25 FACILITATOR CAMERON: Okay. Thank you.

1 Thank you very much.

2 Okay. With that, let's turn it over to

3 Larry Camper.

4 MR. CAMPER: Very good. Good morning.

5 Can you hear me okay? Does this work? Can you hear?

6 Okay.

7 Good morning. Welcome. Let me start by

8 thanking all of you for showing up today. Let me

9 especially thank our panelists for participating.

10 this is a very interesting topic called Blending and

11 we very much value the discussion that will take place

12 today and the collegial dialogue that will take place.

13 It's an important part of our process. So we

14 generally appreciate all of you being here and taking

15 part. Next slide.

16 As I mentioned, we're here today to

17 discuss this topic called Blending, blending of low-

18 level waste, especially blending which results in a

19 change in the classification of the waste.

20 This is the fourth of four public meetings

21 that we have hosted to solicit early public input on

22 these issues. The first three meetings included key

23 stakeholder representatives on this issue, that being

24 Waste Control Specialists, EntergySolutions, and

25 Studsvik.

1 The reason we had that meeting with those
2 entities was that they had written letters to the
3 Commission expressing strongly-held views about this
4 topic called Blending. They are very intimately
5 involved and an integral part of the supporting
6 industry that supports the nuclear industry with
7 regards to the management of waste and frankly we
8 wanted to hear their input and allow ample time to
9 hear all their various discussion points and not let
10 it dominate the meeting today with all candor. I'll
11 share with you a little bit later a summary of what we
12 hear during those meetings which were back in
13 December.
14 The focus of this meeting is to gather
15 views on key issues to be addressed in a paper that
16 the staff will provide to the Commission and that
17 paper is currently obligated to be provided to the
18 Commission by the end of April.
19 We do look forward to a collaborative
20 discussion from all of you. We clearly want to listen
21 to all of your thoughts, your various issues, answers
22 that you have to some of these questions and issues
23 that we'll talk about. They will be challenging.
24 They will be controversial at times. But we want to
25 hear all of the views. It's an important part of the

1 process. So we do strongly encourage meaningful and
2 active dialogue, all done, of course, as ladies and
3 gentlemen as I know you will. But we do want to hear
4 all your views. Next slide please.
5 In terms of background, since the closure
6 of the low-level waste disposal facility at Barnwell,
7 South Carolina on June 30, 2008, the issue of blending
8 of low-level waste has received increased attention
9 from stakeholders, industry and agreement states,
10 especially blending which results in a change in the
11 classification of the waste as defined by the
12 radionuclide concentrations set forth in Title 10 and
13 the Code of Federal Regulation 61.55, The Waste
14 Classification Tables.
15 While some blending of low-level waste
16 resulting in reduced waste classification has occurred
17 in the past, the scale of blending being considered
18 since the closure of Barnwell has expanded. A waste
19 processor, EnergySolutions, is proposing to perform
20 blending of nuclear power plant resins and filter
21 media at one of their processing facilities in
22 Tennessee.
23 Blending as defined here refers to the
24 mixing of low-level radioactive waste of different
25 concentrations. It does not include mixing

1 radioactive waste with non radioactive waste typically
2 referred to as dilution and concerns only waste
3 disposal not release of radioactivity into the general
4 environment. Next slide please.
5 In terms of the NRC's current positions on
6 this topic of blending, our responses to the three
7 industry letters on blending described our position in
8 some detail. These letters were dated on August 27th
9 of 2009 to EnergySolutions and October 30th, there
10 were letters to Studsvik and WCS.
11 As described in the letters, NRC's current
12 position on blending of low-level waste that involved
13 a reduction in waste classification is that: (1)
14 blending is not prohibited nor is it explicitly
15 addressed in our regulations; (2) NRC guidance both
16 discourages blending to reduce waste classification,
17 the Factor of 10 Rule if you will, but acknowledges
18 that it's appropriate when there are operational
19 efficiencies or worker dose reductions that can be
20 achieved; (3) we make the point that notwithstanding
21 the guidance that discourages blending waste
22 classification is only required when waste is ready
23 for disposal, not at an intermediate point in the
24 processing or the management of that waste.
25 Waste classification is designed to

1 protect an inadvertent intruder into a waste disposal
2 facility 100 years or more after the facility is
3 closed. It is common practice, however, to discuss
4 changes in waste classification before waste is ready
5 for disposal, for example, during waste processing.
6 But waste is not required to be classified until it is
7 shipped for disposal. Next slide please.
8 This slide addresses some direction from
9 our chairman, Chairman Jaczko, on the 8th of October
10 in which he directed the staff to prepare a vote paper
11 for the Commission to consider issues related to the
12 blending of low-level radioactive waste. Chairman
13 Jaczko directed that the staff specifically consider
14 the points you see here on the slide: issues related
15 to intentional changes in waste classification due to
16 blending including safety, security and policy
17 considerations; protection of the public, the intruder
18 and the environment; technical considerations
19 including mathematical concentration averaging and
20 homogenous physical mixing; practical considerations
21 in operating and waste treatment facility, disposal
22 facility or other facilities including the appropriate
23 point at which waste should be classified; and last
24 but not least was recommendations for revisions, if
25 necessary, to existing regulations, requirements,

1 guidance or oversight related to the blending of low-
2 level radioactive waste. Next slide please.
3 I mentioned a few moments ago the three
4 meetings that took place on the 14th and 15th of
5 December and this slide depicts some of the summary
6 findings from those three meetings. We thought it was
7 important to do that because we wanted the
8 participants today at the table to know what the
9 general outcome of those discussions were in terms of
10 summary types of comments. We also wanted the general
11 public in attendance to know the outcome in general
12 term of those meetings.
13 It's very difficult to summarize in one
14 slide discussions that took place over a period of six
15 hours. But at least we tried to capture some of the
16 key findings.
17 In December we held these meetings with
18 industry representatives who have expressed an intense
19 interest in blending. These are some of those views.
20 I would emphasize that these views that are set forth
21 on this slide are not necessarily the views of the NRC
22 but simply rather the views of the participants in
23 those meetings and we certainly expect that some of
24 these issues will come up today, of course.
25 Some of the arguments in favor of blending

1 in the view of some of the stakeholders included the
2 following; blending facilitates disposal in the
3 absence of Class B-C disposal options; blending is a
4 risk-informed approach; blending is not dilution;
5 blending does not significantly affect volumes of low-
6 level waste to be disposed; blending is in accordance
7 with NRC guidance and regulations.
8 Some of the arguments, of course, the
9 stakeholders argued were not supportive of the
10 blending practices which include the following:
11 blending is contrary to basic waste management
12 principles to reduce the volume of low-level waste;
13 blending jeopardizes the viability of a new WCS
14 facility by potentially eliminating the B-C waste and
15 revenue stream associated with it; large scale
16 blending is contrary to longstanding NRC waste
17 disposal guidance and practice; blending is equivalent
18 to disposing of B-C waste in a Class A facility. Next
19 slide please.
20 For our agenda today, the NRC staff from
21 the Division of Waste Management and Environmental
22 Protection within the Office of FSME will address
23 these broad categories that you see depicted on the
24 slide. Each category includes some of the 13
25 questions that were identified in the Federal Register

1 notice. These questions are intended to initiate and
2 focus the discussion. While some of these topics
3 overlap, we would like to focus the discussions around
4 these major areas of interest.
5 The stakeholder representative sitting on
6 the panel will be given the first opportunity to
7 discuss these topics. These representatives have
8 shown a great deal of interest in blending through
9 either written letters or other communications with
10 the NRC staff or as a result of their expertise. The
11 floor will then be opened up to everyone in the
12 general public, of course, both in the audience and on
13 the telephone as Chip pointed out to solicit input on
14 each topics.
15 We will begin by giving an overview of the
16 current regulatory infrastructure related to the
17 blending of low-level radioactive waste which will be
18 given by Patty Bubar, my deputy on the environmental
19 and low-level waste side of the house.
20 After this, we will go directly to our
21 next topic with discussing safety, security and
22 environmental considerations that are associated with
23 the blending of low-level radioactive waste. This
24 topic will be introduced by Christianne Ridge and will
25 be followed by a discussion with the panel and the

1 audience.

2 Next we will discuss the practical
3 considerations in operating in a facility that bear on
4 the blending of low-level radioactive waste.
5 Practical considerations will introduced by Brooke
6 Traynham of our staff. We'll once again open up a
7 discussion with the panel first and then, of course,
8 the audience.

9 We come back from lunch. We will discuss
10 regulatory considerations including potential
11 oversight that might be needed to ensure that blending
12 is performed appropriately. And the regulatory
13 considerations will be led by Maurice Heath.

14 The final discussion topic will be policy
15 considerations which again as Chip pointed out. We
16 decided to do that late in the day because we think
17 that the policy consideration topic will build over
18 the course of the day. That portion of the meeting
19 will come out of the discussions that will take place.
20 Chip will organize the policy issues around comments
21 that are raised by the panelists and members of the
22 audience. We think that will lead to a very viable
23 discussion and suggestions as to how the staff might
24 proceed on this issue. Next slide please.

25 In terms of a path forward, again I think

1 this is fodder, if you will, for the policy
2 considerations discussion. In my comments, I pointed
3 out what we told the three companies who wrote to us
4 as to the current NRC position on blending and what we
5 have said in our guidance. I would suggest that in
6 our guidance we have sent mixed signals over time.
7 It's not uncommon for that to happen in the regulatory
8 arena.
9 So we have the status quo. One path
10 forward would be the status quo. No changes to what
11 we currently do now, no changes to the guidance, no
12 changes to regulations, simply the status quo.
13 The second path forward would be to
14 enhance guidance. We have, for example, a charge to
15 revise and update the Branch Technical Position on
16 Concentration Averaging which we articulated is a line
17 item in our low-level waste strategic assessment. So
18 guidance could be enhanced.
19 A third option would be a policy
20 statement. There's a couple of ways we might go about
21 issuing a policy statement as Patty will talk about in
22 her presentation. There is a 1981 policy statement on
23 volume reduction of waste currently in place. That
24 could be updated or we could have the Commission
25 create a new policy statement. So policy statement is

1 another option.

2 Rulemaking is the final option that we

3 have envisioned. There may be others that will come

4 up today in the discussions. But these are the

5 pathways that as a staff we have identified. These

6 are the pathways that most commonly exist any time

7 you're dealing with any issue in the regulatory arena.

8 Rulemaking, of course, is by far the most

9 resource intensive pathway, the most time-consuming

10 pathway and the most protracted pathway. But

11 nonetheless it is an option.

12 Let me conclude my remarks by pointing out

13 that the staff has made no decision at this point in

14 time. We have a process in place right now that it

15 deals with this topic called Blending. We have made

16 no decisions. What we want to do is articulate to the

17 Commission the views around this complex topic called

18 Blending, incorporate what we hear today into that

19 Commission paper which is due at the end of April and

20 come up with a recommendation for the Commission and

21 have the Commission decide how it wants to proceed.

22 Thank you.

23 FACILITATOR CAMERON: Larry, thank you

24 very much for setting the tone and we're going to have

25 Patty Bubar come up and give you -- At the end of

1 Patty's presentation we'll open the floor to all of
2 you around the table for questions to Patty and Larry.
3 And I take it you probably have some questions for
4 Larry.
5 I apologize in advance. It's going to get
6 pretty hot I think in this room and so we did turn the
7 thermostats.
8 (Off the record comments.)
9 But we'll try to keep it as cool as we can
10 at least physical temperature wise. Patty.
11 MS. BUBAR: Good morning. Thank you,
12 Chip. And I wanted to reiterate the thanks that Larry
13 provided. We really appreciate the opportunity to be
14 able to hear from such a wide group of folks. As
15 Larry mentioned we have not made a decision. We need
16 the input that we're about to hear from both the
17 people around the table and in the audience and on the
18 phone to help advise us on what we end up putting into
19 the Commission paper.
20 What I wanted to do was to review NRC's
21 regulatory infrastructure that relates to the blending
22 of low-level waste and I'm going to define regulatory
23 infrastructure as both regulations and guidance that
24 are relevant to the blending of low-level waste as
25 well as other agency policies such as risk-informed

1 performance-based regulation that guide all of our
2 programs including low-level waste. Next slide,
3 Antoinette.
4 By the way, I don't know that we actually
5 introduced Antoinette. This is Antoinette Walker-
6 Smith. She has actually made this meeting happen by
7 getting the contract signed with the hotel and worked
8 on all the logistics. So she's turning our slides
9 today. But she's really the reason everything came
10 together today. Thank you, Antoinette.
11 Larry Camper described generally our
12 position on blending in his talk and today I'm going
13 to discuss the regulations and guidance that address
14 blending or not and what they say specifically.
15 Because speakers throughout the day will be discussing
16 our regulations and guidance such as the Concentration
17 Averaging Branch Technical Position or the BTP and the
18 Volume Reduction Policy Statement, I wanted to give
19 everyone an overview of those at the outset.
20 Another reason for this overview is that
21 what I describe today is our current position on the
22 blending of low-level waste. In other words, it is
23 the baseline and since this effort is about
24 considering whether and how to modify the position we
25 thought it would be helpful to know the starting

1 point. So that's the purpose of going through those
2 few slides this morning. Next.
3 I will address the NRC regulations first
4 that are in Title 10 of the Code of Federal
5 Regulations and first I should say that none of the
6 terms, blend, mix or dilute, are currently found in
7 the regulations in 10 CFR that relate to reducing the
8 potential waste class or disposal requirements of
9 waste. We do use the term "mixing" in the same sense
10 as we are using blending today in our guidance which I
11 will address later. But these terms are not in the
12 regulations. Thus, blending is really not prohibited
13 or explicitly addressed in our regulations.
14 Second, NRC has provisions in the Code of
15 Federal Regulations in Part 20, Appendix G that among
16 other things addresses the disposal of waste after its
17 generation and processing. And such processing could
18 include blending. In 10 CFR Part 20, Appendix G it
19 describes the requirements for transferring low-level
20 waste for disposal and filling out manifests for
21 shipments of waste.
22 The primary objective of these parts of
23 the regulations is to ensure that the properties of
24 waste that is being sent for disposal are identified
25 and characterized for the disposal facility operator.

1 The disposal facility operator needs to know this
2 information in order to be able to determine that the
3 site will perform safely when the waste is disposed
4 of. Some of the most important pieces of information
5 are the types of radionuclides and their amounts so
6 that the inventory of disposed waste at the site is
7 known and can be used in performance assessments to
8 determine if the site can safely isolated these
9 wastes.
10 In addition to the inventory, the manifest
11 provisions that in Appendix G of Part 20 also require
12 that the classification of waste, that is, whether it
13 is Class A, B or C, be identified when the waste is
14 being shipped for disposal.
15 As Larry said, our land disposal
16 regulations in 10 CFR Part 61 define the disposal
17 requirements including the classification of waste in
18 Part 61.55. The regulations do not require that waste
19 being shipped for processing and subsequent disposal
20 be classified. The reason for this is that waste is
21 classified for the purposes of ensuring its safe
22 disposal. Waste is not required to be classified at
23 intermediate points between its generation and
24 disposal such as processing and storage because these
25 intermediate points do not directly affect its safe

1 disposal.

2 Once waste is ready for disposal, it needs
3 to be classified. Class A waste has the lowest
4 radionuclide concentrations and requires fewer
5 disposal or fewer controls during disposal than Class
6 B or Class C. And similarly the disposal measures for
7 Class B are somewhat less than those for Class C.
8 Notwithstanding this requirement to classify waste at
9 the time of disposal, we know it is not uncommon for
10 generators and processors to classify waste before
11 that time.

12 I want to elaborate a bit more on the
13 issue of classification for disposal in the next
14 slide. Antoinette, thank you.

15 Here is one of the two waste
16 classification tables that are in Part 61.55 in the
17 Code of Federal Regulations. This is the table
18 defining waste classes for short-lived radionuclides.
19 There's another for long-lived, but this table here
20 will help illustrate an important point.

21 One can ask what does it matter if the
22 concentration of waste moves from one column to
23 another. That happens just in the handling and
24 consolidation and processing of waste. You can't
25 avoid changing the concentration and in some cases

1 changing the classification. And it's not significant
2 in terms of protecting an intruder into a waste
3 disposal site since the concentration limits and waste
4 classes in Part 61.55, these tables, ensure safety at
5 the time of disposal for all of these values.
6 I should note that we do have other
7 regulations for ensuring safety of waste in storage
8 and during processing including the full range of
9 waste concentrations. They're just not in Part 61.55.
10 Waste classification is designed to
11 protect an inadvertent intruder into disposal or into
12 a disposal site at least 100 years after the site is
13 closed. What's its class is during operations and
14 processing has to safety consequence for disposal. So
15 one could ask if concentrations can increase as part
16 of operations why could they not be decreased as part
17 of operations.
18 Another point is that each of the waste
19 concentrations at the time of disposal has sufficient
20 controls to ensure protection of an inadvertent
21 intruder. Class C waste has more controls than Class
22 B and B more than A. Thus if the concentration of
23 waste changes and moves the waste from one class to
24 another there will still be controls adequate to
25 ensure safety. Christianne Ridge will address this in

1 somewhat more detail because there are other
2 considerations that we want to put out flat on the
3 table for discussion.
4 The point is that all of the concentration
5 and classes shown in this table are designed to be
6 protective of an inadvertent intruder. Next slide
7 please.
8 I've addressed the regulations that relate
9 to issues associated with blending of waste, low-level
10 waste, such as waste classification, recognizing again
11 that blending is not specifically addressed in any of
12 the regulations. But with respect to the Commission's
13 guidance on blending, it is contained in our 1995
14 Branch Technical Position on Concentration Averaging
15 and Encapsulation.
16 That position was developed to address a
17 provision in 10 CFR Part 61 that says "The
18 concentration of waste may be averaged over its volume
19 or weight." If one can average the concentration that
20 means, for example, that there could be small portions
21 of a component that have concentrations of one waste
22 class, but averaging the entire component would be
23 considered a lower waste class.
24 The averaging provisions in this BTP are
25 based on safety analyses again to ensure that an

1 advertent intruder is protected. The BTP contains
2 eight different sections addressing different kinds of
3 waste. It's not an easy read.
4 One section addresses mixing or blending
5 of homogenous waste such as resins. It's interesting
6 that blended waste doesn't necessarily have to be
7 averaged. Well-blended waste could have a uniform
8 concentration. In any case, the BTP contains guidance
9 on blending because stakeholders had expressed a
10 desire for guidance at that time.
11 With respect to the blending guidance, the
12 BTP advises that mixtures of waste can be blended
13 provided that the individual waste type contributors
14 to a mixture are within a factor of 10 of the final
15 mixture. Thus the BTP recommends constraints on the
16 degree of blending that can be done.
17 At the same time, the BTP states that if
18 operational efficiencies or worker dose reductions are
19 achieved through mixing, then the constraints of the
20 BTP do not apply the factor of 10 for instance. The
21 BTP recognizes that there are instances where these
22 other considerations outweigh the need to constrain
23 blending.
24 I want to note also that NRC has published
25 guidance on blending of waste for other NRC programs

1 that may be somewhat different from this guidance
2 which applies to low-level waste which gets to the
3 mixed signal issue. For example, in the
4 decommissioning program, our guidance states that soil
5 should not be intentionally mixed to lower the waste
6 class. That guidance was developed for the
7 circumstances in the decommissioning program and is
8 not necessarily applied to the low-level waste. If I
9 could go to the next slide.
10 There are two other parts of what we call
11 or what I'm calling the regulatory infrastructure that
12 are on blending. The first is a 1981 Volume Reduction
13 Policy Statement published by the NRC that states that
14 all generators of low-level waste should reduce the
15 volume of wastes for disposal. At the time of the
16 publication of that statement, the operating disposal
17 sites had reduced the amount of waste they were
18 accepting and there was an urgent need to reduce
19 volume to preserve capacity.
20 So the GAO had, which was the General
21 Accounting Office at the time, recommended that NRC
22 publish such guidance in a report and NRC did just
23 that. Since then due to the high cost of disposal and
24 other reasons, licensees have significantly reduced
25 the volume of waste being generated and waste

1 processing is performed on most waste resulting in
2 substantial reductions in volume.
3 From 1980 to 2000, pressure water
4 reactors, some of the forms of nuclear power plants in
5 the U.S., have reduced per unit volumes of low-level
6 waste from 500 cubic meters to 20 cubic meters which
7 is a twenty-five fold reduction. So this policy
8 statement was developed at a particular time in our
9 country's history to address an immediate problem and
10 since it was published generators have significantly
11 reduced volumes for reasons we believe go beyond what
12 was in the initial policy statement.
13 With respect to blended waste, if blending
14 occurs, there would be an increase in the amount of
15 Class A waste and a decrease in the amount of Class B
16 or C waste. There could also be particular
17 circumstances where waste that was blended could have
18 been volume reduced using another process if it
19 weren't blended and that would decrease somewhat the
20 overall volumes of waste disposed of. In any case,
21 this policy we know is a factor that we will consider
22 as we examine this issue and we look forward to any
23 thoughts on that.
24 Another relevant agency policy that bears
25 on this issue is risk-informed, performance-based

1 regulation. In 1997, the Commission addressed risk-
2 informed, performance-based regulation as one of the
3 20 direction-setting issues in its overall strategic
4 assessment of the agency's programs.
5 In the last decade, risk-informed,
6 performance-based regulation has been an agency policy
7 and it is one of the safety strategies in our
8 strategic plan and that strategic plan is in what's
9 called NUREG 1614. And that plan guides all the work
10 in our programs. We will examine blending issues in
11 light of this risk-informed, performance-based
12 regulation.
13 Finally, another factor we will consider
14 is the preference for disposal of waste over its
15 storage. A basic principle of managing waste is that
16 disposal is preferred over storage. The Commission in
17 1993 Staff Requirements Memorandum stated that that it
18 continued to favor disposal of low-level waste over
19 storage. We will examine blending issues in light of
20 their impact on achieving disposal rather than
21 storage.
22 So, in summary, blending is not prohibited
23 by or explicitly addressed in our regulations.
24 Classification of waste is only required at the time
25 waste is shipped for disposal and not at other

1 intermediate points for processing. Thus, changes in
2 concentrations from Class B or C concentrations to A
3 during processing are not directly related to disposal
4 safety. Third, blending is addressed in our formal
5 staff guidance. This guidance recommends constraints
6 on blending while at the same time recognizing that it
7 may be needed. And, finally, there are other factors
8 we will consider in evaluating blending issues: volume
9 reduction, risk-informed, performance-based
10 regulation, and the performance of disposal over
11 storage.
12 FACILITATOR CAMERON: Okay. Thank you.
13 MS. BUBAR: Thank you.
14 FACILITATOR CAMERON: Thank you very much,
15 Patty. And we're going to go for clarifying questions
16 now to Patty on her talk or if there is anything for
17 Larry.
18 Bill Dornsife. And you know how to
19 operate that.
20 MR. DORNSIFE: Larry, having attended the
21 previous public meeting all two days, I'm very
22 disappointed if your summary here is what the staff
23 has taken away from those discussions and let me be
24 specific.
25 The first one, blending facilitates

disposal, yes, that's true on its face. But there was an argument made that there is no current health and safety risk with the way the waste is being stored and why in such a hurry to do this. Why not wait to see if waste control specialists can in fact get import to resolve the question?

The second one, blending is a risk-informed approach, there was -- I in fact made comments that indicated that the only thing this is based on is the waste classification system and NRC has said that they're concerned about that not being risk-informed enough. And that's why they're talking about changing it. And the way that classification system was developed doesn't necessarily mean that the intruder is, in fact, protected. And I'll come back to that issue again.

You know EnergySolutions admitted that they did not do a site-specific analysis that looked at intruder protection and, if you want to a risk-informed process, you at very least need to do that.

Blending is not dilution. That was disputed. I mean NRC has no definition of blending or dilution. But other agencies and states do. And dilution and blending, blending is dilution under other state regulations and other agencies.

1 Blending doesn't significantly affect
2 volumes. Studsvik in their presentation made an
3 argument that indeed you know the available capacity
4 at EnergySolutions in their containerized cell could
5 very well be taken up and prevent disposal of other,
6 you know, reduce the capacity for other Class A waste.
7 The next one, blending is okay per NRC
8 guidance and regulations. I mean I totally disagree
9 with that. In fact, Waste Control thinks there's an
10 unreviewed safety question involved with that issue.
11 FACILITATOR CAMERON: Bill, can I just
12 interrupt you for a second? All of these are very
13 important issues and we're going to bring them forward
14 into the discussion.
15 MR. DORNSIFE: Well, I mean my point is
16 the people who didn't attend that meeting need to know
17 what was said, what the argument was.
18 FACILITATOR CAMERON: Okay. Well, let's
19 let Larry respond to that and we're going to give you
20 --
21 MR. DORNSIFE: Let me just do one more.
22 Okay?
23 FACILITATOR CAMERON: Okay. One more.
24 MR. DORNSIFE: Waste Control Specialists
25 submitted a supplemental letter on Monday which

1 performed a generic intruder analysis for waste that
2 is blended to the Class A limit for cesium and that
3 analysis shows that until you get out to 300 years the
4 intruder dose exceeds 500 millirem and that is using
5 the current NRC guidance that all sites are supposed
6 to be using for the intruder resident scenario.
7 So I think the unreviewed safety question
8 is how you can you say if you do a site specific
9 analysis and it doesn't meet the intruder performance
10 objectives that it's okay.
11 FACILITATOR CAMERON: Okay, and, Larry,
12 just let me make a couple of process points before you
13 answer this is that we are going to get -- This is an
14 opportunity for clarifying questions. I understand
15 where Bill is coming from, but that's all going to be
16 grist for the mill during our discussions.
17 And also let me just say one other thing
18 is we have representatives around the table from
19 various facilities, processors, generators, waste
20 disposal and we have people around the table from some
21 of the communities where those facilities are located.
22 We really want to hear -- We really want to discuss
23 generic issues related to blending and I'd like to
24 minimize as much as possible this facility is better
25 than that facility or this facility isn't -- questions

1 about safety about a particular facility. They are
2 important questions, but they're not really
3 appropriate for this forum.
4 So I would just make those two points
5 because I know that we're going to have the Bill
6 Dornsife's tent up and then Bill is going to say
7 something and immediately the Magette tent is going to
8 go up which is fine. But I think you know what I'm
9 saying.
10 Larry, go ahead.
11 MR. CAMPER: Let me address your last
12 point first. I mean this intruder analysis that
13 you've done we've not seen it yet. So I can't comment
14 on it. But that type of subject will be discussed to
15 some degree during Christianne's discussion. So we'll
16 explore that in more during that.
17 I apologize if the summary offends you or
18 you don't think it's thorough enough. I said during
19 my comments that it's difficult to summarize six hours
20 of dialogue into one slot. So if you don't feel like
21 it captured what was said adequately or thoroughly
22 enough, I apologize. What we were trying to do is
23 just give the participants around the table and the
24 audience in general at least some sense of what was
25 discussed during that meeting.

1 I think your comments though do
2 demonstrate precisely why I wanted to have meeting
3 with the corporations involved. I don't want this to
4 turn into a corporate debate. My model is better than
5 your model. Your model is not as good as my model.
6 What have you. That serves no utility.
7 The WCS, your comment about what's our
8 hurry and the WCS solving this problem, whether or not
9 WCS becomes successful as a disposal site for Class A,
10 B and C waste, if that were to happen, it would be a
11 good thing for the country obviously, but it's not a
12 decision criteria that would drive the NRC in
13 addressing this issue. That is simply not an issue of
14 consideration for us.
15 The matter on the table is this topic
16 called blending. Blending is a reality. It's been
17 happening. About two years ago, I directed the staff
18 to start to examine this issue called blending because
19 in my view as now expressed explicitly by our
20 chairman, the Nuclear Regulatory Commission needs to
21 take a position on this topic called blending. It is
22 timely. If we seem to be in a hurry now, it's only
23 because our chairman has directed us to prepare a
24 policy paper for a Commission vote.
25 But I would say that the important thing

here is that it's important for the Nuclear Regulatory Commission as the responsible regulator to take a position on this topic whatever it is. Because right now I would suggest to you we're going to meetings and we're hearing various entities interpret our guidance, toss our guidance around in meetings and it's the NRC's guidance. And it's our responsibility to clarify our position and formulate our position in current terms because it's a real time issue and part of that process is to get this type of input.

So if we seem to be in a hurry, that's why. But it is a timely topic and we have a responsibility.

FACILITATOR CAMERON: Okay. And the question of timeliness --

MR. DORNSIFE: A follow on for a second. Is there a summary --

FACILITATOR CAMERON: Bill, hold on one second. The question of timeliness we can explore when we get to regulatory considerations in terms of path forward.

Bill, real quick and then we're going to --

MR. DORNSIFE: Yes. Is there something, a write-up, that catches --

1 MR. CAMPER: Yes, there is a summary of
2 those meetings. In fact, if you go to the webpage,
3 the summary is included within the webpage. And if
4 you feel upon examining that summary that it's still
5 not adequate we could attempt to provide additional
6 information.
7 MR. DORNSIFE: All right. I wasn't aware
8 it was --
9 MR. CAMPER: But I really recognize --
10 This is just a snapshot and I apologize for it being a
11 snapshot.
12 FACILITATOR CAMERON: Okay. For those of
13 you who are on the phone since the webpage was brought
14 up, I'm assuming that all of you out there have the
15 slides. If you don't have the slides, you can go to
16 the NRC webpage. Up on the top of the webpage, there
17 is a tab for public meetings. If you click on that,
18 you get a drop down menu and you'll see conferences
19 and symposia there. If you click on that, you'll see
20 this blending meeting and down at the top there is an
21 URL that you can click that will give you the slides.
22 But that also has the summary that Larry was
23 mentioning.
24 Let's go to Tom Magette and over to Marty
25 and then to Christopher and Diane.

1 MR. MAGETTE: Thanks, Chip.

2 I just want to make one point really. I
3 appreciate what you had to say, Larry, about the
4 summary. I would certainly be glad to go one by one
5 through the cons. I recognize that these are not your
6 summary. They are a summary of what was said.

7 I don't think any of the cons are true or
8 relevant and I could go one by one through them. But
9 in the interest of time I won't or at least I won't
10 until they're more relevant to the discussions. So I
11 would say that to you, Bill. You don't like the pros
12 because you don't like the idea. So you can take
13 exception as you want.

14 MR. DORNSIFE: No, I have comments on the
15 cons, too.

16 MR. MAGETTE: But I take exception to all
17 the cons and I would like to make one specific comment
18 in response to something that Bill said which is
19 regarding the performance assessment at Clive and I'd
20 be glad to follow your guidance thereafter, Chip,
21 about trying to be a little bit more generically
22 focused.

23 But the Bill comments about Clive
24 performance assessments and the context of the
25 depleted uranium discussions that are ongoing and they

1 have wildly misrepresented what has been done. There
2 is a robust performance assessment at Clive that looks
3 at the waste that's been disposed there, the types of
4 waste that's been disposed of there including resins.
5 The only comment that has any relevance
6 about the performance assessment, assessments --
7 there's more than one, there are a lot of analyses
8 that have been done at Clive -- regard whether or not
9 the period of performance is sufficient to capture
10 what a radon dose might be like in a couple of million
11 years. So it's the only comment that's relevant.
12 If you want to talk about any of the
13 isotopes that are in the tables in 61.55, those have
14 been specifically addressed in a robust performance
15 assessment and to suggest otherwise is simply
16 incorrect. So that's something that's important to
17 note about what's been done.
18 FACILITATOR CAMERON: Okay and it's
19 appropriate for you to offer that in light of what
20 Bill said. But I hope we can not get into those types
21 of discussions and keep our mind on the generic
22 issues.
23 Before we go to Marty, Larry.
24 MR. CAMPER: Just quickly. What I'd like
25 to try to do if at all possible is today to separate

1 the discussion of blending from the depleted uranium
2 discussion. Two different issues. I mean I
3 understand one can draw relationships. But in our
4 mind it's two different technical pathways. The more
5 we can focus explicitly on this topic of blending the
6 more the staff will come away with something useful.
7 FACILITATOR CAMERON: Okay. Let's go to
8 Marty.
9 MR. LETOURNEAU: Since we're trying to
10 address general topics and issues at this point I want
11 to address why is Department of Energy at the table
12 for this NRC meeting and why do we care. Well, first,
13 it's important and everybody should know already that
14 the Department of Energy and the Nuclear Regulatory
15 Commission have a joint history. We were one
16 commission at one time, the Atomic Energy Commission.
17 And before the division and the split
18 between the Department of Energy and the NRC and
19 separating the commercial nuclear reactor activities
20 from the defense protection activities, there was a
21 lot of work that was done and technical basis that was
22 developed that we continue to share. So to this day
23 how the Department of Energy looks back to that
24 technical basis has a lot of similarity and a lot of
25 consistency with the Nuclear Regulatory Commission.

1 So we care when the Nuclear Regulatory
2 Commission is about to make new policy decisions about
3 health and safety issues or particular ways of
4 managing radioactive waste and radioactive material to
5 the extend that we share that same history. And it is
6 very difficult for the Department of Energy and the
7 Nuclear Regulatory Commission to have drastically
8 different ways of doing those things because we do
9 share that similar technical basis and that similar
10 history.
11 So we have a lot of experience already
12 with blending and the issues that come up with
13 blending. And we're very interested in how the NRC is
14 going to go forward with this issue.
15 Certainly we dispose of waste not only at
16 our own sites, but with each of the commercial
17 facilities that are interested in this question. So
18 that's why we're here and how we're going to
19 contribute.
20 FACILITATOR CAMERON: Thank you very much,
21 Marty. And that will resonate throughout the day with
22 any comments that you have.
23 Let's go to Christopher and then Diane and
24 then we'll go to David.
25 MR. THOMAS: Thanks Chip. I just have a

1 quick clarifying question. So statements regarding
2 blending of waste streams should not be undertaken
3 solely for the purpose of waste classification.
4 Patty, is it the NRC's position that that statement
5 only applies in circumstances of decommissioning? It
6 does not apply anywhere else.
7 MS. BUBAR: The point that I made that I
8 want to reiterate is that in our regulations it is not
9 addressed. There are two pieces of guidance that say
10 different things. So, yes, in the decommissioning
11 guidance there is a statement or in the guidance that
12 was put out for the decommissioning program there is a
13 statement that says blending just to alter the waste
14 classification is not to be done in that guidance.
15 That's really the purpose of stepping back
16 is because we know we have some inconsistent
17 statements and we want to figure out what's the best
18 way to address them.
19 MR. THOMAS: Thank you and just a follow-
20 up. I just want to make sure I'm clear. So the NRC's
21 position is this statement that I read, yes, does only
22 apply to decommissioning wastes and not to operational
23 wastes.
24 MS. BUBAR: It is in guidance that was put
25 out for the decommissioning program.

1 MR. THOMAS: Okay. Thanks.

2 FACILITATOR CAMERON: Okay. Thank you.

3 Thank you very much, Christopher.

4 Diane.

5 MS. D'ARRIGO: I was interested that you

6 said, Chip, that this is not going to be a discussion

7 about the specific facilities. But we're supposed to

8 have a theoretical discussion on whether or not we

9 should be down-blending and I don't think that's

10 really possible.

11 I also think that there's a factor that

12 transportation is an issue and that if some of this

13 was happening at the point of generation it would be

14 interesting. And I think there is a lot of -- that

15 there's a real lack of information about what happens

16 with low-level waste at the generation sites. So in

17 having a theoretical discussion we can pretend it's

18 theoretical, but I think it's a real practical reality

19 and we should face that. We're talking about moving

20 waste back and forth to go to specific facilities.

21 And we can pretend it's theoretical, but it's not at

22 all theoretical.

23 FACILITATOR CAMERON: Yes. Diane, you're

24 absolutely right. We can't pretend that the

25 facilities aren't there and you need to know facts

1 about different types of facilities. And certainly
2 that is going to illuminate the discussion of the
3 blending issues. I just didn't want to get into first
4 of all the as Larry called it one model is better than
5 the other or the Clive facility, for example, is
6 unsafe or the Studsvik facility is unsafe.
7 But, yes, we do need to talk about
8 specific facilities. So you're right. It won't be
9 completely theoretical.
10 MS. BUBAR: Chip, if I may also add to
11 that. As we are writing the paper that the chairman
12 has directed us to do, we need to write it based on
13 what are in our current regulations and what may need
14 to change if anything in our current regulations.
15 Those regulations are applicable at facilities.
16 Whether they get -- How they get applied
17 and is one facility safe or not that is not really to
18 be considered in our analysis. It may be as you say
19 very difficult to get away from that in this
20 discussion, but it's not as helpful to us if we are
21 specifically here talking about the benefits or not
22 benefits of any specific facility. That will not
23 necessarily help us in our analysis as we put forth to
24 the Commission.
25 FACILITATOR CAMERON: Okay and we'll just

1 proceed along and if we think we're crossing a line
2 we'll take note of that. But I don't want to put a
3 straight jacket around that at this point.
4 Let's go to David and then to Don. David.
5 MR. JAMES: Yes. I have just a relatively
6 simple question. That is in relation to the
7 theoretical issue of blending how long has that been
8 on the table with the NRC. When did it first arise?
9 MR. CAMPER: Well, blending happens to be
10 the issue du jour at the moment. But issues come over
11 up over time. I mean blending as a practical matter
12 has been going on. You'll hear I'm sure a number of
13 comments today. It's almost unavoidable in some
14 cases. As Patty pointed out in her comments, it's
15 operational.
16 What became apparent to us a couple of
17 years ago was that the dynamics have changed now
18 because with the closure of Barnwell and now we have a
19 situation where covert entity is developing a business
20 model to try to address this question of the lack of
21 disposal access for Class B and Class C. So while
22 we've known of it and have been thinking about it for
23 some time, it's now moved to the forefront and it
24 certainly moved to the forefront recently when our
25 chairman directed the staff to proceed to develop a

1 vote paper.

2 So we've certainly had an awareness of the

3 issue for the last couple of years. The staff has

4 been doing some preliminary work on it. The staff has

5 communicated with management about it. And then

6 recently, of course, the chairman directed us to

7 proceed to develop a policy the Commission would

8 consider.

9 MR. JAMES: I would really like to add the

10 point that it was -- revision of the BTP was one of

11 the key items in the ACNW report in 2007. So it's

12 been on the table a long time ahead of the debate

13 between WCS and --

14 MR. CAMPER: Yes, I agree. As I said a

15 couple of years ago we started looking at this and by

16 the way on that BTP point let me just clarify, David.

17 That's a good opportunity. I wanted to make this

18 point.

19 The staff did indicate that it would

20 update and risk inform the guidance in the BTP as part

21 of the strategic assessment. You're absolutely

22 correct. What the staff now wants to do though and

23 the staff has initiated that process by the way -- But

24 now that they've commissioned, the chairman in

25 particular has directed the staff to provide a vote

1 paper we will not proceed to complete the updating of
2 that guidance until after the Commission of course has
3 had the opportunity to deliberate this is a policy
4 matter. Because clearly what the Commission decides
5 to do will influence the contents of that updated BTP
6 for the obvious reasons.
7 FACILITATOR CAMERON: Okay. Let's take
8 the cards that are up on this and then we'll get into
9 Christianne's presentation and we can discuss some of
10 these issues. Let's go to Don, then go to Diane and
11 over to Marty, Mark and Ralph.
12 Don.
13 MR. SAFER: Thank you, Chip. First, I
14 wanted to just make an observation that I appreciate
15 the fact that this is a legacy hotel because this is
16 really a legacy issue. The electricity that we're
17 talking about it's here today and it's gone tomorrow.
18 And however much we all love it, and believe me I
19 love electricity as much as the next person, these
20 materials that we're talking about are the true legacy
21 of the generation of this electricity by nuclear. I
22 just wanted to make that little observation that we
23 are talking about a legacy issue. I appreciate
24 Antoinette picking the legacy hotel.
25 As for -- I just have a couple of comments

1 and reactions to the statements. There was a
2 statement made that there was no release into the
3 environment by these materials. Because it's coming
4 into Tennessee I cannot guarantee you that that is a
5 fact.
6 We have the Bulk Surveys Release Program
7 in Tennessee. Materials that come into Tennessee for
8 processing are released into four of our landfills,
9 normal, commercial, Class 1, domestic landfills, in
10 Tennessee. The Department of Radiological Health in
11 Tennessee which is the only agency that watches over
12 this hardly ever makes a visit and inspects these
13 truckloads of materials that are going from these
14 facilities to these landfills. It's as if you have
15 speed limits on the highway and you have absolutely no
16 highway patrol. How fast would we all drive?
17 Now I'm not impugning any particular
18 company. I'm just saying there's an awful lot of
19 trusting put into their hands and we all know that
20 when there's an opportunity when we know we're not
21 being watched we're not as good as when we're being
22 watched. And the Department will say that they're
23 watching it and that they're on top on it. But being
24 in Tennessee I'm not exactly sure of that.
25 And I just wanted to point that out that

1 once these materials go into Tennessee for processing
2 under current Tennessee regulations and rules you
3 cannot guarantee that some of it is not going to go
4 into two landfills in Memphis, one near Oak Ridge and
5 one in Carter County. And the one in Carter County is
6 already polluting water to the point that people
7 cannot drink the water in that community. The ones in
8 Memphis I don't know about that, but their aquifer is
9 very precious. It's where their drinking water comes
10 from. And it's some of the best drinking water in the
11 country.
12 And if the materials that are going into
13 that bulk survey for release which are supposed to be
14 very, very low-level radioactivity are in fact not so
15 low-level, then there's going to be some problems. So
16 I just wanted to point that out as one of the curtains
17 behind which it's just some information.
18 Another observation on one of the pros,
19 we're talking about facilitating the disposal of B/C
20 waste. I'm sorry. But I don't want to facilitate the
21 disposal. I want to see it be disposed of, but I
22 don't want it to be easy. These materials need to be
23 protected from the environment for basically ever. So
24 facilitation I think is a poor choice of words. It
25 may be getting into semantics, but I think it points

1 out we've got a problem with these materials and we
2 definitely have to deal with them. But it shouldn't
3 be a question of facilitation. Thank you.
4 FACILITATOR CAMERON: Okay. Thanks, Don.
5 This is all good prologue for Christianne's
6 presentation and let's keep it to the cards that we
7 have up at this point. But let me go to Diane first
8 on this.
9 Diane.
10 MS. D'ARRIGO: I wanted to say that one of
11 the ways that from a public interest perspective
12 looking at radioactive waste -- I say this at almost
13 every meeting -- is that the goal really from a public
14 perspective is to prevent public exposures. And when
15 there is a denial about routine releases or
16 significance of routine leases from facilities by the
17 facilities themselves and the supposed regulators it's
18 difficult to make an honest comparison. How many
19 different stops should waste make? How much
20 processing should go on? Making it into different
21 piles.
22 I'm just concerned that the routine
23 releases into the air and water, the routine risks of
24 transportation, are not being factored in in policy
25 making because there is a categorical denial or an

1 acceptance that there's an acceptable level. I don't
2 know if each of these facilities is allowed to give
3 the EPA's 25 millirems or whatever the different
4 amount of exposure is.
5 So a larger view of what's going on with
6 the waste I think the public interest perspective is
7 best represented by saying the minimization of
8 exposure. It doesn't mean that the permanent dump is
9 going to isolate the waste either. I wanted to put
10 that into the pot. Thank you.
11 FACILITATOR CAMERON: Thank you, Diane.
12 Marty.
13 MR. LETOURNEAU: Yes. I just wanted to
14 reflect a little bit on some of what David and Don
15 said. Certainly this is not a new issue. It may be a
16 new issue in the context that we're talking about
17 right now. But blending and concentration averaging
18 are very closely related, one of the reasons why the
19 Concentration Averaging Branch technical position was
20 referenced as part of this.
21 There are other things that are closely
22 related to this and that has to do with how work is
23 defined and how work scope is defined. And you begin
24 to get into questions of inadvertent blending versus
25 purposeful blending and what is your intent. And

1 intent is a very difficult thing to regulate.

2 For the purposes of this discussion, the

3 ultimate test that we all have to do look is as Diane

4 was saying the exposures to the public, the exposures,

5 the limits and the requirements that will have to be

6 met. So to that extent a large of what we have to

7 talk about needs to take into consideration what the

8 exposures, what the exposure limits are, what does

9 ALARA mean, what does operational efficiencies mean.

10 And intent as I said is going to be a very hard thing

11 to regulate.

12 FACILITATOR CAMERON: Okay. Thanks,

13 Marty. Let's go of Mark, Ralph and we'll finish up

14 with Tom. And then we'll go to Christianne.

15 Mark Yeager.

16 MR. YEAGER: I just wanted to clarify a

17 couple of things that I've heard from a state

18 standpoint. I'm wearing many hats today, CRCPD, Low-

19 Level Waste Forum, Compacts and basically state

20 regulators and policy makers. One thing that keeps

21 jumping out at me, Larry, Barnwell is not closed yet.

22 Barnwell is a part of the Atlantic Compact and we're

23 still open to South Carolina, New Jersey and

24 Connecticut.

25 MR. CAMPER: Thank you for that. You're

1 absolutely right.

2 MR. YEAGER: And it is an example of the

3 Compact system actually working with regard to a

4 beginning and an end.

5 With that being said, one of the things

6 that other states have expressed to me and one state

7 in particular that is involved directly with this

8 discussion is the State of Utah and there will be

9 different points during the meeting where I interject

10 comments from various states. Ultimately, the common

11 view that's been pointed out to me is ultimately the

12 responsibility for accepting blended waste should

13 remain with the state or the Compact. So ultimately

14 whether we stay with guidance or regulatory, take the

15 regulatory path, the states believe that ultimately

16 that decision should remain with them.

17 Utah being one of them, the first comment

18 I have to share on behalf of Utah and approved by Utah

19 is Utah is currently opposed to waste blending as the

20 intent is to alter the waste classification for the

21 purposes of disposal site access. So there is a

22 current policy or political, however, you want to

23 frame it, opposition to this in the state of Utah.

24 And then my other comment to the

25 representative from DOE on why they are here today is

1 I'm glad that they're here today because blending can
2 also open the door for greater than Class C
3 concentrations being blended down to B and C. So that
4 is why you are here as far as I'm concerned and I'm
5 glad you are and that is of concern to the states as
6 well.
7 FACILITATOR CAMERON: Okay. Thank you
8 very much for that, Mark, and we will -- The state
9 aspect of this when we get to regulatory
10 considerations we will definitely deal with that and
11 probably hear more about it on the way.
12 Larry.
13 MR. CAMPER: Chip, thank you very much.
14 Let me interject two comments at this point. First of
15 all, Mark, thank you. You're right. What we should
16 have said in my remarks is that the Barnwell site
17 eliminated access for 36 states to dispose of Class B
18 and Class C waste. It did not close and I apologize
19 for using that term. Thank you.
20 On Diane's point, I would make a
21 clarifying comment. Patty's point was is that
22 blending is not about releasing materials. Blending
23 is about the process. This question of blending is
24 about the process of blending C, B and A waste for
25 purposes of disposal.

1 By contrast, there are regulatory pathways
2 that we deal with that do involve releasing
3 radioactive materials even to landfills, albeit in
4 very low amounts at very low exposure levels. We
5 typically deal with those in our regulatory world
6 under the 20.2002 process as an alternate means of
7 disposal by some means not otherwise authorized in the
8 regulations. So the distinction that she was drawing
9 is that.
10 And the other point is while blending may
11 not be prohibited in our regulations which means in so
12 many words that one can pursue authorization to
13 conduct blending and that typically plays itself out
14 by making adjustments and identifying aspects of your
15 radiation safety program, your process and handling
16 program, as to how blending will be dealt with, and
17 then, of course, those activities, perhaps not enough
18 to Don's liking but are to be inspected by the
19 applicable regulator be that the state or the federal
20 entity. I just wanted to clarify.
21 FACILITATOR CAMERON: Ralph Anderson,
22 Nuclear Energy Institute. You -- Okay. Let's go to
23 Tom Magette and then, Christianne, if you're ready
24 we'll go to you next.
25 Tom.

1 MR. MAGETTE: Thanks, Chip. I just wanted
2 to make one clarifying comment. I think, Larry, you
3 just hit it on it as well in response to what Don
4 said. I don't disagree with anything that you said
5 about bulk survey for release at all. I just want to
6 make sure that it's clear that we're not generating
7 any sort of free release waste stream from this
8 process. I think that's what Larry intended to just
9 clarify. But there is no division of any portion of
10 the waste stream that is then surveyed out of a
11 classified disposal system in this process. So that
12 would be the first point.
13 And then the second point I don't know how
14 often your inspectors go to regular domestic
15 landfills, but I do know how often they come to Bear
16 Creek and I think that we would expect that the state
17 would have sufficient oversight there to be satisfied
18 with what we're doing as long as it's licensed
19 activity out of the agreement state program out in
20 Tennessee. So just those two points of clarification.
21 FACILITATOR CAMERON: And, Diane, you were
22 very passionate about throwing up your name tent when
23 you heard Tom talk. So why don't you tell us.
24 MS. D'ARRIGO: My point to Larry is that I
25 was talking about routine releases from facilities

1 that every time you've got a facility that does some
2 kind of processing even if it's compacting, especially
3 if it's heat treating or incinerating, that you're
4 going to have routine releases into air and water.
5 And that was the point that I was making.
6 I wanted to say though that
7 EnergySolutions has, I don't know, licenses/permits in
8 Tennessee to make its own determination to send
9 nuclear waste to regular landfills. I don't know if
10 you call it BSFR or BWAP or whatever it is. But by
11 being licensed to process in Tennessee and also having
12 permits for deregulating your waste, there's nothing
13 to prohibit the waste coming in from being sent to the
14 landfills. It's not the direct intent, but in the
15 processing you'll have byproduct materials that are
16 generated and I think that that -- You can't say
17 you're not going to do that because there's a permit
18 for you to do that.
19 FACILITATOR CAMERON: And example of
20 perhaps how that feeds into the decision that the NRC
21 has to make is that what aspects of the blending
22 policy that you might establish or the status quo
23 contributes to concerns like that. And I think what
24 we need to do now is go to Christianne. Thank you,
25 Larry. Thank you, Patty.

1 Christianne is going to tee up and it's
2 sort of lengthy. She's going to tee up the discussion
3 for us on safety, security and environmental. And
4 then we'll go back to all of you for discussion.
5 MS. RIDGE: Good morning. I want to talk
6 you again for being here because your comments are
7 very valuable to us.
8 This morning I'm going to focus on safety,
9 security and environmental protection issues
10 associated with the blending of low-level radioactive
11 waste. Now perhaps the most obvious safety issue that
12 comes to mind, a safety and environmental issue, is
13 one that Patty mentioned in that large scale blending
14 of waste is expected to increase the amount of
15 radioactivity disposed of at Class A disposal
16 facilities.
17 Now the increase will occur primarily
18 because currently Class A waste typically is far below
19 the radionuclide concentrations that are the Class A
20 limit. The typical Class A waste right now is not
21 right at the limit. Blended waste presumably would be
22 much closer, although obviously still below the Class
23 A limit. In this sense, the amount of radioactivity
24 disposed of as Class A waste is expected to increase.
25 And I want to remind you that this doesn't

1 represent a total increase in the amount of
2 radioactive waste that would be disposed of as low-
3 level radioactive waste. There would be obviously
4 less B/C waste disposed of as B/C waste because it
5 would be blended and then to meet the Class A limits
6 and then disposed of as Class A waste. But the amount
7 of radioactivity disposed of as Class A waste would
8 increase.
9 Now for NRC the primary concern given this
10 expected increase is whether or not the performance
11 objectives would still be met. So let me go over
12 those performance objectives very briefly.
13 The first is the protection of the general
14 population from releases of radioactivity and that
15 focuses on the safety of an offsite member of the
16 public.
17 The second which we've talked about
18 already this morning is protection of an inadvertent
19 intruder who is someone who unintentionally inhabits
20 the site or directly comes into contact with the waste
21 after the closure of the disposal facility.
22 The third performance objective is
23 protection of individuals during operations which
24 essentially means worker safety.
25 And the fourth is waste site stability and

1 I'm going to talk about each of these this morning.
2 So be allowed to operate, a licensee must demonstrate
3 to the appropriate regulator that each of these
4 performance objectives will be met.
5 Now this approach that I'm outlining
6 focusing on whether the performance objectives will be
7 met is consistent with NRC's policy of using risk-
8 informed performance-based regulation and that's a
9 term you've also heard already this morning. Now
10 allowing large scale blending but focusing on whether
11 or not the performance objectives are met would be
12 consistent with risk-informed performance-based
13 regulation.
14 Risk-informing for instance could involve
15 eliminating any arbitrary constraints on blending.
16 For example, there's a factor of ten rule outlined in
17 the Branch Technical Position Guidance and that's not
18 directly related to risk, that factor of ten rule.
19 Under a risk-informed performance-based regulation,
20 the regulatory authority which would typically be an
21 agreement state perhaps if they requested with NRC
22 assistance would ensure that the performance
23 objectives would still be met.
24 The first performance objective I
25 mentioned, the protection of the general population,

1 has historically and would continue to be demonstrated
2 with a site-specific performance assessment. Thus,
3 any impact of the expected increase in the
4 radioactivity disposed of as Class A to an offsite
5 member of the public would be addressed in a site-
6 specific analysis.
7 We've talked about the intruder a lot this
8 morning because the second performance objective,
9 protection of individuals from inadvertent intrusion,
10 is slightly different because a site-specific analysis
11 is not necessarily required in all cases. Protection
12 of inadvertent intruders is assessed generically by
13 the waste classification system and by the
14 restrictions imposed on each class of waste. To
15 explain this point I need to talk a little bit about
16 the waste classification system and give you a little
17 bit of background on how it was developed.
18 In the draft Environmental Impact
19 Statement for Part 61 which is our regulation
20 governing the disposal of low-level radioactive waste,
21 when it was initially developed analyses were done for
22 several generic waste sites that had different
23 characteristics to evaluate the impacts of waste
24 disposal to an offsite member of the public and to an
25 inadvertent intruder. These calculations were used to

1 evaluate essentially what could be disposed of safely
2 as low-level radioactive waste.
3 The case that most limited safe
4 radionuclide concentrations in waste, and I'm making
5 this distinction that it's what limited concentrations
6 rather than the total amount of radioactivity that
7 could be disposed of, was the protection of the
8 inadvertent intruder. Thus, the waste classifications
9 in the tables in 10 CFR 61.55 which define our waste
10 classification system were ultimately designed to
11 protect the inadvertent intruder because that was the
12 most restrictive case for concentrations. Whereas the
13 safety of the offsite member of the public is
14 addressed in site-specific performance assessment, the
15 safety of the inadvertent intruder is often believed
16 to be ensured by the waste classification system and
17 the disposal requirements imposed for each class of
18 waste.
19 Because the system was designed to protect
20 the inadvertent intruder, NRC requires that waste be
21 classified prior to disposal and this is a point that
22 Larry and Patty also mentioned this morning not at
23 intermediate points during generation of processing
24 which is not to say that we don't care about those
25 intermediate points. But we have other regulations to

1 address the safety of workers during those
2 intermediate points.
3 And the waste classification system was
4 not designed specifically to protect workers during
5 disposal. Thus, there are no NRC requirements to
6 classify waste during processing.
7 Now we speak colloquially of changes to
8 the waste class during processing. I want to be a
9 little more precise for a moment because when we say
10 that what we're really saying is that the radionuclide
11 concentrations change during processing. The waste
12 classification isn't truly changing during processing
13 because the waste doesn't have a classification until
14 the time of disposal.
15 Now in practice radionuclide
16 concentrations in the waste do change during handling,
17 consolidation and processing. In fact as we discussed
18 already this morning, the Branch Technical Position on
19 Concentration Averaging specifically acknowledges
20 blending for operational efficiency or to reduce
21 worker dose without regard for changes in radionuclide
22 concentrations that may result. These changes in
23 radionuclide concentrations during processing do not
24 represent a change in the risk to the inadvertent
25 intruder because only the characteristics of the waste

1 at the time of disposal affect the inadvertent
2 intruder.
3 Now I was careful just there to say that
4 the characteristics of the waste at the time of
5 disposal and not just the radionuclide concentrations
6 at the time of disposal affect the safety of the
7 inadvertent intruder. During this public process,
8 we've heard comments that creating more Class A waste
9 is better because Class A waste is safer than Class B
10 waste. We've heard the opposite comment that keeping
11 more waste as Class B/C waste is better for the
12 intruder because Class B/C waste is required to be
13 more resistant to intrusion and to have more intruder
14 protections.
15 So in considering your own opinion on the
16 issue I ask that you consider that it's both the
17 radionuclide concentrations and the disposal
18 requirements that go with them that impact the safety
19 of the intruder and to some extent the offsite member
20 of the public. One cannot simply conclude that it is
21 safer to dispose of Class A waste or Class B waste.
22 As Patty mentioned this morning, all the waste classes
23 are designed so that they are safe for the intruder
24 and for offsite members of the public.
25 Specifically, with respect to blended

1 waste, I should point out that blended waste was not
2 specifically considered during the original
3 development of the NRC waste classification system.
4 And in fact there are some important differences
5 between blended ion exchange resins and ion exchange
6 resins are a type of waste that is amendable to
7 blending that is principally the type of waste I think
8 many people have in mind this morning. There are
9 differences between that waste stream and the waste
10 streams addressed in the Part 61 draft environmental
11 impact statement.
12 One major consideration is that in the
13 original analysis supporting the waste classification
14 system NRC assumed that not all the waste would be
15 present at the classification limits. Thus, a waste
16 stream that is blended so that all of the waste is
17 near or at the Class A limits is different from what
18 NRC considered in the original analysis.
19 Now that said, we are aware of other
20 differences. For example, in the draft environmental
21 impact statement analysis we did not assume that the
22 level of engineering and all of the protections that
23 might be in place at a specific facility were in
24 place. As I said, we presumed generic sites and for
25 Class A waste we assumed relatively minimal

1 engineering because of the nature of the waste that
2 would protect the inadvertent intruder. So a site-
3 specific analysis may yield different results.
4 There are other differences of an even
5 more technical nature. For example, the type of
6 dosimetry that we used in the original analysis is not
7 the most modern type of dosimetry. We used ICRP 2.
8 If we did the analysis again we would use a more
9 modern type of dosimetry.
10 So while I need to point out to you that
11 this type of waste was not explicitly considered in
12 our intruder analysis, I also want to point out that
13 it's not a simple matter of using the new
14 concentrations saying, "Well, this waste would be ten
15 times more concentrated and therefore we multiple the
16 dose by ten." It's not a simple matter and the
17 appropriate regulators may want to look at intruder
18 analyses again to ensure that potential inadvertent
19 intruders would be protected if blended waste were
20 disposed of.
21 So far I've talked about the performance
22 objectives for protecting the general population, the
23 first performance objective, and the performance
24 objective for protecting inadvertent intruders.
25 Another part of the performance objectives that I have

1 not discussed yet is the requirement to keep doses as
2 low as is reasonably achievable which we call ALARA,
3 ALARA considerations.
4 Both the performance objectives for
5 protecting members of the general population and the
6 performance objective for protecting workers require
7 that doses be kept as low as is reasonably achievable.
8 And during this public process we have heard many
9 comments where people say, "This is ALARA. This is
10 not ALARA. You should allow this. You should not
11 allow this because of ALARA considerations."
12 I want to start first by clarifying how
13 NRC applies ALARA requirements. Essentially NRC
14 requires that individual licensees in addition to
15 meeting the dose requirements in the regulations also
16 conduct activities so that doses to the offsite
17 members of the public from releases of radioactivity
18 and doses to onsite workers are kept as low as is
19 reasonably achievable.
20 We apply this requirement to individual
21 licensees. We do not apply ALARA requirements such
22 that we say one business model is allowed and another
23 business model is prohibited because one is ALARA and
24 one has a slightly different dose. As long as both
25 meet the NRC dose requirements, we apply ALARA

1 requirements to individual licensees and not to make a
2 comparison between licensees or among licensees.
3 Now that said, we recognize there may be
4 dose consequences of allowing or prohibiting large
5 scale blending. If we were to conduct a rulemaking,
6 we would consider these comparisons formally in a NEPA
7 analysis, and by NEPA of course I mean the National
8 Environmental Policy Act, which would require us to do
9 an environmental review. If we did a rulemaking, we
10 would consider these dose comparisons formally.
11 This is one point we may want to discuss
12 further during the talk later today about regulatory
13 considerations. And that talk is going to touch on
14 pass forward and how we might address this issue in a
15 regulatory perspective.
16 At this time, I just want to introduce
17 some of the technical issues and just give some
18 examples. One comment we've heard is that allowing
19 large scale blending could increase total collective
20 worker dose because there would be more waste
21 handling. So quite simply you're taking waste from
22 place A to place B. People are handling it more
23 during blending. People have commented that that
24 could increase total cumulative worker dose.
25 On the other hand, we've heard the

1 opposite comment that large scale blending would
2 actually be better for workers because instead of
3 doing some of this waste processing at the generation
4 point this waste processing would be done at a
5 dedicated facility that would have more built-in
6 protections. We've heard both arguments. If we move
7 to the next slide.
8 And I'm sorry. Continuing with the idea
9 of ALARA requirements and worker doses, another
10 argument we've heard is that prohibiting large scale
11 blending could increase collective worker dose because
12 more waste would be stored causing more dose to
13 workers who monitor the waste during storage.
14 So there are many facets of this dose
15 comparison. We're probably going to hear a lot more
16 of them this morning. But I just want to give you an
17 idea of some of the types dose comparisons we've
18 heard.
19 Another concern we've heard relates to
20 waste characterization. The concern is that it would
21 be difficult to mix the waste so that it was
22 homogenous enough so that all of the waste is actually
23 below the Class A limits. We've heard the concern
24 that it would take far more radiological
25 characterization to show that the waste really meets

1 all the applicable radionuclides. And when I say far
2 more I mean far more than typical Class A waste now
3 that are far below the limits. Essentially if you're
4 already far below the limits it's easier to show that
5 you're below the limits than if you're closer to the
6 limits. And I think that makes a certain amount of
7 sense.
8 This raises a potential concern for the
9 inadvertent intruder who may hit hot spots of waste
10 that was insufficiently blended and disposed of as
11 Class A waste without the additional protections
12 required of Class B/C waste. Also related to worker
13 safety we've heard the concern that because of the
14 need for more thorough waste characterization there
15 may be an increase in cumulative worker dose just
16 because people would need to be near the waste to
17 measure it. Alternately, as I mentioned earlier,
18 we've heard the opposite though that the facilities
19 would be specifically designed so that there wasn't a
20 significant increase in worker dose.
21 In either case, it does appear that it
22 would be more challenging for regulators to determine
23 that blended waste met the Class A limits than it is
24 to show that typical Class A which is further below
25 the Class A limits meets the requirement.

1 I've talked about the first three
2 performance objectives. The last performance
3 objective is for the stability of the disposal site
4 after closure. The requirement for the stability of
5 disposal site is intended to present slumping of the
6 waste to limit ponding of the water on top of the
7 waste and in that way to limit infiltration of water
8 through the waste which protects the environment and
9 limiting this infiltration protects the environment
10 and protects an off-site member of the public.
11 Beyond the waste site being required to be
12 stable, there are additional physical stability
13 requirements applied to Class B/C waste that do not
14 apply to Class A waste. These additional stability
15 requirements beyond stability of the disposal site
16 which applies to all waste classes are intended to
17 protect a potential intruder by ensuring that the
18 waste is recognizable and non-dispersable. So
19 essentially if you can see that it's waste when you
20 hit that's expected to be protective because you'll
21 limit your interaction with it.
22 The physical stability considerations I
23 just mentioned are regulatory requirements and so they
24 apply generically. Now in current practice in some
25 cases Class B/C waste also is processed to be more

1 chemically stable. These chemically stabilized forms
2 of B/C waste may reduce the leechability of the waste
3 and minimize its getting into groundwater at least
4 compared to unprocessed Class A waste.
5 A concern we've heard during this process
6 is that large scale blending would be detrimental to
7 the general public, the intruder and the environment
8 because stabilized Class B/C waste could be replaced
9 with unstabilized Class A waste. And again that's a
10 generic concern because there are requirements for the
11 physical stability for Class B/C waste and there
12 aren't requirements for the physical stability of
13 Class A waste.
14 So far I've been talking about the
15 performance objectives that apply for low-level
16 radioactive waste disposal facilities. I'd also like
17 to take a moment to discuss the alternative to
18 disposal which is continued storage.
19 During this public process, one of the
20 main points we've heard in favor of allowing large
21 scale blending is that it would allow a disposal
22 pathway for some of the B/C waste created by
23 generators, but currently do not have access to a B/C
24 waste disposal facility. In this way, large scale
25 blending would decrease storage of waste onsite and

1 enable disposal of waste that would otherwise be
2 stored. NRC has concluded that the waste can be
3 stored safely onsite, but we also recognize that
4 disposal is preferable to storage. So we recognize
5 that creating a disposal pathway for this waste would
6 be a good thing.
7 However, we've also heard that opposite
8 argument that allowing large scale blending would
9 ultimately increase the amount of storage of certain
10 types of B/C waste. That may seem counterintuitive.
11 So let me explain that argument.
12 Irrespective of NRC's position on
13 blending, there are certain types of B/C waste, such
14 as sealed sources as one example, that are amenable to
15 blending. The comment that we've received is that one
16 unintended consequence of allowing blending is that it
17 may undermine the potential development of disposal
18 sites for B/C waste by limiting the B/C waste stream
19 and essentially I guess in the most practical terms
20 limiting revenue for those facilities because of the
21 limited B/C waste stream.
22 If this occurred, there would continue to
23 be limited or no disposal options for certain types of
24 B/C waste that are not amenable to blending including
25 sealed sources. In the specific case of sealed

1 sources, this increased storage people have commented
2 also may raise security issues.
3 Now I would like to point out again that
4 NRC believes these sources can be stored securely
5 onsite. However, we also recognize that disposal is
6 preferable to storage and so we recognize the concern
7 about these types of waste that are not amenable to
8 blending.
9 And finally I just want to make one last
10 note on disposal. During this process, we've heard
11 several comments about implications for disposal
12 capacity. And I'm raising this issue here because we
13 know this topic is a concern for many of you. So I
14 wanted to mention it early in the morning.
15 I want to assure you that we've heard
16 comments on disposal capacity that we've received so
17 far and we look forward to additional comments on the
18 issue. However, this is really more of a practical
19 issue. So we'd like to defer the discussion of
20 disposal capacity considerations to Brooke's talk
21 later this morning on practical considerations.
22 And why do I say this is a practical
23 consideration issue? Because blending as we are
24 considering it means mixing existing waste streams.
25 It does not include mixing clean material with waste.

1 And as I said again theoretically independent or
2 practical considerations it doesn't include any
3 intention or any possibility of mixing waste so that
4 it would be to such a low concentration that it would
5 then be released into the environment.
6 I did hear the comments from Tennessee
7 this morning. But I think that though Larry addressed
8 those I'd just reiterate that what I'm saying here is
9 that that is not what we mean when we talk about
10 blending. If there are practical reasons that the
11 implementation meets with some comments from the
12 panelists this morning, we recognize that and we hear
13 that.
14 But there's no theoretical reason that
15 blending impacts disposal capacity. We're talking
16 about mixing existing waste streams. And so the
17 volume, the total volume, of waste theoretically
18 there's no need for it to increase.
19 Now practically speaking because of the
20 way waste is processed and disposed of today, there
21 are reasons why large scale blending is expected to
22 have an effect on the total volume of waste being
23 disposed, although not the total activity of waste.
24 There are practical reasons why it may affect the
25 total volume of waste and therefore affect disposal

capacity.

As I mentioned, Brooke is going to discuss some of these practical implications on disposal capacity in her talk in more detail. And we'd ask you to defer your comments about disposal capacity until that discussion session a little later today.

We're going to open this out for our first discussion session and I've covered some of the potential impacts on safety, security and the environment for you to consider. As I said, I've covered some of the issues. There are others. We received some comments just this morning about the risks of routine transportation and I think that type of comment is very valuable. It's a type of risk that has implications and we're looking forward to comments on these and other issues related to safety, security and environmental impacts of large scale blending.

Now specifically we'd like to focus the discussion on the question up here on the screen. We'd like to ask what safety, security and environmental considerations are associated with the blending of low-level radioactive waste and particularly large scale blending that we're discussing this morning, not the smaller scale blending that's ongoing right now at generation

1 facilities.

2 Thank you.

3 FACILITATOR CAMERON: Okay. Thank you,

4 Christianne.

5 Christianne is going to participate from

6 her seat. Let me ask you all this. Before we dive

7 into this, should we take a break?

8 (Chorus of yeses.)

9 Can we take a break now? Okay. Let's

10 take a break for 15 minutes and then we're going to

11 come back and I have a clarifying question for

12 Christianne when we get back. So take 15 minutes and

13 at lunch time we're going to be able to open up this

14 wall here. It should give us a little less of a

15 claustrophobic feeling. Off the record.

16 (Whereupon, at 10:26 a.m. the above-

17 entitled matter went off the record and resumed at

18 10:43 a.m.)

19 FACILITATOR CAMERON: On the record. Just

20 a couple of administrative notes. We're not going to

21 let Antoinette forget that she selected the Legacy

22 Hotel and thanks, Don, for reminding us all of that.

23 But also this is one of the big enchilada

24 issues so to speak, safety. So if we need take more

25 time, if we get behind and we need to go to practical

1 considerations after lunch that's fine because we have
2 some time built in at the end of the day. We have
3 some wiggle room there.
4 And I just wanted to get a clarification
5 from Christianne before we start. In the NRC's
6 decision making on what it wants to do on blending
7 including maintaining the status quo, when you're
8 talking about safety, security and environment, we
9 have to look at three different types of facilities
10 plus transportation as Diane pointed out so that we
11 need to take a look at all of these, generator,
12 processor, disposal, in terms of deciding what our
13 policy is going to be. Is that correct?
14 MS. RIDGE: Yes. I think that's a fair
15 thing to say.
16 FACILITATOR CAMERON: Great.
17 Who wants to start us off with one of the
18 major safety issues here? Do you want to go ahead,
19 Don? We'll go to Don and then we'll follow that
20 thread and I know there's other people here.
21 MR. SAFER: Thank you. I wanted to drill
22 down into the transportation issue since Tennessee it
23 looks to me and that's what I want to get
24 clarification on here. It looks to me that we're
25 talking about greatly increasing the volume of sheer

1 volume of radioactive materials plus the amount of
2 radioactivity that are going to be either on the
3 highways, I-40 particularly since it's what goes to
4 Oak Ridge. And then from Oak Ridge to Utah, we're
5 talking about going through Nashville and Memphis or
6 going the northern route Nashville through St. Louis.
7 If it's on the rails then it would probably still
8 come through Nashville, although it might go a
9 different route.
10 But I wanted to, like I say, drill down
11 into transportation and find out if it's on trucks
12 what kind of trucks, how they're going to be shielded,
13 how they're going to be marked, how first responders
14 are going to know if there's an accident and we have
15 accidents all the time in Tennessee on our highways.
16 I'm sure you don't have any up here in Washington.
17 (Off the record comments.)
18 Just tankers, yes, which points out. But
19 anyway if there's an accident how the first responders
20 in a rural county in Tennessee are going to know or
21 how the first responders in Nashville should an
22 accident happen in the inner loop within the
23 metropolitan area, how those first responders are
24 going to know what the materials on board are, how the
25 public can be assured that there's very little

1 likelihood of those materials being released and how
2 much of an increase in volume we're talking about from
3 the current situation which it looks to me like if
4 you're going to bring B/C waste to down-blend into A
5 then you're going to have to bring in a pretty good
6 amount of A waste in order to do that. And a lot of
7 that A waste isn't even coming to Tennessee now. So
8 strictly from a not-in-my-backyard perspective I'd
9 like to know what this is going to mean.
10 I-40 by the way which runs from Knoxville
11 to Memphis is one of the most heavily traveled
12 interstates in the country. It goes through some
13 mountainous regions in the eastern part of the state.
14 And it's two lanes most of the way. So I'd just like
15 to start off the questioning on transportation.
16 FACILITATOR CAMERON: Could someone mute
17 their phone out there? I don't know. I'm trying to
18 identify what that noise is. But if you could just
19 mute your phone.
20 MS. D'ARRIGO: *6, is that what they do?
21 FACILITATOR CAMERON: What is it?
22 MS. D'ARRIGO: *6 or something like that.
23 Maybe they don't know how to mute it.
24 FACILITATOR CAMERON: Okay. Well, it
25 seems like it's stopped. Thank you.

1 Let's spend a few minutes on
2 transportation and get that thread out and
3 Christianne.
4 MS. RIDGE: Yes. Don, before we speak,
5 before the panel speaks, to your question, I was just
6 hoping I could ask for a clarification. You started
7 by saying that we were talking about vastly increasing
8 the amount of the volume and radioactivity of waste on
9 the roads if I heard you correctly. And I'd just
10 maybe for you to just explain a little better why
11 that's your conclusion that we would be vastly
12 increasing the volume --
13 MR. SAFER: Okay.
14 MS. RIDGE: -- of the waste on the roads
15 and the radioactivity as well or were you speaking
16 specifically about roads in Tennessee?
17 MR. SAFER: Of course, the facility is in
18 Oak Ridge, Tennessee and so these materials are going
19 to come into Oak Ridge and then leave Oak Ridge. And
20 currently for the states we're talking about, the 36
21 states, the B/C waste that we're talking about is not
22 going anywhere. So that obviously logically has got
23 to be an increase because currently no B/C waste is
24 coming into Oak Ridge.
25 MS. RIDGE: So it would be on the roads

1 now as opposed to being in the roads later and more of
2 it would be going into Tennessee as opposed to going
3 somewhere else.
4 MR. SAFER: If this proposal were to be
5 approved and the process were to be robustly adopted
6 by the industry, then I'm assuming that we're going to
7 have B/C waste coming from 36 states or somewhat close
8 to that and I understand there's competing
9 propositions out there. But of course they lead to
10 Tennessee as well I might note at this point. And
11 that's not a coincidence and we can get into that
12 later.
13 So it is to me not a question -- I don't
14 even -- it has to increase because currently no B/C
15 waste is coming into Tennessee.
16 MS. RIDGE: Okay.
17 MR. SAFER: The amount of A waste I don't
18 know how much A waste is coming in to the different
19 processes in the state to be then shipped to Utah.
20 But I'm assuming a good bit of this A waste can go
21 straight to Utah from wherever it's being produced. It
22 does not have to come through Tennessee. So, for
23 instance, something in the upper Midwest where the
24 roads are -- You don't get to Utah from Chicago by
25 going through Nashville.

1 Plus you need -- And of course I don't
2 know what the specifics are in terms of tonnage, but
3 you need a certain amount of material to be able to
4 down-blend these materials to get the B/C to magically
5 become A. And I'm assuming that's a pretty good
6 volume of A waste.
7 MS. RIDGE: Right. And that waste is
8 waste that would be disposed of as Class A waste to
9 begin. So that's not really an increase in tonnage.
10 But I do appreciate the point that they're now taking
11 maybe a longer path and I certainly do understand that
12 point.
13 MR. SAFER: Yes.
14 FACILITATOR CAMERON: Let's get some other
15 comments on this and I just wanted to make sure that
16 everybody understands. There is no proposal on the
17 table yet from the NRC. Okay. Just so everybody
18 understands that. This dialogue is meant to help the
19 NRC decide what they should do.
20 And there's someone on the phone. I hate
21 to nag you, but if you hit the mute button or whatever
22 button it is. It sounds like typing or something
23 that's coming through and it's bothersome. Thank you.
24 MS. RIDGE: And thank you for clarifying
25 that question.

1 FACILITATOR CAMERON: Okay. Let's do the
2 transportation.
3 Mark, go ahead. We'll go to Mark first.
4 Transportation.
5 MR. YEAGER: Yes. I know there are other
6 flags ahead of me, but I wanted to address your
7 comment about transportation and how your local
8 responders would react to these Class 7 shipments
9 coming through their jurisdictions.
10 I don't know if you're familiar with Elgan
11 Ursay from Tennessee. He is involved with
12 transportation of Class 7 in Tennessee. He is
13 involved with MERTT training and MERTT training is
14 provided by the DOE and this is a function of DOE
15 activities out of Oak Ridge. So local responders are
16 currently receiving training on transportation and
17 incident response.
18 I would ask you to just get in touch with
19 him and then if you have concerns on certain locations
20 that need training or you're aware of folks that need
21 training I would definitely get in touch with him.
22 And DOE is very proactive on providing that training
23 as is the state of Tennessee because they are provided
24 grant money to provide that training.
25 FACILITATOR CAMERON: And since we've

1 heard DOE mention, Marty had something, let's go to
2 Marty and then we'll go to --
3 MR. YEAGER: One thing before I close out.
4 I've been in your position before. The State of
5 South Carolina used to be open to the states that
6 don't currently have access and I have personally
7 responded to many transportation accidents and
8 incidents.
9 One of the things that I'm uncomfortable
10 with is transportation because I do feel that the
11 generators and the processors do a great job making
12 sure that material is safely transported. I've
13 responded to transportation incidents involving Type B
14 cask, Type A cask and drums and all the packaging has
15 withstood accident conditions in addition just to
16 transportation incidents just normal to going from
17 point A to point B.
18 So it's not to say that you can't have
19 something very bad happen. But I do think with the
20 degree of material we're talking about, B/C, that
21 requires to borrow that famous term robust. It
22 requires very robust packaging. So that would be in a
23 cask rather than a van. So you have some inherit
24 safety features.
25 MR. SAFER: One clarification. If it's

1 not classified until it leaves to go to disposal, how
2 do you know it's B/C when it's on the way for
3 disposal?
4 MR. YEAGER: Well, the conditions of
5 transportation based on DOT regulations are based on
6 dose rate. So therefore if you had B/C, it's going to
7 significantly require -- it's more than not it's going
8 to require a cask that has some shielding already in
9 place.
10 MR. SAFER: So it's both classified and
11 not classified.
12 MR. YEAGER: Yes, but we're dealing with
13 two --
14 MS. RIDGE: I'm not sure that's fair.
15 MR. YEAGER: Well, we're dealing with --
16 When you put it on the road, you're dealing with dose
17 rates and DOT regulations. So in order to meet some
18 of these dose rate limits for transportation you need
19 packaging that has shielding in it and is inherently
20 sound as opposed to a closed van for example.
21 MR. YEAGER: I understand.
22 FACILITATOR CAMERON: Don, let's get some
23 -- let's get some more information on the table.
24 Marty, Ralph, Bill, David, Christopher.
25 Marty, why don't you go ahead?

1 MR. LETOURNEAU: Yes. To deal with the
2 topic that Don and Mark were talking about, regardless
3 of the classification, yes, the hazard and the dose
4 rate associated with the material whether it's called
5 waste or not dictates the type of DOT containers,
6 transportation, notifications, emergency response that
7 need to be in place. And that will be again
8 irrespective of whether the waste is classified or
9 not. So the hazard does dictate the amount of control
10 that's in place.
11 But what Don brings up is a good point in
12 that we have to separate out two different safety,
13 security and environmental concerns and one is the
14 operations of waste processors who might be blending
15 waste versus the impact of blending waste on disposal
16 activities and those are two different things.
17 They're going to have different potentials for impact.
18 Not to say that it's not an issue, but
19 when the Department of Energy prepared their waste
20 management programmatic EIS in the late '90s looking
21 at how waste was being transported from different DOE
22 sites across the country what was identified was that
23 the primary hazard associated with the transport of
24 waste was the mechanical hazard of trucks, not
25 radiation hazards.

1 So, yes, there is an increased hazard of
2 increased volumes having increased trucks coming into
3 a particular location. And that is one issue to be
4 addressed.
5 The other issue being once a waste is
6 blended and is going to disposal does the disposal
7 facility, do the performance objectives, do the
8 limits, care whether that waste has been blended or
9 not. No, they don't. And particular to the extent
10 that a site-specific performance assessment determines
11 what concentrations or what volumes can be disposed of
12 without exceeding the performance objectives.
13 FACILITATOR CAMERON: Okay. Thanks,
14 Marty. We're going to go to Ralph and then we're
15 going to go to Bill and Christopher and David and then
16 to Christianne to see if we've handled the
17 transportation issue and then go on to another issue.
18 Ralph.
19 MR. ANDERSON: Yes. I just wanted to
20 offer some additional verification. As I think you've
21 probably heard but just to connect the dots, there are
22 entirely separate and distinct regulations that cover
23 transportation of hazardous materials including
24 radioactive materials that are completely independent
25 of whether that materials happens to be waste or

1 whether it happens to be medical radioisotopes being
2 shipped to a hospital. So there isn't a direct
3 relationship between the issue of classifying material
4 for the purpose of disposing of it and the required
5 classification of material for transport.
6 I'm just saying that when you look at that
7 framework it doesn't have anything to do with waste
8 disposal. It's a consideration for the reasons you've
9 named in NRC's thoughts about where it might go from
10 here on blending and its impact on transportation.
11 But be assured that all of the material that is
12 shipped in any fashion, you know, by air or by truck,
13 by sea, is regulated under separate and distinct
14 regulations.
15 They specifically not only look at dose
16 rate. They also look at the amount of radioactivity.
17 They actually have two schemes for classification.
18 The dose rate is a criteria that has to be met to
19 ensure that exposures to people incidental to
20 transportation as well as associated with postulated
21 accidents would be below certain criteria.
22 The second point I wanted to make is that
23 it's entirely understandable why anyone who might be
24 specifically affected by the re-routing of radioactive
25 waste materials as a function of changes in the

1 process would be concerned about that. I mean I know
2 I would be.
3 You do have to connect that though with at
4 a federal level with the NRC. They're going to look
5 more collectively at the entire country and the
6 comparisons are going to tend to reduce the specific
7 significance of where the waste goes and probably
8 focus more on what the sum total is in terms of the
9 additional transportation miles and potential
10 increased exposure to the public and things like that.
11 And undoubtedly and intuitively one would
12 assume that there would be a net increase in the
13 amount of transportation miles associated with an
14 additional processing step that might not otherwise
15 occur. However, the reference point for that should
16 be the environmental impact statement overall that
17 supports the DOE regulations for transportation of
18 hazardous materials. So that would probably be the
19 comparison benchmark for whether this represents a
20 significant change in what's previously been analyzed.
21 Anyway for what it's worth.
22 FACILITATOR CAMERON: Thank you very much,
23 Ralph. Let's go to David and then we'll go to Bill
24 and Christopher.
25 MR. JAMES: I just have a few points to

1 make. One you mentioned in your presentation that the
2 concentration averaging doesn't proportionately
3 increase risk or something to that effect that it
4 isn't a direct relationship as how many.
5 FACILITATOR CAMERON: David, can I just
6 interrupt you? Could you just -- Do you have
7 something on transportation right now?
8 MR. JAMES: Are we talking about
9 transportation?
10 FACILITATOR CAMERON: Yes, right now. And
11 then we're going to go these points that you're
12 making. But I just want to finish up this
13 transportation thread.
14 MR. JAMES: No, I don't have anything.
15 FACILITATOR CAMERON: Okay. Well, we'll
16 come back to you as soon as we're done with
17 transportation.
18 Bill and then Christopher and then
19 Christianne.
20 MR. DORNSIFE: This issue did come up in
21 the previous company public meeting and it was our
22 opinion that to adequately address this issue, the
23 transportation risk issue, the worker dose issue and a
24 number of other related issues the best way to do that
25 would be to require either a regulation that has to do

1 an EIS that evaluates what the impact is or something
2 that requires a NEPA analysis to demonstrate what the
3 potential increase in risks are.
4 FACILITATOR CAMERON: Okay. Thank you,
5 Bill.
6 Christopher.
7 MR. THOMAS: Along those same lines, this
8 is really just a clarifying question. Christianne,
9 from your presentation I was to understand I think
10 that in terms of determining ALARA and operational
11 efficiencies you would look at that from the
12 perspective of an individual licensee and not overall.
13 So I'm just -- I guess my clarifying question is
14 where would -- what is the appropriate venue to
15 determine the impacts of a given blending arrangement
16 with the transportation involved in such. Where is
17 the appropriate forum to do that analysis? Because I
18 don't think it would be -- That's not at the
19 individual level of the licensee exactly.
20 MS. RIDGE: Right.
21 MR. THOMAS: It's sort between licensees.
22 MS. RIDGE: Exactly. And I think that
23 there has been some talk this morning of the National
24 Environmental Policy Act or NEPA evaluation. That
25 would certainly be a place where we would evaluate

1 issues like transportation. That's obviously
2 something we look at in that kind of environmental
3 analysis.
4 In the paper we're preparing for the
5 Commission we are trying to understand and represent
6 some of these broader safety issues. But for
7 something specific and Jim can probably -- Sorry.
8 Other folks from NRC can probably jump and add to
9 this. But I think as far as specific issues like
10 transportation that would probably be in a specific
11 environmental analysis.
12 FACILITATOR CAMERON: Let me just ask
13 Christopher. You're using transportation as an
14 example, but if your concern is where is the broad
15 spectrum of potential impacts going to be examined.
16 MR. THOMAS: That's right.
17 FACILITATOR CAMERON: And one possibility,
18 Christianne is talking about the NEPA analysis. It
19 doesn't necessarily accompany every type of agency
20 action.
21 MR. THOMAS: And that's what I wanted to
22 clarify next, Chip. I'm sorry to jump in, but I just
23 wanted to specify. Then that would happen under if
24 the NRC moved forward with a rulemaking. Correct? It
25 would not be under the other paths forward.

1 MS. RIDGE: Right.

2 MR. THOMAS: Okay. Thanks.

3 MR. DORNSIFE: You could do I guess a

4 modified. Do a NEPA analysis up on your own if you

5 wanted to, right?

6 MS. RIDGE: I suppose that's --

7 FACILITATOR CAMERON: Maurice is going to

8 --

9 MS. RIDGE: Yes, that's a regulatory

10 question.

11 FACILITATOR CAMERON: -- talk about it in

12 his regulatory considerations. He's going to talk

13 about options and, Bill, I think you're correct on

14 this. But we need to -- Why don't we thoroughly

15 ventilate that when we get to regulatory

16 considerations.

17 Christopher is not solely referring to a

18 NEPA analysis. He's looking for some type of broad

19 range analysis of all of the issues.

20 MS. RIDGE: And if I could just clarify

21 what I said in my talk on Christopher's point. When I

22 said that ALARA was applied to individual licensees, I

23 hope I made it clear that it's not that we're

24 unconcerned about these dose comparisons and these

25 other potential safety issues. We are concerned about

1 them.

2 But we had heard a lot of points referring

3 to the specific regulatory ALARA requirement and I

4 wanted to clarify that that's not how we apply it

5 among licensees to say this business model is better

6 than that business model and putting it under the

7 regulatory requirement that doses be kept as low as

8 reasonably achievable.

9 That's not how we apply that which is not

10 to say that we're unconcerned about the dose

11 comparisons. But that's not the specific regulatory

12 blends that we would see that through.

13 FACILITATOR CAMERON: Okay. And I have

14 this on the parking lot for later on. Very important

15 issue. Is there any more on transportation before we

16 go to Don James?

17 MS. RIDGE: I just wanted to clarify.

18 FACILITATOR CAMERON: David James. Sorry,

19 David.

20 Ralph, do you have something else on

21 transportation?

22 MR. ANDERSON: That's all right.

23 Christianne had something else.

24 FACILITATOR CAMERON: And, Tom, do you

25 have transportation?

1 MR. MAGETTE: Yes.

2 MS. RIDGE: This is short, but I did just
3 want to clarify in response to Don's comments
4 something that I said in my talk and I did say that
5 waste doesn't have a classification until disposal and
6 that the classification is geared towards protecting
7 the inadvertent intruder from disposal. And I think
8 it's already been well covered that there are other
9 regulations that apply.

10 I just want to be clear that I didn't mean
11 to say that the waste isn't characterized or that we
12 don't know what the radionuclide concentrations are or
13 that there aren't other restrictions on it. I just
14 meant specifically saying that it's A, B or C is
15 something that we use to protect individuals in the
16 context of disposal. And as I mentioned there are
17 other requirements to protect workers and it's been
18 well covered by other individuals this morning that
19 there are other transportation requirements.

20 I didn't mean to imply that we pretend we
21 don't know what's in the waste, that it's not
22 characterized, just that we use this system for this
23 purpose.

24 FACILITATOR CAMERON: Thank you. Thank
25 you, Christianne.

1 Let's go to Ralph and Tom and then let's
2 see if we can flag another safety issue by going to
3 David.
4 Ralph.
5 MR. ANDERSON: Yes. Even though it isn't
6 directly transportation, it's related because I think
7 the point is very important and that's public
8 involvement. For practical purposes until and unless
9 NRC decides to take some very specific regulatory
10 action like rulemaking or something else that we
11 constitute essentially a record of decision, what you
12 ought to consider is that this opportunity for public
13 engagement and the opportunity to provide written
14 comments may turn out to be the best opportunity on
15 this particular issue that you have because if NRC
16 determines that they're not going to pursue a
17 rulemaking or pursue something that would be analogous
18 to a record of decision.
19 Attendant to that there would not be
20 additional public meetings. There would not be a NEPA
21 analysis. Probably wouldn't even be a regulatory
22 analysis. So you ought to treat this accordingly that
23 NRC actually of its own volition has created an
24 opportunity for public interaction here and both to
25 provide written comments. I think January 29th was

1 the date for comments I believe.

2 FACILITATOR CAMERON: Yes.

3 MR. ANDERSON: So don't miss that

4 opportunity because I don't want to be looking in the

5 rearview mirror later either and have you feeling

6 cheated somehow of public process.

7 FACILITATOR CAMERON: That's the

8 transportation connection.

9 MR. ANDERSON: Yes, that if you have

10 concerns --

11 (Laughter.)

12 Yes.

13 FACILITATOR CAMERON: All right. I'm

14 sorry.

15 MR. ANDERSON: Okay.

16 FACILITATOR CAMERON: All right. Thank

17 you, Don.

18 Tom.

19 MR. MAGETTE: I just want to make a couple

20 of comments related to context and in terms of NEPA

21 I'm glad to come back to this this afternoon or when

22 Maurice gives his talk, but just one comment and it's

23 somewhat related to what Ralph just said, not so much

24 a record of decision but there's no such thing as a

25 major federal action even on the table. There's not

1 just a regulation. There's no application to do
2 something different.
3 There's nothing that comes even remotely
4 close to triggering a NEPA analysis as I would see it,
5 just with that context and we can discuss that more.
6 But in terms of transportation per se just
7 to put some numbers on the table, some context for
8 this question, first of all, there is lots of Class A
9 and B and C radioactive waste being transported into
10 East Tennessee. We get on the order of 25 shipments
11 in and 25 shipments out of the Bear Creek facility in
12 Oak Ridge every week.
13 We would expect to go to just the blending
14 plan that we have in mind that that would increase by
15 something on the order of two to four, four being the
16 maximum. So that's just some context.
17 In terms of radioactive materials
18 transportation, one of our subsidiaries, Hittman, does
19 I think the majority of the radioactive materials
20 transportation in this country on the commercial side.
21 Last year we drove over 7.5 million miles and we were
22 involved in a total of four accidents, one of which
23 was one of our drivers fault with no release and no
24 injuries.
25 So there's just a context for this

1 transportation question. Yes, there is a lot of
2 transportation going on in Tennessee. It's not zero
3 and it's not going to go up by a lot and it's already
4 going on a lot nationwide and Mark spoke to that
5 awhile ago. It's something that's very tightly
6 controlled and I think very well done.
7 FACILITATOR CAMERON: Great. Thank you
8 very much for that context.
9 Let's go to -- Let's see if we can
10 identify some other important safety, security and
11 environmental issues. Let's go to David who had some
12 points and then we'll go to Bill.
13 David.
14 MR. JAMES: My question really relates
15 more to the physical process of concentration
16 averaging and how it's perceived. Currently, and I
17 think you made the point in your presentation that
18 concentration averaging doesn't result in a -- or
19 blending wouldn't result in a linear increase in
20 disposal risk, that accommodations would be at the
21 disposal sites. In fact, all of the disposal sites
22 have criteria for dose rates and activity
23 concentration limits on Class A waste that pushes it
24 into a Class B disposal configuration.
25 And just I would expect then and I think

1 it can be demonstrated that most of the waste that
2 would fall into this category would be disposed of in
3 a stable disposal configuration or an intruder
4 protected configuration. We don't really expect that
5 waste would be disposed of in the model configuration
6 that was used for the determination in the EIS.
7 Another factor is that the environmental
8 impact statement itself looked at an excavation on the
9 order of 50 cubic meters of material by the intruder
10 in order to set up a residence on the site. Given
11 that volume of material, the concern that might be
12 related to mixing within an individual package really
13 has no relevance to the intruder scenario. He's going
14 to excavate way more material and mix way more
15 material than that would imply.
16 These points actually were made back in
17 1990 and 1992 when discussions of the original drafts
18 of the current BTP were issued. I think those are
19 some points that need to be made.
20 Another is that the NRC performance
21 assessments don't specifically require that particular
22 scenario if it's demonstrated that the disposal site
23 is resistant to it. And once you take that scenario
24 out of the equation you really don't have any
25 particular relevance to the Class A limits as far as

1 assessing risk to the public.

2 I think those are the main points I wanted

3 to make.

4 FACILITATOR CAMERON: Thank you, David.

5 Christianne, do you have any questions for

6 David on any of that? Not that you should, but I just

7 want to make sure that you heard and understood.

8 MS. RIDGE: No. I think I did hear and

9 understand your point and we certainly understand the

10 idea of what is homogenous on different scales and

11 what's homogenous with respect to someone who might

12 intrude in the waste under different scenarios. And

13 as you said different scenarios might be appropriate

14 at one facility and not another. And we understand

15 those differences.

16 MR. JAMES: One additional point is that

17 if this blending is practiced it's probably more

18 likely that a greater amount of material would be

19 pushed into the B/C disposal category including a lot

20 of high activity A waste that is currently being

21 received or let's say higher activity A waste. There

22 are requirements now to stabilize -- I don't want to

23 use that word stabilize -- to intruder protect it.

24 But if you --

25 PARTICIPANT: Requirements by who?

1 MR. JAMES: By the disposal sites.

2 FACILITATOR CAMERON: Okay.

3 MS. RIDGE: I'm sorry. I'm not sure I
4 understood. I understood your initial comment. I'm
5 not sure I understood that. The last point you were
6 making was that? If I heard you correctly that more
7 waste would be pushed into B/C.

8 MR. JAMES: More waste would be disposed
9 of in intruder protected configuration.

10 MS. RIDGE: And why? I don't know if I
11 understand that.

12 MR. JAMES: Because you're averaging up
13 lower activity waste into a category that would
14 require a stabilization by the --

15 MS. RIDGE: I understand that.

16 MR. JAMES: -- require additional
17 protection by the disposal sites.

18 MS. RIDGE: Within the Class A waste.

19 MR. JAMES: Within the Class A waste,
20 exactly.

21 MS. RIDGE: There would be -- You would
22 expect there would be additional requirements for
23 higher activity Class A waste. So although wouldn't
24 B/C waste, it would still have some requirements for
25 protection?

1 MR. JAMES: It would --

2 MS. RIDGE: And these would be

3 requirements imposed by the states?

4 MR. JAMES: By the disposal sites or by

5 the state authorities that regulate the sites.

6 Barnwell has a requirement that if the waste exceeds I

7 think 1 microcuries per cc of gamma activity it

8 required to be stabilized. EnergySolutions requires

9 waste that exceeds a certain dose rate to be placed in

10 caissons. WCS puts all the Class A, B and C in the

11 same facility. So there's no constraint or let's say

12 that there's no really true increase in risk in

13 conducting this process that you're putting the waste

14 into a safe stable configuration.

15 FACILITATOR CAMERON: Okay. So you're

16 drawing a line and your point is that through blending

17 there's no increase in risk because it's going to be

18 factored in by the disposal facility.

19 MR. JAMES: Exactly.

20 FACILITATOR CAMERON: Okay. Let's explore

21 that either side. Let's go to Marty and let's go to

22 Bill then on that.

23 MR. LETOURNEAU: I think David's comments

24 on this were very interesting. I want to reflect on

25 that and sort of point out one of the distinctions

1 between the NRC regulatory framework and the DOE
2 framework and bring back some thinking to its roots.
3 DOE does the site specific performance assessment for
4 its disposal facilities. For NRC regulated disposal
5 facility, the classification system in essence is the
6 substitute for the site specific performance
7 assessment.
8 The performance assessment was already
9 done. The EIS did the performance assessment and
10 established the classification system or the
11 classification system was established from that
12 analysis to ensure that in a generic setting the
13 performance objectives would not be exceeded.
14 So you can almost say that if you meet the
15 classification requirements and you manage according
16 to the disposal facility requirements for that class
17 of waste there's almost not a performance assessment
18 needed to show that you're going to meet those
19 performance objectives because that was already
20 factored in to the analysis.
21 Now on a site specific basis that's not
22 necessarily the case. But we need to make sure that
23 we don't forget that a lot of analysis already went
24 into establishing that classification system and that
25 analysis includes a lot of built-in conservatism

1 already.

2 FACILITATOR CAMERON: Okay. Let's go to

3 Bill. Bill Dornsife. I think we're going to continue

4 on this same frame.

5 MR. DORNSIFE: First of all, I just wanted

6 to correct something I think I heard David say because

7 he brought up WCS and EnergySolutions. At WCS

8 everything is in a concrete canister that's designed

9 for 500 years. So Class A, B and C have to go into a

10 concrete canister. It's required by the regulations.

11 So it's all-stable. It's all intruder protected.

12 In addition, WCS has a special category of

13 waste that's called Containerized Class A which is

14 defined as exceeding 100 millirem per hour on contact

15 which has to meet the same requirements as B/C in

16 terms of stability. So everything is stable that goes

17 into our cell because of concrete canisters and

18 intruder protected.

19 FACILITATOR CAMERON: That is sort of --

20 MR. DORNSIFE: I'm just responding to --

21 FACILITATOR CAMERON: -- to David's

22 question.

23 MR. DORNSIFE: He left the impression we

24 were putting A, B and C together and, yes, we are, but

25 it's all the same. It's disposed of the same way.

1 FACILITATOR CAMERON: Okay.

2 MR. DORNSIFE: On this issue of
3 classification system versus intruder protection
4 regulations, I guess I didn't understand your
5 discussion. I don't think I did. I mean as a former
6 regulator I would interpret that the classification
7 system is really more of a guidance that you still
8 have to independently meet the intruder protection
9 requirements, that that is a separate regulation. And
10 if you have deviated from the analysis that was a part
11 of that characterization system I would assume NRC
12 would then require a site specific analysis based on
13 this specific waste that's being disposed. Is that
14 correct?

15 MS. RIDGE: Let me address that and what I
16 wanted to comment on with Marty's comments together.
17 I appreciate Marty's comments and I would essentially
18 agree with the exception that I would specify that
19 Marty's comments pertain best to the intruder dose.

20 And, Bill, with respect to your point, the
21 first performance objective and the second performance
22 objective are written differently. The first one
23 actually has a specified dose limit. And in that
24 sense this is where I would differ just slightly from
25 what Marty said. We do require a performance

1 assessment, a site specific performance assessment,
2 for the off-site member of the public.
3 The second performance objective for the
4 intruder does not contain a specific performance
5 objective. And we don't specifically require an
6 intruder analysis for the very reason that Marty
7 outlined. It's handled generically by the waste
8 classification because the concentrations relate most
9 directly to the intruder.
10 MR. DORNSIFE: Well, I guess --
11 MS. RIDGE: And I'm not -- There are other
12 regulatory authorities involved and the agreement
13 states obviously have slightly different sets of what
14 they require specifically. But the NRC's first two
15 performance objectives are written differently in the
16 sense that one contains a numeric limit and one
17 doesn't and this has this different implication for
18 how we handle it.
19 MR. DORNSIFE: Now I'm really confused.
20 FACILITATOR CAMERON: Before we go to Bill
21 again.
22 MS. RIDGE: Sorry about that.
23 FACILITATOR CAMERON: Just make sure that
24 everybody in the audience knows what performance
25 objectives you're talking about. I know that some

1 people around the table know what you're referring to.
2 MS. RIDGE: Yes, I'm sorry.
3 FACILITATOR CAMERON: Where are these
4 performance objectives and for what? So that
5 everybody is --
6 MS. RIDGE: For low-level radioactive
7 waste disposals, I'm referring to the Title 10, Code
8 of Federal Regulations, Part 61 and the performance
9 objectives I'm speaking to specifically are 61.41,
10 61.42, are the two we're discussing here. It goes on
11 61.43 and 61.44, the four that I discussed in my talk.
12 So the first one is protection of the
13 general population from releases of radioactivity. So
14 that speaks to an off-site member of public and that's
15 the one where I was just mentioning we do have a
16 specific numeric limit and do require a site specific
17 analysis to show that you've met that limit.
18 61.42 is for the protection of someone who
19 inadvertently intrudes on the waste which basically
20 means they live on the waste site and they don't
21 realize that they're living there or they somehow come
22 into contact with the waste after the disposal site is
23 closed. So that's what the inadvertent intruder is
24 and that's 61.42.
25 FACILITATOR CAMERON: Right. And, Bill,

1 if you could then in addition to what else you're
2 going to say -- can you put this issue in context for
3 us in terms of what the NRC should be getting out of
4 this?
5 MR. DORNSIFE: Okay. Sure.
6 FACILITATOR CAMERON: Or whatever policy
7 direction they might take.
8 MR. DORNSIFE: Absolutely. Well, I agree
9 there's no specific dose standard in the intruder
10 protection regulations. But there are some guidance
11 documents that have been updated from time to time
12 that set out scenarios. They talk about objectives,
13 dose 500 millirem, which by the way is based on the
14 old public dose. So there's a question whether that's
15 still valid or not.
16 But there are guidance and I would assume
17 that NRC if they were to receive an application they
18 would require an analysis of the intruder protection
19 as part of that application. And if they were
20 licensing a facility as the applicant or the licensee
21 accepted waste that was different from what they
22 analyzed they would have to update their performance
23 assessment from time to time to assure you that they
24 still met that performance objective.
25 FACILITATOR CAMERON: Christianne.

1 MS. RIDGE: Yes. Larry and Patty
2 mentioned this morning that we have guidance in
3 different places that says slightly different things.
4 So I don't think it would necessarily be useful for
5 Mr. Dornsife and I to start quoting guidance at each
6 other.
7 But I do have a piece of guidance I want
8 to mention that I think does bear on this issue and
9 that's our guidance on conducting low-level waste
10 performance assessments. And that's -- If you're
11 looking for that on our website that's our NUREG 1573.
12 And the guidance we have in that indicates that the
13 working group that wrote that guidance on your low-
14 level waste performance assessments did not expect
15 site specific intruder analyses to be done because
16 61.13(b) -- so again I'm referring to Code of Federal
17 Regulations 61.13(b) -- requires demonstration of
18 compliance with waste classification and stability
19 requirements.
20 As I said, Larry and Patty both mentioned
21 that our guidance says different things. But in our
22 guidance on conducting these assessments we have as
23 you said lengthy guidance on conducting performance
24 assessments for the off-site member of the public and
25 we've said we do not expect site specific intruder

1 analyses because we have this waste classification
2 system essentially and 61.13(b) requires the
3 demonstration of compliance with that and the specific
4 requirements for the waste that that imposes.
5 MR. DORNSIFE: Well, I mean guidance
6 might.
7 MS. RIDGE: Exactly.
8 MR. DORNSIFE: If you have evidence that
9 you think the intruder is not being adequately
10 protected, aren't you as a regulatory agency going to
11 say "Hey, we need to look at this and make sure that
12 the intruder is protected for this waste stream?"
13 FACILITATOR CAMERON: Okay. We're going
14 to have to --
15 MR. DORNSIFE: Because I can tell you,
16 okay, we've submitted a generic analysis that assumes
17 waste. Takes a real waste stream, blends it down to
18 Class A limits and plugs it into what you tell people
19 you assume for an intruder analysis and at 100 years
20 the dose to the intruder is 40 rem.
21 FACILITATOR CAMERON: Okay. We're going
22 to have an intervention here by Larry Camper.
23 (Laughter.)
24 But I would hope that either Larry or Bill
25 before we're going to go Christopher and Tom give us

1 the bottom line for the NRC's development of what they
2 should do on this.
3 MR. DORNSIFE: The bottom line is you've
4 got to meet the performance objectives.
5 FACILITATOR CAMERON: So this is sort of
6 going back to what David started us out with then.
7 It's still the same.
8 MR. DORNSIFE: Right.
9 FACILITATOR CAMERON: Right. Okay. Go
10 ahead, Larry.
11 MR. CAMPER: The point I want to make, the
12 simple answer to your question, Bill, is yes. I mean
13 61.42 while it does not specify limit on an intruder
14 does say the design --
15 MR. DORNSIFE: Right.
16 MR. CAMPER: -- and operation --
17 MR. DORNSIFE: Right.
18 MR. CAMPER: -- will protect and having
19 just gone through the WCS application yourself you
20 recognize I'm sure that, yes, you have to evaluate the
21 waste that you expect to receive at that site and
22 design it accordingly. And if it is outside of the
23 parameters that were evaluated at the time the EIS was
24 done for Part 61 which by the way there are many
25 variables in the practical operation today at low-

1 level waste sites that are far different than was
2 evaluated in '79-'81 time frame.
3 You have to consider those things. The
4 simple answer is yes and, yes, you would expect it as
5 a regulator. Sure.
6 MR. DORNSIFE: Okay.
7 FACILITATOR CAMERON: Okay. Thank you.
8 Let's go to Christopher and then we'll go to Tom and
9 then we'll come back over this way.
10 MR. THOMAS: Sure. Thank you. I just
11 want to make a comment and then I'd like to kind of
12 tweak the focus if I could to move onto another very
13 related issue to the intruder analysis.
14 But my first comment is what I just heard
15 Larry say it sounds like there are differences and
16 actually, Christianne, what you said too. There are
17 different -- When you talk about blending, there are
18 potentially significant differences between what was
19 contemplated in the development of the classification
20 scheme and what might be disposed of today under a
21 blending scenario.
22 So I think that to the extent that there
23 are differences from that original framework that a
24 performance assessment should be required to meet
25 those intruder performance objectives. And I think a

1 major area of concern and I think this goes for
2 performance assessments in general is that I think
3 different states, different agreement states, require
4 or don't require certain intruder analyses. And I
5 don't want to get into the individual licensee thing.
6 So I won't. But I think that is a major area of
7 concern.
8 And I'm concerned that the NRC in the
9 INPEP reviews or I don't know which arm of NRC would
10 do this, but is ensuring that performance assessments
11 are meeting certain baseline levels across the
12 spectrum because otherwise your assessments aren't
13 telling you the same thing from site to site. So that
14 is a major area of concern for me representing
15 interests of the State of Utah.
16 Okay. So having said that really where
17 I'd like to go, where I'm really interested, is in
18 some of the practical issues that would affect the
19 intruder scenario down the line. In other words, how
20 much is the waste actually mixed together?
21 And so where I wanted to start with that
22 was going back to the presentation, Tom, that you made
23 and you were talking about how mixing occurs currently
24 at power plants. And I wanted to get a sense of the
25 scope of that and what that actually looks like.

1 And so there was one scenario cited where
2 it talked about there were different waste streams at
3 a power plant that were segregated by A, B and C and
4 then were combined in particular ratios to determine
5 the ultimate classification for disposal. And so my
6 question is what does that look like now. I mean, in
7 the current practice, how often does that happen and
8 what is the -- If any, is there physical mixing or are
9 they just sort of aggregated together? I want to get
10 a sense of what's happening currently as a way to talk
11 about what are the practical considerations for that
12 inadvertent intruder down the line.
13 FACILITATOR CAMERON: This state
14 uniformity issue again put that in the parking lot for
15 regulatory considerations.
16 MR. THOMAS: Okay.
17 FACILITATOR CAMERON: Okay?
18 MR. THOMAS: Uniformity under regulations.
19 FACILITATOR CAMERON: Yes. We'll do that
20 there and when you were talking about Tom's
21 presentation you meant something that Tom Maggett said
22 earlier?
23 MR. THOMAS: I was referring to the
24 December presentation, yes.
25 FACILITATOR CAMERON: Okay. Well, Tom,

1 you're next in line here. Do you want to -- You had
2 something to say, but do you want to respond to
3 Christopher?
4 MR. MAGETTE: It might be better if we
5 come back to that in a minute and it might be nice to
6 hear from Mark or Miguel or David or Lisa or one of
7 the people who can speak more directly to that.
8 FACILITATOR CAMERON: Okay.
9 MR. MAGETTE: But there is -- I don't
10 think it's a -- I wouldn't say that Christopher
11 necessarily restated the problem exactly correctly,
12 but I think the gist of what you said is correct and
13 informs the audience. But if we could come back to
14 that.
15 I'd like to back up just a second. First
16 let me say and what will no doubt come as a shocking
17 turn of events. I violently agree with both
18 Christopher, Thomas and Bill that in fact it does come
19 back to the performance assessment. Now we can come
20 back to talk about details. But in general I think
21 that's a statement that most of us accept. I won't
22 speak for everybody, but I certainly accept that.
23 MR. DORNSIFE: Accept what?
24 MR. MAGETTE: That the best way to
25 demonstrate that a site is safely operated and waste

1 is safely disposed of is by performing a site specific
2 analysis that demonstrating compliance with the
3 performance objectives in Subpart C.
4 MR. DORNSIFE: With all the waste? With
5 waste you intend to dispose of?
6 MR. MAGETTE: With waste you intend to
7 dispose of, with waste you have disposed of.
8 MR. DORNSIFE: I said that.
9 MR. MAGETTE: That's why I agreed.
10 (Laughter.)
11 I know it's strange. Bill, stay with me.
12 MR. DORNSIFE: You said you violently
13 disagree.
14 MR. MAGETTE: Violently agree.
15 (Simultaneous speaking.)
16 It's not like about a predisposed
17 condition.
18 MS. RIDGE: Chip, if I could just agree
19 too. I just want to jump on this bandwagon.
20 FACILITATOR CAMERON: Does anybody else
21 want to get on the bandwagon?
22 (Simultaneous speaking.)
23 That's important.
24 MS. D'ARRIGO: I'm not sure I agree. So
25 it's not going to be uniform.

1 FACILITATOR CAMERON: Okay. So Diane is
2 still a little skeptical about this. And keep in mind
3 Christopher's point, too, which is how do you ensure
4 from state to state that there's going to be a sort of
5 baseline, a minimally good or however you want to call
6 it performance assessment.
7 MR. MAGETTE: And we can come back to
8 that. But Christianne I think addressed that at least
9 briefly awhile ago and she suggested that the NRC does
10 have guidance. She referred to NUREG 1573.
11 But setting that aside for the moment to
12 back up again I mean first let me say that I think,
13 Christianne, you did a wonderful job in your
14 presentation looking at a lot of the pros and cons and
15 some of the subtleties here in this question and
16 relating them back to the analyses that have been done
17 historically. So I appreciate that.
18 Take that and also take Marty's comment
19 regarding the fact that the waste that goes to a site
20 does not know whether or not it's been blended. And
21 that goes to one of your comments regarding the nature
22 of waste that we're talking about and the notion that
23 in the EIS a waste stream that was I think you used
24 something like far below the Class A limits was
25 analyzed and you put that in context with several

1 other aspects of those analyses.

2 But if I just go down that path a little

3 bit I'm not sure it's correct especially if we're

4 talking about a resin waste stream to say that today's

5 waste stream, not a blended waste stream in the

6 future, but the today's waste stream satisfies that

7 description. If you look at what was done in the EIS

8 you talked about four million cubic feet of resins and

9 we're talking today about something more like 65,000-

10 75,000, 80,000 cubic feet of resins.

11 But I don't think we're talking about a

12 significant diminution in the activity in that waste.

13 If you look for example at the waste that was

14 disposed of at the Barnwell site over a roughly 20

15 year period starting in about 1981, the annual

16 disposal drops from 2.4 million to more like 2,000.

17 But there was no drop in activity. So the notion that

18 there's a change in that waste stream I agree with

19 that. But I think that's already taken place, is

20 taking place.

21 Now that's countered by some of the things

22 that David referred to and the notion that these waste

23 streams all get disposed of in a stabilized

24 environment so that the method of disposal is also

25 substantially different from what was analyzed in the

1 EIS. And also if you look at the site the base case
2 site in the EIS is substantially different from at
3 least the Clive site. So you have a generic site, a
4 generic assumption about trenching and no
5 stabilization, neither of which apply. And you
6 touched on a lot of these things in your talk.
7 But I just want to recognize that all of
8 these as Larry put it variables can be accounted for
9 if we go back to a performance assessment and
10 compliance with the performance objectives in Subpart
11 C. So, yes, there's been a lot of changes. I mean
12 you could probably go to almost any page in that EIS
13 and find something that's different than what was
14 assumed. It was done a long time ago.
15 But I think the nature of the waste is
16 actually fairly well understood and is clearly Class C
17 compliant. I just wanted to make sure that we
18 understand those variables and the significance of
19 those variables as well as the changes that have taken
20 place in both directions. I think that's very
21 important to the conversation.
22 And I would like to touch on this notion
23 also of ALARA and I think that's been explored.
24 Christianne, you clearly clarified what the NRC looks
25 at on a facility by facility basis. But I don't think

1 we've ever suggested and I very clearly said in my
2 talk in December that you have to look at some sort of
3 cumulative dose savings if you're going to try to meet
4 a standard that says blending is a reasonable thing to
5 do for ALARA. I mean clearly we operate facilities,
6 processing facilities, disposal facilities, at
7 multiple locations that all have to meet not only the
8 10 CFR 20 requirements but our own administrative
9 guidelines which are well below that. And then laid
10 on top of that is ALARA. So that's a routine standard
11 which everyone operates facilities in this business
12 and this industry is extremely familiar with and
13 attentive to. But the case I was making for blended
14 is in fact a cumulative case.
15 FACILITATOR CAMERON: So on this last
16 point of ALARA you're extending that concept from a
17 site specific ALARA to a cumulative ALARA onsite.
18 MR. MAGETTE: If you're going to point to
19 the guidance that says it's reasonable to do this for
20 a variety of reasons, one of which is ALARA and
21 another of which is in-plant efficiencies, I think it
22 would be incumbent upon you if you're making that
23 argument to demonstrate it in a cumulative basis. We
24 couldn't very well say we saved the dose if we moved
25 it from Limerick to Bear Creek and that's not what

1 we're saying.

2 Yes, I think to make that case you would

3 have to look at it in a more global sense.

4 FACILITATOR CAMERON: Okay.

5 MR. MAGETTE: So I think that's an

6 important thing to keep in mind.

7 I also want to go back to this notion that

8 somehow there's a BSFR component here because simply

9 there is not. I mean we would certainly expect a

10 commercial license to do this in Tennessee would

11 include a component which would say, "None of this

12 waste stream can be released to the environment."

13 We'd be happy to put it in the application.

14 I can't imagine that we would have a

15 license that would say otherwise. We certainly don't

16 today. So we don't have a license that just allows us

17 to take whatever comes into the site and shuttle some

18 of it off to an unlicensed disposal.

19 So that's not the case. It's not what's

20 proposed. It's not envisioned that we would somehow

21 be able to take Class A and B and C waste and mix it

22 together and get unlicensed waste. I mean there is

23 simply no contemplation of any such thing.

24 And finally there's been a -- This may go

25 more to Maurice's section, but this notion of where

1 does this come together. Well, to me it would come
2 together in an application to do something. We
3 certainly don't have nor have contemplated nor believe
4 that there is any need for an application to do
5 anything at a disposal site because we would be
6 operating in full compliance with the agreement state
7 regulations, the guidance and in fact the BTP as part
8 of our license at Clive and at Barnwell so that it
9 essentially has that weight because it's part of our
10 license.
11 So we're not planning on doing anything
12 differently there. To operate a facility that
13 processed wastes in this manner would require a
14 license and that would be where you would consider the
15 spectrum of these issues.
16 FACILITATOR CAMERON: Okay. Thank you,
17 Tom. A lot of issues on the table now and including
18 the one Christopher raised and when we go to Miguel we
19 may have something on that.
20 But I want to go to Marty and Don and
21 David and Diane and Ralph and we'll get to Mark and
22 come back to Christopher and Bill and see where we are
23 on all this and maybe it's going to be time to go to
24 the audience and people on the phone at this point.
25 Marty.

1 MR. LETOURNEAU: Yes. When I made my
2 initial comment about the performance assessment
3 versus the classification system, I was thinking very
4 much about just the intruder scenario, not the other
5 performance objectives. But there was a reason for my
6 myopia in that case and that is when you do a
7 performance assessment you look at the groundwater
8 pathway and you look at the air pathway and you look
9 at soil pathway and you look at the plant uptake and
10 animals ingesting that and then milk from those
11 animals. And you add up all those pathways and you
12 look at each individual pathway on its own and then
13 you look at the sum of all those pathways.
14 In many, many cases especially with arid
15 sites, the intruder scenario is the most limiting
16 scenario and is the basis for setting radionuclide
17 specific limits. So the intruder scenario and the
18 classification system does have a very important role
19 with respect to both the limits that are protective of
20 public health and the environment in the future and
21 with respect to site specific performance assessment.
22 FACILITATOR CAMERON: Let's go to Don.
23 MR. SAFER: In regards to the BFSR, I
24 didn't mean to imply that EnergySolutions was going to
25 take the great bulk of this material and take it to

1 our landfills. In fact, I know it's quite the
2 contrary because you all own the landfill in Utah.
3 But I think in terms of the larger context
4 of if this is something that as a process is approved
5 by the Nuclear Regulatory Commission for everybody to
6 do then I can't speak to what other unnamed companies
7 might do and it was more just to raise the point that
8 anything that comes into Tennessee is subject to that
9 particular program and it is used differently by
10 different companies. And I understand your opposition
11 to that and I appreciate that.
12 But getting onto another point and I hope
13 this is germane. I'm not going to quote chapter and
14 verse here. But I'm going to get back to the real
15 world about classification.
16 And I'm looking at the tables that were on
17 the slide show and Class A waste, Class B waste, Class
18 A waste has absolutely very little strontium-90, very
19 little cesium-137, very little nickel-63. When you
20 move over to Class B and Class C waste those numbers
21 rise and in the case of strontium-90, cesium, they
22 rise pretty dramatically.
23 And what I don't quite understand is in
24 changing and bringing this B/C waste in making it into
25 Class A waste I know that these materials are still in

1 there. They don't go anywhere. They're not lost.
2 They're just spread out more.
3 So in the intruder scenarios and other
4 things and I'm speaking really generations forward.
5 I'm not speaking about 10 or 15 years from now because
6 these materials are a concern for all of the future
7 generations. And it just strikes me as inherently
8 mistaken to take a material, Class A waste, that has
9 very little of those isotopes and combine it with
10 these other two categories. And wherever you classify
11 it I think it's semantics. But the generators know
12 what's in what and I don't think you have it both
13 ways.
14 But the net result is that you're taking
15 isotopes that are generally or totally recognized as
16 need to be isolated from the environment just
17 stringently and putting them into a material that and
18 into a landfill in Utah and also doing the processing
19 involved at the Bear Creek facility in Oak Ridge where
20 any time you're working with these materials you're
21 running the risk of release. And so I guess it's more
22 of a question than a statement, but it just boggles my
23 mind that we're considering running those levels of
24 cesium, strontium and nickel into material that did
25 not have it and it's going to a landfill where those

1 isotopes were not ever contemplated being in there, at
2 least, in terms of what my understanding is.
3 FACILITATOR CAMERON: Before we go to
4 Ralph and Diane and Miguel and, of course, to David,
5 just let me ask Christianne. Are those assumptions
6 that Don is making are those correct?
7 MS. RIDGE: I'm sorry. The assumptions?
8 FACILITATOR CAMERON: Well, I mean is it -
9 - He's concerned about certain types of isotopes and
10 that they're still going to be there.
11 MS. RIDGE: I mean certainly the half-
12 lives of some of these might be shorter than you're
13 imagining when you talk about all future generations.
14 Probably everyone around the table could chime in. I
15 don't know them all offhand. Cesium is only about 30
16 years.
17 You know, this is actually the table for
18 short-lived radionuclides. So I don't know if that's
19 specifically the assumption you meant for us to
20 address. But to say all future generations
21 specifically with respect to this table might not be
22 the best phrase.
23 MR. SAFER: Okay and I thank you and I'm
24 obviously not a scientist. I'm a social scientist if
25 anything and not that. And I come here as a citizen

1 and as a concerned citizen. But the concern is that
2 our isotopes that are currently being desegregated and
3 kept away from this particular type of disposal are
4 going to be going into disposal and --
5 MS. RIDGE: If large scale blending were
6 practiced and Larry is going to say a few words about
7 this in a minute. But I think I can answer your
8 question. They would presumably be there but at these
9 much lower concentrations. So right now if it's Class
10 B waste it may have these concentrations. The idea is
11 they would be mixed so that it actually would be Class
12 A waste. It would actually meet these limits.
13 FACILITATOR CAMERON: Okay and Larry is
14 going to say something on this.
15 (Off the record comments.)
16 And while we're going there we're going to
17 go to the tents that are up and then I think we're
18 going to have to go onto the audience and the public
19 to wrap this up.
20 But go ahead, Larry.
21 MR. CAMPER: Yes. Don, you asked a very
22 interesting question and you asked a question from the
23 standpoint that you said is as a social scientist you
24 see these different radionuclides that have these
25 demarcations and I would suggest that that is an

1 incredibly logical question to ask. And the reason
2 that Patty in her presentation posed the question that
3 she did and she asked the question if in the course of
4 normal operations concentrations of waste can change,
5 typically they go up. I mean for example a resin
6 filter in an operating reactor depending upon when you
7 decide to take it out of the system can be A, B or C,
8 typically B or C, but it's when you take it out. The
9 question she asked was "If it can go up in the course
10 of operations, why couldn't you reduce it in
11 concentration and in theory risk in the course of
12 operations?"
13 Now look at this table right here. What I
14 find fascinating purely as a logic examination about
15 the tables is the following. If I look at that table,
16 Table 1, those radionuclides can be A, B or greater
17 than Class C as a function of concentration in curies
18 per cubic meter. Any one of those radionuclides
19 purely as a function of concentration can be one of
20 those three classes.
21 If you go to Table 2 what you'll find is a
22 similar observation except that any of those
23 radionuclides in Table 2 can be A, B, C or greater
24 then Class C as a function of the variable curies per
25 cubic meter. So strontium-90 as you cited in your

1 comment can be any one of those three. A function of
2 concentration.
3 And that was the prime reason why Patty
4 asked the question that she did in the course of her
5 commentary because it poses an interesting logic to be
6 examined. It poses an interesting challenging logic
7 question. If it can go up and it can be any one of
8 three or four depending on which table it's in, why
9 couldn't it in turn go down as a function of
10 operation? That's precisely why she asked the
11 question.
12 And you've posed a question in a different
13 way which I think is extremely interesting. In your
14 posing of it as you said is not so much from a
15 scientific I'm-focusing-upon-concentration-only
16 perspective. It's more from an optics perspective in
17 the sense that these isotopes have been segregated
18 into these columns and that implies a particular risk
19 supposedly.
20 FACILITATOR CAMERON: And Don might
21 disagree with that it's purely optics.
22 MR. CAMPER: So I wanted to revisit that
23 point and you gave a perfect opportunity to do that.
24 FACILITATOR CAMERON: Okay. Thank you,
25 Larry. Thank you very much. And a quick follow-up

here, Don, and then we're going to David.

MR. SAFER: I'm noticing now that it's radionuclides with less than five year half-life. I didn't see a table of the radionuclides with greater than five year half-life. Is that date available?

MS. RIDGE: Yes. There is a separate table.

MR. SAFER: There is. But you didn't show it today.

MS. RIDGE: I don't think we have it in a slide. Right.

FACILITATOR CAMERON: All right. We're going to go to David and then we're going to go Ralph and Diane and Miguel if he still has a point and Roy and then we're going to come back to people that we've heard from already.

David.

MR. JAMES: Yes. I'd just make a few points. One, all of those radionuclides have half-lives greater than five years.

PARTICIPANT: That's greater than?

MR. JAMES: Right.

MS. RIDGE: The first column is for less than. The other ones --

PARTICIPANT: Right. The first four.

1 MR. JAMES: Okay. Just the first four.

2 MS. RIDGE: I'm sorry. Yes, the first row

3 is less than. The other radionuclides do have half-

4 lives greater than five years.

5 MR. JAMES: Right.

6 MS. RIDGE: But they're still relatively

7 short-lived. There is a separate table for long-lived

8 radionuclides.

9 MR. JAMES: The difference is that when

10 Class B is assumed that there's a minimum of 300 years

11 of isolation which means that those will decay down.

12 For the waste that's actually being blended, they have

13 to be pretty close to the Class A limits for it to be

14 practical.

15 The difference for strontium is a factor

16 of 600 from the A limit up to the B limit. If you had

17 to work from that level you wouldn't actually be able

18 to blend very much.

19 The main point that I just wanted to make

20 is that you know looking at the disposal of a specific

21 waste stream in terms of its impact on the public, on

22 the environment, on the applicability of a particular

23 intruder scenario is probably the first step towards

24 actually risk informing the regulation which is what

25 was kind of the starting point of the discussion.

1 That was my point.

2 FACILITATOR CAMERON: Thank you. Thank

3 you very much. Ralph and then Diane and then we'll go

4 down to the end of the table.

5 MR. ANDERSON: I just wanted to make a

6 couple of points on some of the other issues under

7 your heading here. One was on security and

8 specifically the potential related impact associated

9 with sealed sources. I just suggest in your

10 consideration for developing the SECY paper or I

11 forgot what the nomenclature for that was.

12 But in any case there is an activity

13 already underway. You may or may not be aware of it

14 through NSIR, NSIR being the Nuclear Security and

15 Incident Response Office at NRC to deal specifically

16 with sealed sources as a issue of its own in terms of

17 disposal. And so I just suggest that you make sure

18 that you fully understand how that is being

19 contemplated if you were going to look at this

20 crossover issue of perhaps reducing the market that

21 would create a commercial incentive for WCS to go

22 forward.

23 The related comment I would make is I

24 would suggest that postulated outcomes in the

25 marketplace are probably analogous to estimating

1 performance of high level waste repositories for one
2 million years.
3 (Laughter.)
4 I would encourage much restraint on
5 postulating how very local decisions might have
6 ramifications in long term on the commercial
7 marketplace. Rather I would look at these issues in
8 the context of the various regulations that apply.
9 So if I was going to look at a security
10 issue the question would be is the current regulatory
11 framework sufficient to accommodate the fact that we
12 have stranded sealed sources that current cannot be
13 disposed of. And is there some implication of time in
14 the protectiveness of those regulations? I don't
15 believe there is. If they are complied with in an
16 infinite time frame, security is assured in an
17 infinite time frame.
18 So I just struggled a little bit with this
19 notion that blending somehow is going to lead to loose
20 sources around the country. The connection is a bit
21 tenuous for me.
22 FACILITATOR CAMERON: So your point,
23 Ralph, is that there is regulatory framework that is
24 going to take care of that.
25 MR. ANDERSON: There is a regulatory

1 framework that's taking care of it as we sit here in
2 this room.
3 FACILITATOR CAMERON: All right.
4 MR. ANDERSON: And generically the reason
5 I wanted to raise that specific issue is that I think
6 many of the pros and cons that are raised could be
7 better dispositioned by simply evaluating the adequacy
8 of the regulatory framework rather than postulating
9 scenarios. That's my generic point I wanted to make
10 with that.
11 The second point is a minor one. We
12 bandied this phrase ALARA about and we often do in our
13 profession. I'm a health physicist by background by
14 the way. The branch technical position actually
15 doesn't refer to ALARA. It talks about dose reduction
16 and at least as I have understood it and I would be
17 happy to be corrected if I got it wrong is that
18 blending is connected to being allowed in situations
19 where you demonstrate that it has the effect of
20 reducing dose. That's quite different than ALARA.
21 ALARA is actually an economic equation of
22 cost and benefit and for those of you that wonder
23 about it actually NRC has a procedure for looking at
24 that in its regulatory analysis procedures. And it
25 talks about dollar values that you use for making that

1 assessment and so forth. So actually it's a very
2 disciplined process. It's not holding your thumb up
3 and seeing which way the wind blows.
4 But I would come back to this point that I
5 would think that if one were justifying blending on
6 the basis of what is allowed in the branch technical
7 position one would need to demonstrate that there is
8 an overall actual reduction in occupational dose.
9 One opportunity that I see that relates to
10 the analysis though is in the area of operational
11 efficiency. I can't find that in any NRC document
12 when I've done word searches through ADAMS and so
13 forth. NRC has some expansion that talks about what
14 operational efficiency means. If it does exist
15 somewhere, I would appreciate knowing that.
16 But applying that criteria as it applies
17 today I will tell that we simplistically and we
18 believe correctly taken it to understand efficiency in
19 the terms of economic benefit. So that is the way
20 that we've proceeded with it that you're using less
21 resources, expending less money and so forth.
22 Our current understanding of the branch
23 technical position is that it's also an acceptable
24 justification for blending. And for that reason we
25 look at the issue of storage which is actually quite

1 costly. You know, we do it to meet the regulations
2 and there's very stringent regulatory oversight. But
3 to obviate the need for that obviously would be an
4 operational efficiency from our point of view.
5 Those are the comments I had.
6 FACILITATOR CAMERON: Okay. Thank you.
7 Thank you very much, Ralph.
8 Diane.
9 MS. D'ARRIGO: I wanted to understand
10 where there is a requirement, if there is one, that a
11 facility that has a license to dispose of Class A
12 would have to do anything different to dispose of
13 Class A that's well below the limits and Class A
14 that's at or near the limits. It sounded like there
15 was some kind of different analysis that would take
16 place and I have three questions. That's one of them.
17 I don't know if you want to do answers or.
18 FACILITATOR CAMERON: Why don't we do that
19 one first. Christianne, do you understand?
20 MS. RIDGE: I believe I understand the
21 question and the answer would not be in our
22 performance objectives. I believe that you're
23 commenting on David's discussion of waste that was far
24 lower than the limits and near the limits.
25 Our requirement would be that you would

1 need to show that met the performance objectives, so
2 for the off-site member of the public you would have
3 show it met a specific dose requirement. And that
4 would apply -- Well, that actually applies
5 irrespective of the waste classification.
6 MS. D'ARRIGO: So whether it's WCS or
7 Barnwell or --
8 MS. RIDGE: There may be other
9 requirements.
10 MS. D'ARRIGO: -- EnergySolutions.
11 MS. RIDGE: The sites are regulated by
12 agreement states and they may --
13 MS. D'ARRIGO: Well, as far as NRC goes.
14 Let's keep it simple.
15 MS. RIDGE: If we go for NRC, then -- and
16 Jim may want to help me with this -- but as far as the
17 Class A waste we needed to meet -- Well, we needed all
18 of the waste to meet the performance objectives. Jim
19 might be able to help me with that.
20 FACILITATOR CAMERON: Jim.
21 MR. KENNEDY: Yes, we don't have any sort
22 of subcategorization of Class A in our regulations.
23 That said like Christianne was saying the agreement
24 states and the facility upon doing some analysis may
25 for their own reasons impose those requirements in the

1 license to have additional controls for Class A. That
2 is one class of Class A as it were and another
3 subclass as well.
4 But that's not in NRC regulations. That
5 would be something imposed by the states.
6 MS. D'ARRIGO: So does that exist at the
7 Texas, Utah, South Carolina, Washington sites? There
8 are subcategories of Class A.
9 MR. DORNSIFE: Yes. Chris just mentioned
10 containerized A is tested and treated the same as B
11 and C and that's the Class A is greater than 100
12 millirem per hour.
13 MS. D'ARRIGO: It's a Texas reg.
14 FACILITATOR CAMERON: And Tom Magette is
15 shaking his head affirmatively in response to your
16 question.
17 MR. MAGETTE: I certainly know that we do
18 and I think all four sites that have a specific
19 license criteria that addresses -- The short answer to
20 your question, Diane, is in the license, the where is
21 it done. We have licenses that have restrictions that
22 go beyond the regulations which I think is pretty much
23 what Jim just said. So it's in the --
24 MR. DORNSIFE: Ours is a regulatory
25 requirement.

1 MR. MAGETTE: Yes. You have a different
2 set of regs. But in the license and even to go beyond
3 that if you're talking about --
4 MR. DORNSIFE: It's in the law.
5 MR. MAGETTE: I don't think there's any
6 waste anywhere disposed of into the unstabilized
7 criterion that's described in the EIS. I mean there's
8 a level of minimal stabilization for virtually
9 everything that goes into every site and I think it
10 exceeds that. But even beyond that, there are license
11 criteria for different waste forms.
12 FACILITATOR CAMERON: And, Diane , second
13 question.
14 MS. D'ARRIGO: Okay. I can't remember
15 any. Well, this is going to lead into the next item.
16 I think we're going to number two next. I wanted to
17 follow up what Chris was asking of the nuclear
18 generators about a practicality question of what is
19 currently done now. How much does a resin cost and
20 how long do you keep it in? And if you keep it in X
21 amount of time or depending upon the burn-up of the
22 fuel you've got Class A and then you can keep it in
23 longer and it would be Class C or something like that.
24 You know what is the -- I want to
25 understand -- I think it's important to lay out where

1 we are to start with before we start talking about
2 whether it's a good idea to ship it to another
3 location to process or even to dispose of directly. I
4 think in the practicality question I want to hear from
5 the generators on how the material is currently
6 controlled as to what class it becomes.
7 And although we seem to be focusing on
8 resins because that's the current discussion it sounds
9 like a decision that the NRC is going to make on
10 whatever direction it goes will apply to all waste not
11 just resins. So it could mean packaging and that kind
12 of thing. So I want to ask for that on a background
13 on the practicality question.
14 And then my third is the status of
15 mathematical averaging. A couple years ago EPRI
16 talked about just doing a mathematical averaging of A,
17 B and C waste and not actually physically having to
18 blend it and I wondered where that is in the NRC's
19 thinking and in the -- Is there some kind of movement
20 on that?
21 FACILITATOR CAMERON: Okay. Thank you,
22 Diane. The second question that's related to Chris'
23 point when we start after lunch with practical
24 considerations I think that that would be very useful
25 information to get some issues to get some information

1 from Mark and Miguel and others on.

2 The mathematical averaging, David, do you

3 have a quick answer on that or an answer?

4 MR. JAMES: I would just make the point

5 that when we were discussing mathematical averaging it

6 was on the -- based on the premise of the intruder

7 scenario again that the intruder is going to dig up so

8 many cubic meters of material. He's going to in the

9 process mix that material and spread it in an area

10 where he would plant crops and build his house that it

11 made absolutely no difference what was in an

12 individual package because effectively he was going to

13 mix everything up anyway in the process of the

14 intrusion.

15 So from a performance and safety point of

16 view, it really doesn't make any difference. It's

17 effectively an issue of how the exposure scenario was

18 derived.

19 FACILITATOR CAMERON: Okay.

20 MS. D'ARRIGO: Tell me the NRC.

21 FACILITATOR CAMERON: Jim, did you have

22 something on Diane's?

23 MR. KENNEDY: Yes, two points on your

24 questions, Diane. The first is you asked about where

25 we are with respect to the EPRI mathematical averaging

1 and a lot of that's contained in a 100 page report
2 that was submitted to us by NEI I think about a year
3 and a half ago, Ralph. And it was for our
4 consideration in making revisions to the concentration
5 averaging branch technical position.
6 Like Larry said in his presentation we're
7 addressing one small aspect of the concentration
8 averaging BTP right now and that's blending. That's
9 one of eight sections in the BTP. After we address
10 this, we'll take up the BTP at large and at that time
11 we'll consider the EPRI report that was submitted to
12 us along with the input of a lot of other
13 stakeholders. But that's down the road.
14 We have not done anything with that
15 specific report. We've read it. We've analyzed it.
16 Our contractors looked at it. But there's been no
17 regulatory action on it yet.
18 The other point I wanted to raise is that
19 the discussion today on blending deals with homogenous
20 waste. That is flowable waste. As I understand it,
21 it's principally ion exchange resins and filter media
22 from nuclear power plants.
23 I think an open question is exactly how
24 large is homogenous waste. Does it also include soil
25 and trash that you shred and things like that. I

1 don't believe that's part of the current proposals.
2 It's not as I understand it. But I think that's an
3 issue we probably need to address in connection with
4 the blending issue at large.
5 FACILITATOR CAMERON: Okay. Thanks, Jim.
6 Let's go to Roy and then we're going to come over to
7 Joe and then I think we have to finish up the
8 discussion and get the audience and lunch.
9 Roy.
10 MR. BROWN: Well, after hearing discussion
11 this morning, it's pretty clear that the blending
12 issue is really mostly impacting the waste processor
13 and the disposal facilities. But I couldn't let the
14 morning go by without addressing some concerns of
15 materials facilities.
16 I want everyone to be aware that the
17 materials facilities routinely blend waste for a
18 variety of reasons including things like exposure
19 reduction, waste minimization. Many state licenses
20 have minimization requirements in the license. So you
21 would have to minimize the waste according to your
22 license. Stabilization of the waste, any time you go
23 to stabilize the waste of course you're going to blend
24 it with whether it's concrete or whatever. So there's
25 quite a bit of blending going on now.

1 And a lot of times we also have in our
2 license we have license conditions to expedite the
3 disposal of waste. Remove the waste from the
4 facilities. So a lot of times we blend it just to get
5 rid of it faster to get it to the disposal facility or
6 the waste processor faster.
7 I guess the main reason for us being here
8 today is we wanted to kind of put the NRC on notice
9 and offer a caution that really please be aware of
10 unintended consequences. When you go to modify the
11 BTP or have rulemaking or guidance please be very
12 aware that there are quite a few materials facilities
13 blending now. And if you come up with a blending
14 guidance or blending rulemaking or modify the BTP,
15 please be aware people are routinely blending waste
16 and that could have unintended consequences on us.
17 FACILITATOR CAMERON: Okay. Thanks, Roy.
18 A point well taken and I think falls into the
19 practical types of things and practical
20 considerations. So that's good.
21 Joe.
22 MR. DiCAMILLO: Very quickly. What I
23 think is an important clarification. We've talked
24 about sealed sources and that really is not the only
25 other -- There are many other B/C waste streams that

1 are not addressed by the blending proposal which would
2 need disposal space irrespective of whether we would
3 allow blending medical waste, research waste. In
4 fact, there are B/C resins that EnergySolutions I
5 don't believe based on Tom's presentation can't --
6 They don't expect to blend all B/C resins historically
7 currently produced. So just for clarity I think it's
8 an important point to say that there is not a tiny
9 market for B/C. There are extended waste streams
10 irrespective of what we do on blending.
11 And I would like to make one other very
12 quick point. While I'm sure that WCS is extremely
13 focused on revenue issues, I think NRC, the issue is
14 not really revenue to WCS. But the cost drivers that
15 will be associated with a smaller market for B/C waste
16 if we allow blending because that will economically --
17 The simple economics will mean that that will result
18 in an increase cost to all of those other strands of
19 waste streams. Just a consideration.
20 FACILITATOR CAMERON: Thank you, Joe.
21 Important clarification.
22 Ralph, quick one on this? Go ahead. And
23 then we're going to go Christopher and then --
24 MR. ANDERSON: Yes. The thing that I keep
25 struggling with is NRC is currently contemplating a

1 possible updating of 10 CFR 61 and of the waste
2 classification system up to and including eliminating
3 the waste classification system. And that's what I
4 meant when I said I don't think we should be
5 speculative to future outcomes.
6 We're talking about this B/C set of waste
7 as though it were something that might exist beyond
8 the next ten years and in fact if NRC proceeds on a
9 path that I think has a high likelihood the lifetime
10 of that category is not very long. So that's where I
11 was coming from about speculating based on the premise
12 that what we have today is going to exist forever.
13 It's very unlikely to.
14 FACILITATOR CAMERON: Christopher and then
15 we'll finish with Bill.
16 MR. THOMAS: A couple of quick points that
17 were raised. In terms of looking at the doses saved
18 potentially by blending, I just find the current
19 situation alarming because I looked up the original
20 application of 2008 from Duratech to the State of
21 Tennessee and a lot of these pages are almost empty
22 because all the information has been redacted as
23 proprietary. And this is the information that should
24 be showing the dose savings.
25 So I'm just alarmed that I guess two

1 points. One, if the argument is going to be made that
2 blending is good because doses are saved that
3 information all needs to be out on the table. I mean
4 they need to talk about in my view what are -- Because
5 I understand it processing incurs lots of doses. And
6 I know that other people can have more detailed
7 arguments about that. My point is the public access
8 to that information is key.
9 The second point has to do with the idea
10 that Tom from EnergySolutions said that from his
11 perspective no other triggers exist. No other
12 applications would need to be made in order for this
13 large scale down-blending to occur.
14 That is a problem for us because Utah is
15 going to be the recipient state of this waste. I
16 think it's at least prudent to assume that for
17 downblended waste there should be stepped up
18 validation and other regulatory processes that would
19 be in place before that downblended waste.
20 But right now I don't think the way
21 EnergySolutions seems to be looking at it that Utah
22 has another handle on this. Really that Tennessee is
23 the driver and they can make these decisions to
24 approve these processing applications with no further
25 input from the State of Utah. And I think that's a

1 real huge issue.

2 And then the third concern has to do,

3 David, with what you were saying. You know I don't

4 know that I -- I'm very alarmed at the idea that the

5 individual waste package radionuclide concentration

6 doesn't matter because it's going to ultimately be

7 spread around and that's the only way to incur

8 intruder doses. I mean I think there's some serious

9 flaws with that logic and maybe that's not exactly the

10 purview today.

11 But what it makes it sound like is well

12 the individual packages could actually be Class B or

13 Class C waste as long as they are next to other

14 packages that are with other concentrations. So

15 that's why I think of primary importance to me is when

16 we're talking about downblending that could mean many

17 things. It could mean mathematical equations to do

18 averaging. It could mean physical mixing and that's

19 the part that I have not heard in any of the

20 presentations enough detail on what we're actually

21 talking about. Because if what David is saying one

22 package could basically be much higher activity and it

23 doesn't matter. That's a problem.

24 MS. RIDGE: I'm sorry. Today we're

25 talking about actually physically mixing the waste.

1 MR. THOMAS: Okay. And then I guess the
2 next point is to which degree and the follow-on
3 question.
4 MR. KENNEDY: And, Christopher, just a
5 quick clarification. The EPRI report does address
6 that sort of larger scale blending where you take
7 different packages and you assume over a long period
8 of time that they get mixed together in the trench.
9 That's not what we're addressing today.
10 That's in the EPRI report. We haven't reviewed that.
11 We intend to review it at some future time and make
12 decisions about whether that's appropriate. But all
13 we're addressing today is blending of, for example,
14 ion exchange resins in filter media in packages.
15 That's something --
16 FACILITATOR CAMERON: And that probably
17 won't be in your policy paper.
18 MR. KENNEDY: Exactly.
19 MR. THOMAS: Thanks for that
20 clarification.
21 FACILITATOR CAMERON: Let's finish with
22 Bill and then I want to see if there's anybody in the
23 audience or on the phone. So we're going to test the
24 phones.
25 Bill.

1 MR. DORNSIFE: Well, a couple of things.
2 First of all, the moving between classes things for
3 operational purposes, I'm fine with that as long as
4 when it gets disposed of it meets the performance
5 objectives.
6 I followed Tom's and agreed with Tom's
7 discussion right until the end when he said that they
8 don't think they need to provide any more
9 demonstration, any additional application, to show
10 that they meet the performance objective. And then he
11 said something at the end that showed like he thinks
12 that their existing disposal meets Class C
13 requirements.
14 MR. MAGETTE: He didn't say that. If he
15 did, he made a mistake.
16 (Off the record comments.)
17 He meant Class A. Sorry.
18 MR. DORNSIFE: Okay. So you're not
19 implying that this waste that has been blended up
20 would have either intruder protection barriers or be
21 buried deeper as required for intruders, right?
22 MR. MAGETTE: It doesn't actually have
23 both, but I'm not saying that we would analyze and
24 take credit for those. But, yes, it does have
25 intruder barriers and it is buried deeper in a

1 containerized facility. But we're not taking credit
2 for those. We're not treating it as Class C waste.
3 We're not taking credit for those in a performance
4 assessment.
5 MR. DORNSIFE: Well, but you're not
6 intending -- Unless your regulator makes you you're
7 not intending to do a site specific analysis to prove
8 that you meet the -- Was that your point? Right now,
9 you have no intention of doing it unless your
10 regulator makes you, right?
11 MR. MAGETTE: We have no objection to the
12 notion that a site specific assessment should
13 correctly address the waste that's disposed of there.
14 I have not seen anything that suggests that what
15 Marty said some time ago now about the waste form and
16 what I have suggested which is the waste doesn't know
17 it's blended.
18 I mean I think as long as we meet those
19 limits that define the waste that we've disposed of
20 and analyzed previously we would be okay. If we went
21 beyond that we would have to do more. I wouldn't
22 necessarily rule that out, but I don't have any thing.
23 I don't have a waste package now for which that would
24 be true. But if that were true, yes, I would say we
25 would have to do more.

1 MR. DORNSIFE: And just two more quick --
2 There are two other issues that I'd like to discuss at
3 some point. One is the thing we just talked about and
4 that is homogeneity. I mean how do you ensure the
5 waste is homogeneous? Do you have to sample it? Do
6 you take data from the generator? I think I heard
7 EnergySolutions say that they weren't intending to
8 sample. They would just take waste from the generator
9 and what do you do if you get a different uncertainty?
10 FACILITATOR CAMERON: Okay. Homogeneity,
11 put that in the parking lot.
12 MR. DORNSIFE: And the second issue is
13 waste form that I maintain that resins are not the
14 greatest. De-watered resins are not the greatest
15 waste form.
16 FACILITATOR CAMERON: Okay. And I'm going
17 to check in with the staff during lunch to see where
18 this should be discussed. Thank you very much, Bill.
19 MR. DORNSIFE: Okay.
20 FACILITATOR CAMERON: Yes, Miguel. Go
21 ahead.
22 MR. AZAR: I guess to Bill's comment he
23 said resins are not the best waste form. Your comment
24 is based on what? I mean what?
25 MR. DORNSIFE: The fact that basically you

1 have de-watered resins that a month after you de-water
2 them you probably have to de-water them again.
3 They're not stable waste form.
4 MR. AZAR: Do you have data?
5 MR. DORNSIFE: Yes.
6 MR. AZAR: Okay. Can you show me the
7 data? I would love to see it.
8 MR. DORNSIFE: Well, we were told by you
9 folks that if we take your resins we have to de-water
10 them.
11 MR. AZAR: Who? Who?
12 FACILITATOR CAMERON: Okay. We're going
13 to stop right now. Okay. We're going to stop and
14 we'll get into this in another session.
15 MR. DORNSIFE: And the real point is --
16 MR. AZAR: I would like to say this. I've
17 been listening to him now for three hours. So the
18 resin industry which is beyond nuclear power plants
19 and pharmaceuticals people have spent billions of
20 dollars developing this bead. So I guess it escapes
21 me when he says it's not a good waste form.
22 MR. DORNSIFE: Compared to other waste
23 forms that currently is state of the art.
24 MR. AZAR: Which other waste forms?
25 FACILITATOR CAMERON: Okay.

1 MR. DORNSIFE: -- the process.

2 FACILITATOR CAMERON: Your point has been
3 made and we're going to go back and we'll revisit
4 this. And we've all been listening to Bill for three
5 hours.

6 (Off the record comments.)

7 All right. We're going to go to the
8 audience now. Yes sir. And please introduce
9 yourself.

10 MR. CHEN: S.Y. Chen from -- I'm kind of
11 watching this with a great deal of interest just for
12 an overall prospective of that. I see the regulatory
13 issue nation around the world moving towards the
14 performance objective approach. We got caught in the
15 crossroad right now of moving from a concentration
16 based regulation into dose based or risk based
17 regulation.

18 Waste is one of them and I can point out
19 several examples. 10 CFR 20 Appendix Subpart E on
20 Clean Up we have moved to 25 millirem per year. So no
21 two sites have been cleaned up to the same level. So
22 given that situation, we're becoming more risk
23 informed risk-based or dose-based approach.

24 There are secondarily derived
25 concentration levels. I can point it out. The MPCs,

1 as many knows, a few years ago: it dictates how much
2 you can release offsite. Currently we are not doing
3 that. Everything is dose based. You have to do the
4 offsite dose analysis. We got caught in the situation
5 because we are still based on concentration regulatory
6 approach. It's been a derived concentration and I can
7 see the resounding approval here about the performance
8 objectives which I totally agree. We are moving
9 toward that.
10 But we get this remnant here of the
11 concentration caught us in a pretty awkward position.
12 And I can point it out because of that. Also EPA,
13 there is no EPA here. We still have the allowable
14 limit of intake, the ALI, air concentration for
15 workers. These are the kind of things not to
16 substitute the dose based approach. It's just offered
17 as a convenience.
18 So the result I'm going to point out the
19 classification right now 10 CFR 61 will be kind of
20 resembling the situation we have in the remnants of
21 the derived concentration situation. Ultimately we
22 still move to the performance based approach which
23 ultimately we're judging this. So surely that would
24 be the direction we're moving.
25 And I also pointed out with the table that

1 is shown here even within the same classification they
2 said B is not even the rule of 10. It's much greater
3 than 10 within the same classification here. So
4 you're blending within the same classification anyway,
5 not to mention Class A which is even greater.
6 From that perspective I would just say
7 blending actually is not an issue. Performance
8 objective is probably more a concern here.
9 FACILITATOR CAMERON: Thank you very much.
10 Anybody else?
11 (No response.)
12 Let me test the phones. Is there anybody
13 on the phone that has a question or comment?
14 MR. KIRK: Yes. Chip, this is Scott Kirk.
15 I do.
16 FACILITATOR CAMERON: Hey Scott.
17 MR. KIRK: I'm sorry I can't be there.
18 FACILITATOR CAMERON: We wish you'd be
19 here.
20 (Laughter.)
21 Go ahead, Scott.
22 MR. KIRK: My comment is really to
23 Christianne. First of all, I thought you did a
24 splendid job. You captured a lot of the same concerns
25 that we had raised and one thing we actually would

1 encourage the NRC to do as you're looking at this
2 policy change perhaps is to do a risk analysis if you
3 will where you're looking at both the likelihood and
4 the consequences. And as Bill Dornsife has mentioned
5 it was he that did the analysis that we had submitted
6 to you guys. But we looked at it really in that risk-
7 informed manner that we modeled the possible
8 consequences to an intruder to see what the dose
9 impacts would be.
10 There are consequence categories in Part
11 61 like there would be in Part 70. But we looked at
12 the consequences to see whether or not they would be
13 acceptable at various time periods like 100 years, 150
14 and 300 years.
15 And then the next thing we also wanted to
16 share was or put some insights on was the likelihood.
17 So we really looked at the requirements that applied
18 to Class A waste and if it wasn't in the regulation no
19 credit was given to it. And really what it shared
20 with us was that when you look at Class A waste, one
21 that you get upper bounds to Class B, you really do
22 need that same sort of requirement for Class B waste.
23 And from a risk standpoint there's not a lot of
24 distinction between the risk at Class A with those at
25 the higher end and Class B.

1 And the next comment I would also like to
2 make is the branch technical position because it does
3 have limitations. It has limitations that you should
4 not do it for changing waste classifications and also
5 the factor of 10 factor. And it sort of begs the
6 argument that the branch technical position really
7 prevented Class A waste to be -- up at that upper
8 level. So the way we saw it it was sort of an
9 unreviewed safety question that you guys really need
10 to look as you develop the policy.
11 And we would encourage you guys when you
12 do look at the risk as Class A waste at the upper
13 limits of Class A that you start to identify
14 additional regulatory requirements that either may or
15 may not be needed of ensure that the risk of that
16 decision is appropriate.
17 Does my comment make sense to you?
18 FACILITATOR CAMERON: This is Christianne.
19 Do you understand Scott's comment I guess is the
20 correct way to phrase it?
21 MS. RIDGE: I think I do and essentially -
22 - But you speak to looking at whether additional
23 requirements should be imposed within -- Am I
24 understanding you correctly that you're saying we
25 should look at whether additional requirements should

1 be imposed sort of within the Class A classification
2 as far as the higher end versus the lower end?
3 MR. KIRK: Absolutely. Like for example
4 it might be 10 percent of the Class A and you would
5 not need to any further analysis. Or maybe at 90
6 percent of the limit you need to have a robust
7 intruder barrier that's going to have a survivability
8 on a life span of 300 years.
9 And the reason I encourage you guys to
10 look at it like that what we've often heard is if it's
11 a guidance or a policy it's not enforceable. But when
12 it's in regulation everybody has to comply with it.
13 There are compatibility requirements that go with it
14 for the agreement states and it would ensure that
15 these -- as they get up to the Class B limits. Maybe
16 you need an intruder barrier that has a prudent life
17 span of 300 years. I mean it's just an example.
18 MS. RIDGE: And your last example I'm not
19 sure I understood because we do have different
20 requirements in that sense that Class B does have
21 additional requirements as compared to Class A waste.
22 So I'm not sure I fully understood your last point.
23 MR. KIRK: I guess what I'm saying is that
24 what you might find out is that for Class A waste
25 you'll meet the same requirements that you do for

1 Class B waste because they have very similar risks
2 when you're up at the upper end of the Class A limit.
3 FACILITATOR CAMERON: Okay. I think the
4 staff is going to be thinking about that one, Scott.
5 Anybody else? Thank you, Scott.
6 MS. MODICA: This is Linda Modica calling
7 in from Tennessee.
8 FACILITATOR CAMERON: Hi Linda.
9 MS. MODICA: Hey, Chip. This is a comment
10 regarding unintended intruder because I have had
11 personal experience as one and so has my daughter been
12 an unintended intruder on a, let's say, remediated
13 landfill and so has the -- And so that I get the point
14 across I hope that the NRC is listening to this with
15 respect to how it analyzes the risks over the long
16 term of local government jurisdictional changes, rule
17 changes, administration changes. All of those things
18 have happened and I'll just tell you quickly a little
19 story.
20 When my daughter was about five or six or
21 seven, she was playing in one of those kiddie soccer
22 leagues. And the girls were all tripping and falling
23 and finally the parents got on the field and said,
24 "What's going on here?" You know, these kids are
25 agile athletes and, yes, they're still clumsy little

1 ones, but we know that they're not real klutzes.

2 So we got on the field and near the grass

3 in one spot we see a tire erupting. In another spot

4 we see a bumper of an old Chevy or whatever from the

5 '40s coming to the surface. And we come to find out

6 that this soccer field had been a landfill.

7 So not only were we unintended intruders

8 so to speak, my daughter, the other girls. We have a

9 little boy who were playing in this kiddie league and

10 I believe other kinds of athletics were being

11 performed on this same piece of land. We weren't the

12 only unintended intruders. The bumpers, the tires and

13 the other garbage that was rising to the surface

14 became unintended intruders.

15 And none of this was known or claimed to

16 be known by the fact that this had been a landfill and

17 goodness only knows what else was buried there. We

18 just recognized certain obvious pieces of equipment.

19 And anyway, the city of Johnson City claimed not to

20 have realized that they were putting little kids on a

21 soccer field that had been a dump.

22 That is a fact and my question for the NRC

23 is how can you assure the public that over the course

24 of the lifetime of the half-life of these

25 radionuclides that local administrations who are

1 responsible -- You know, we're talking city government
2 in this case, but county governments in the case of
3 Carter Valley landfill and the other landfills that
4 are accepting bulk survey for release. And by the way
5 this is also a question for the DOE because of the
6 bulk survey for release program that's allowed to have
7 radioactive waste intrude on sanitary landfills of the
8 type that my daughter had played soccer on. How can
9 you guarantee to us, the public, that over the course
10 of the life of these radionuclides that they, that the
11 public, will be protected from them given the fact
12 that administrations change, even local jurisdictions
13 change. Who knows if the boundaries of the counties
14 and the cities will change at point? Anyway, that's
15 my question and I thank you for your time.
16 FACILITATOR CAMERON: Okay. Thanks,
17 Linda. And it obviously is a much broader question
18 than blending but also applicable to blending. And
19 I'm hoping you're going to be on the phone with us, be
20 able to be on the phone with us, all day and towards
21 the end of the day because we may need to give you a
22 fuller answer on this.
23 But, Jim Kennedy, how would you address
24 Linda's concerns in terms of assuring the
25 institutional integrity of one of these waste sites?

1 MR. KENNEDY: Yes, Linda. You raise an
2 important point because institutional control is an
3 important part of protecting an inadvertent intruder.
4 The intruder isn't just protected by ensuring that,
5 for example, Class A concentrations are met for waste
6 that's disposed of at a particular site.
7 But the NRC regulations in Part 61 for
8 institutional control are quite a bit more rigorous
9 than they are for landfill. Part 61 requires either
10 state or federal government ownership of the disposal
11 sites as opposed to local ownership or municipal
12 government ownership.
13 We also require that the license be in
14 effect for the duration of the institutional control
15 period, the 100 year institutional control period.
16 It's under license and there is oversight during that
17 period. I think that's true. Right, Tyson?
18 TYSON: Yes.
19 MR. KENNEDY: Okay. And so there's a
20 formal NRC or agreement state license in effect for
21 that period of time and only after the 100 year
22 institutional control period is over and the license
23 terminated that's when the formal oversight under
24 license ends. So those are two things that are quite
25 different from what we have in place for municipal

1 landfills.

2 FACILITATOR CAMERON: Okay. Thank you and

3 if we need to elaborate that some more we'll do that

4 during the rest of the day. But thank you for the

5 concern and the question, Linda.

6 We're ready to go to lunch here. Is there

7 anybody else on the phone that wants to say anything

8 right now? Okay.

9 And one other person in the audience. All

10 right. Let me bring this out to you. And please

11 introduce yourself to us.

12 MS. EDWARDS: Hello. My name is Lisa

13 Edwards. I'm with the Electric Power Research

14 Institute. And I guess there are just two things that

15 have come up that I want to comment on.

16 The first is that for the generators of

17 low-level waste. We've talked about storage versus

18 having a disposal pathway. And I just want to clarify

19 that for those generators who lose a disposal pathway

20 for waste that is generated it is important and

21 appropriate to recognize that storage is not free

22 either from an operational impact or from a dose

23 impact.

24 Dose is incurred in the storage of waste

25 in terms of inspection of the waste and ultimate

1 preparing of that waste for disposal in the future.
2 Disposal frequency or inspection frequencies are also
3 specified by regulation and the licensees and
4 generators are subject to those requirements.
5 And the other thing I just want to point
6 out is it seemed like there was some confusion about a
7 comment or several comments made about Class A waste
8 that's blended that approaches the Class A limits.
9 And I guess the point I want to make is independent of
10 what the disposal sites want to take credit for or
11 not. Our regulatory requirements on a federal level
12 do not require Class A waste to be stabilized.
13 But in actual practice as Class A waste
14 approaches those limits, the disposal sites either
15 because of agreement state requirements, their
16 licensing requirements or their own company
17 requirements impose greater restrictions that are
18 actually imposed by 10 CFR 61. And as a result they
19 are typically required to be stabilized either in form
20 or by the waste package that is provided and often
21 times they're required to be buried at a deeper depth
22 or in concrete overpacks.
23 The result is that those additional
24 requirements basically constitute meeting the federal
25 requirements that are associated with the disposal of

1 Class B/C waste. And I don't know if that helped
2 clarify things for people, but I got confused in the
3 discussion.
4 FACILITATOR CAMERON: Thank you, Lisa.
5 Okay. We're going to break for lunch. Be
6 back at 2:00 p.m. sharp and there's plenty of places
7 to eat. Off the record.
8 (Whereupon, at 12:44 p.m., the above-
9 entitled matter recessed to reconvene at 2:07 p.m. the
10 same day.)
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A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

(2:07 p.m.)

FACILITATOR CAMERON: Welcome back, everybody. We are going to start with Brooke Traynham, who is the Project Manager for the development of this policy paper. And Brooke is going to talk about some practical considerations, and I think that it is going to be worthwhile.

After she is done, first order of business is to hear from Miguel and Mark and also Lisa Edwards from EPRI, to give people an idea of actually what happens out in the power industry in terms of these issues that have implications for blending.

But we are going to start with -- and we will be taking a break at 3:30 today. And I know we will be done with this issue by then. Yes.

Brooke. Brooke Traynham.

MS. TRAYNHAM: Thank you, Chip.

So a lot of the issues that I am about to touch on we have already discussed to varying degrees in our earlier discussions. But I would like us to look at them through a little different lens right

1 now.

2 This portion of the meeting is going to be
3 focused on practical considerations associated with
4 the blending of low-level waste. To begin, our
5 concentration averaging BTP recognizes that it is
6 appropriate to blend and lower the concentrations of
7 waste from B/C to A, if there are operational
8 efficiencies or worker dose reductions to be had.

9 For example, if a plant consolidates its
10 resins into one tank rather than many, that
11 consolidation, for reasons of operating the plant
12 efficiently, is acceptable for the purposes of
13 blending. If a plant is able to reduce radiation
14 exposures to its workers, that, too, is a sufficient
15 basis for blending, without the constraints of the
16 BTP.

17 The next practical issue is that
18 generators of resins could simply remove the resins
19 before they reach B/C concentrations rather than
20 blending resins in B/C concentrations with Class A.
21 These ion exchange resins are used to remove
22 radionuclides from water -- for example, reactor
23 cooling water in a nuclear powerplant.

24 They can be kept in service for shorter or
25 longer time periods, and the radioactivity

1 concentration will depend upon the time in service,
2 among other factors. In other words, even if the NRC
3 were to prohibit blending that lowers the waste class
4 there still would be no prohibition from changing out
5 the resins before B/C concentrations are reached.
6 They could then be disposed of in a Class A facility.
7 A third issue is related to the question
8 of determining the waste class at intermediate points
9 in its processing. Because the waste classification
10 is related to disposal safety, not the safety at
11 upstream points, waste classification is only required
12 at the time waste is shipped for disposal, not before
13 this time. And this is a really important point that
14 we have touched on before.
15 If there were new requirements to measure
16 the concentration of waste during management and
17 processing, there would be practical considerations
18 associated with this -- for example, how often to
19 sample, how would the sampling take place, and what
20 would the dose concentrations be to the workers.
21 Finally, as Christianne mentioned, we have
22 received several comments in this process about
23 limited access to disposal and about disposal
24 capacity. One major motivation for large-scale
25 blending is that there is limited access to disposal

1 for B/C waste, since the closure of Barnwell, to out-
2 of-compact generators in 2008.
3 Blending waste to Class A concentrations
4 could eliminate the need to store larger amounts of
5 B/C waste, as well as address other issues associated
6 with storing larger amounts of waste, such as setting
7 aside spaces, constructing buildings, and monitoring
8 the waste. At the same time, as Christianne discussed
9 in her talk, this change in waste management practice
10 could have unintended consequences.
11 In addition to comments about access to
12 disposal sites, during this process we have also heard
13 several comments about total disposal capacity.
14 Before I describe the specific issues that have been
15 raised about disposal capacity, I want to emphasize
16 the point that Christianne made about disposal
17 capacity in her talk.
18 Blending, as we are considering it, does
19 not need to have any effect on disposal capacity,
20 because we are only considering mixing existing waste
21 streams. We are also considering -- we are also not
22 considering releasing waste as non-radioactive
23 material. So theoretically there is no reason
24 blending needs to affect the total amount of
25 radioactive waste to be disposed of, and, therefore,

1 there is no inherent reason blending should affect
2 disposal capacity.
3 With that said, there are some practical
4 considerations based on the way that the waste is
5 currently handled in this country that could affect
6 disposal capacity. Please keep in mind that these
7 considerations are based on current practices, and
8 these practices could certainly change in the future.
9 But, in practice, some of the ion exchange
10 resins that could be good candidates for blending
11 currently are significantly reduced in volume before
12 being disposed of as B/C waste, and they would not be
13 reduced in volume if blended and disposed of as
14 Class A waste. So, in this sense, allowing blending
15 could cause an increase in waste volume, although not
16 in the total amount of radioactivity disposed of.
17 Alternatively, as I discussed in my second
18 point about the resin removal, if we do not allow
19 large-scale blending, nuclear powerplant operators
20 concerned about not having a pathway for the disposal
21 of their B/C waste could simply take the resins out of
22 service before they are completely used, so that they
23 only have Class A concentrations of radionuclides.
24 This would cause them to replace the
25 resins more frequently, ultimately using more resins

1 to accomplish the same task. In this sense,
2 prohibiting blending could cause an increase in waste
3 volume, though, again, no change in the amount of
4 radioactivity disposed of. These are just two
5 examples of potential effects that we are interested
6 in discussing with these practical considerations.
7 We are interested in hearing your comments
8 on these issues and others that you would like to
9 bring up.
10 So this part of the meeting is going to be
11 centered around two questions that were originally
12 posted in the FRN.
13 Next slide.
14 The first is: what are the practical
15 considerations in operating a facility that bear on
16 blending of low-level radioactive waste?
17 And, finally, the NRC regulations only
18 require waste to be classified when it's ready for
19 disposal. What advantages and disadvantages might
20 there be to classifying it earlier?
21 FACILITATOR CAMERON: Great. Thank you
22 very much, Brooke.
23 I just want to remind everybody about what
24 Roy Brown said this morning, talking about unintended
25 consequences for the radiopharmaceutical industry.

1 Because of the blending that goes on there, I think it
2 probably is another practical consideration, but we
3 won't lose sight of that.
4 And to kickoff this discussion, we have
5 heard some requests from Christopher and Diane for
6 more information about what actually goes on in the
7 powerplants. And some of the issues that Brooke
8 brought up, we need that information, we need that
9 discussion.
10 So I was going to -- besides talking to
11 Mark and Miguel about this, I was going to ask Lisa
12 Edwards from EPRI to come up. And could the three of
13 you sort of give us some background on this? And if
14 you could, if there are some things that you want to
15 say to address the issues that you heard from Brooke,
16 please do that also.
17 So I don't know how you want to do it.
18 Lisa, do you want to sort of kickoff, and then we go
19 to Mark and Miguel for amplification? It's up to you
20 three. Okay. Well, why don't you -- why don't you
21 come up here, and we'll put you beside Bill Dornsife.
22 (Laughter.)
23 Now why are they laughing?
24 (Laughter.)
25 Okay. He is not going to be at a loss for

1 words. Okay. There you are.

2 MS. EDWARDS: All right. My name is Lisa

3 Edwards, and I am the low-level waste and radiation

4 management program manager for the Electric Power

5 Research Institute.

6 But I am actually going to respond to this

7 question more from a plant background. Prior to

8 coming to EPRI, I worked in commercial nuclear

9 powerplants for 18 years. I'm a senior reactor

10 operator, which just means that I have gone through

11 extensive training in terms of the operation of the

12 nuclear powerplant.

13 So that being said, in kind of a general

14 overview of how demineralizers and low-level waste

15 resins are used and moved about in the plant, let me

16 just make a couple of points. The resin is placed

17 into vessels called demineralizers. And water reactor

18 coolant, which is used for cooling the reactor and for

19 transferring heat, needs to be very clean and very

20 pure in order to protect the material integrity of the

21 plant itself. That is the pipes and the vessel.

22 And so the resin is used, from an

23 operational perspective, in order to maintain high

24 purity water to protect the vessel's integrity,

25 because that forms a safety boundary. When the resin

1 no longer is able to perform at a level that meets
2 those operational requirements, it is removed from
3 service and is typically routed to some kind of
4 holding tank. We often call that a spent resin
5 storage tank.
6 The design purpose of that is it is
7 impractical to transfer those resin beds on a routine
8 basis directly into a disposal container. The reason
9 for that is twofold. One is that when those resins
10 are first removed from service they can be very high
11 dose rate. Some of that dose rate is due to very
12 short-lived radionuclides, so routing it into a
13 storage tank allows a place where it can be moved to
14 safely from an occupational radiation exposure
15 standpoint, where it can be stored until it decays.
16 The other purpose that it serves is that
17 when we package waste for disposal, we don't want to
18 send a half-full container to a disposal site. In
19 fact, most disposal sites -- well, all disposal sites
20 have requirements that would prohibit you from doing
21 that. So there is an operational aspect of you want
22 to put together enough resin, so that you fully, or as
23 close to fully as possible, fill up a high integrity
24 container, which is what we use to dispose of the
25 waste typically.

1 So that being said, when the resin is
2 exhausted, it is moved into the spent resin storage
3 tank where it may or may not be commingled with other
4 resin that is in service in other places or was in
5 service in other places in the plant.
6 And then, based upon operational latitude,
7 what works best, is people will bring in a HIC when
8 there is enough resin in the spent resin storage tank,
9 and you have maximized the decay time within the plant
10 holding system, it will be moved into a high integrity
11 container and shipped for either further processing or
12 disposal.
13 The point -- there is a couple of really
14 salient points about the plant design. The plant
15 design is focused on meeting the operational needs of
16 the plant and protecting the plant materials. It is
17 not designed, first and foremost, for the advantages
18 of waste handling. And it is appropriate to note that
19 those plant designs were put into place years and even
20 decades before any of the low-level waste legislation
21 was thought about or created.
22 So it wasn't designed in any way to
23 respond to those regulations. It was an artifact that
24 was -- already existed.
25 The other point that I would make is that

1 I am not going to say that there are not instances
2 when movement of resin and commingling of resin does
3 not result in a lower waste classification. But I
4 will say --
5 MS. D'ARRIGO: Could you say that again
6 without so many "nots"?
7 MS. EDWARDS: I don't want to make the
8 claim that when you put multiple waste streams
9 together that it never results in a lower waste
10 classification of the commingled waste.
11 MR. DORNSIFE: But is it a waste at that
12 point?
13 MS. EDWARDS: Yes. When it is expended
14 and exhausted from its operational use, it --
15 MR. DORNSIFE: I thought -- are you sure
16 it's not a waste until it goes into the --
17 MS. EDWARDS: Can you hold the thought
18 just for one second? I'll get back to it. I'm not
19 trying to -- I'm trying to do this --
20 MR. DORNSIFE: Okay.
21 MS. EDWARDS: -- as succinctly as
22 possible.
23 MR. DORNSIFE: Okay.
24 MS. EDWARDS: But what I will tell you is
25 that on a plant basis, a single plant basis, typically

1 when you commingle waste streams it results that the
2 entire waste that is commingled together actually
3 results in a higher waste classification rather than
4 a lower waste classification.
5 Now, there are significant drivers that
6 affect operational costs at plants, which affect all
7 of our electricity prices, that people will look for
8 flexibility within the system, so that they may be
9 able to route a resin bed that is Class A directly
10 into a container, rather than into that holding tank
11 that exists within the plant design capability, and
12 that way they have a waste stream that has a disposal
13 pathway available to it, and it is not stranded, which
14 means it is not representing a storage burden, which
15 is a significant burden.
16 So I guess that would be my simplified
17 description of how resin is moved around in a plant
18 and how it is used. So, then, you know, whatever is
19 not clear --
20 FACILITATOR CAMERON: Can we just hear if
21 Miguel and Mark want to amplify on that great overview
22 that Lisa gave us? And then, I guess one question
23 that the NRC and others might be interested in is:
24 what are the implications for your facilities of the
25 NRC's development of policy on this issue?

1 MR. AZAR: Okay. Well, we have 10 sites,
2 17 operating reactors. At some sites we have the
3 ability to transfer directly from the vessel where the
4 resins typically sit into a container, which Lisa
5 referred to as a HIC or a liner. At some sites we
6 don't have that ability. It is just a matter of, you
7 might say, the plumbing, how the plant was designed.
8 Well, do we have the ability to mix the
9 resins all together? That is just part of the design.
10 When we say "mix," where it all goes to a common tank
11 and there is a pump, so it mechanically has to be
12 moved, and in that process, in order to get a sample,
13 so you can characterize that you have the ability to
14 recirc the tank. So you can get a homogeneous mix
15 there. That is not a problem for us, whether it's in
16 bead form or it's in powdered form.
17 Additionally, as far as like if you were
18 to change the regulation, and you said, "Thou shall,"
19 it would be impossible, because we are not designed
20 that way. And I don't think -- honestly, if you were
21 to design something that way, I don't think you would
22 want to see -- you would not be doing anybody any
23 justice, because you would want everything to be so
24 pedigreed that it would just -- the cost, the dose,
25 the upkeep would be so astronomical it would just not

1 be practical.

2 FACILITATOR CAMERON: Great. Thank you.

3 And Mark?

4 MR. CARVER: I would agree with my

5 previous two counterparts and what they have said. We

6 don't necessarily do any intentional mixing of our

7 radioactive waste in our resin tanks. So I know you

8 want -- you are key to that. But the whole key is is

9 that we have nine sites, 11 reactors, and you've got

10 to understand that they were built by maybe three or

11 four different vendors that actually licensed the

12 plants in the '70s and '80s.

13 And like Lisa said, they were not built

14 with all of the implications that you might have with

15 low-level radioactive waste that transpired through

16 the Policy Act to '80 to '85. But the one thing you

17 could see is is that each of the sites more lent to

18 the economics of segregating waste to trying to take

19 advantage of the fact that B/C waste was much more

20 expensive for many years.

21 So the sites have done some of the

22 opposite, and they have segregated to get their A to

23 actually be A, and whatever they could figure out was

24 B/C, to actually be segregated and then shipped off as

25 B/C waste. But there is no -- the way that everything

1 is set up, it is so hard for us to have ever done
2 anything intentional that way. It is all based on the
3 size, the number of tanks, and everything that belongs
4 with the infrastructure of a nuclear powerplant.
5 FACILITATOR CAMERON: Great. Very
6 informative.
7 Let's start a discussion on this. Let's
8 go to Marty and Ralph and Diane.
9 MR. LETOURNEAU: Yes. DOE has a lot of
10 experience with wastes that, in essence, get blended.
11 And in the name of talking about potential for
12 unintended consequences, I want to talk a little bit
13 about some of the other examples beyond just resins
14 and powerplant resins.
15 One of the things is we look at blending
16 as, well, what is the opposite of blending? It is
17 segregation. It is keeping things from coming
18 together. And there is nothing in the requirements
19 that require you to segregate wastes from different
20 sources. And when we talk about operational
21 efficiencies, that is often where we are talking about
22 these types of issues where things have been designed
23 for waste to come together.
24 But it also has to do with how you define
25 your work and how you define the scope of work. Does

1 a facility that does cleanup and decontamination work
2 throughout the plant have to separate the waste that
3 is generated in one part of the plant from waste that
4 is generated in another part of the plant? No. They
5 can say that is all job waste, and that all goes into
6 one container. And when the container is full, it can
7 get shipped off.
8 So from a generator standpoint, is that
9 blending? Or is that just waste management? Once
10 that waste gets sent off to -- say it goes to a
11 processor instead of directly to a disposal facility.
12 That processor is receiving waste from many different
13 generators. That waste is going to be blended,
14 whether you want to call it blending or not, as that
15 facility processes the waste.
16 They are not saying, "Oh, I got this
17 barrel from Exelon, and I am going to process that and
18 send that off," and then, "Oh, I got another barrel
19 from Entergy." They have certain volume restrictions
20 and BTU levels that they have to reach, and they blend
21 the waste to go through their process. So blending
22 happens in managing the waste.
23 One of the examples that we run into is we
24 do a lot of D&D work, where we are taking down a
25 building. There is no requirement for us to go into

1 that building and take all of the hot stuff and put it
2 in one pile, and all the lightly contaminated stuff
3 and put it in another pile, and the uncontaminated
4 stuff in a third pile. If we did, we would end up
5 with, you know, one pile that would probably be
6 transuranic or would be considered greater than
7 Class C.
8 We say the job is to D&D the building. We
9 are taking the building down. It is all going to be
10 D&D rubble, and we consider the contamination across
11 that whole volume. Is that blending, or is that how
12 you define the scope of work?
13 So if you get into a situation where you
14 are trying to prevent blending, purposeful blending,
15 you run up against, how do you prevent blending
16 without forcing segregation, without forcing poor work
17 practices?
18 FACILITATOR CAMERON: Thanks, Marty.
19 And this is -- Roy, this is the same issue
20 you were talking about before, and there could be many
21 inefficiencies, or whatever, related to this. Do you
22 want to say anything further at this point before we
23 go to Ralph?
24 MR. BROWN: Yes, let me point out one
25 other thing. This is -- may seem way, way, way off

1 track, but I'll -- give me a minute and I will circle
2 back around.
3 There is a movement afoot to eliminate the
4 export of high-enriched uranium for the production of
5 medical isotopes. Right now all of the medical
6 isotopes, all of the reactor-based medical isotopes
7 used in the U.S., are produced either in Canada or
8 Europe. There is a movement to eliminate the use of
9 high-enriched uranium to produce these isotopes and
10 convert to LEU.
11 At the same time, there is a parallel
12 effort to establish U.S. manufacturing capability for
13 these same medical isotopes. Right now our industry
14 uses very similar resins for cooling water for
15 cyclotrons and for pharmaceutical development. Right
16 now those resins are used in very, very small
17 quantities, with very, very small levels of waste,
18 certainly Class A waste.
19 Once there is medical isotope production
20 capability established in the U.S., these
21 manufacturers will be using resins to selectively
22 remove out the unwanted fission products and purify
23 the wanted medical isotopes that come out of the other
24 end. So although right now the medical industry does
25 not generate any Class B or C resin, that will change

1 in the next six to 10 years, just an asterisk for
2 that.
3 So when U.S. production of moly-99 and
4 other medical isotopes is brought into the U.S., the
5 industry will be generating Class B and possibly
6 Class C resin.
7 FACILITATOR CAMERON: And in that
8 generation, as you describe with current operations,
9 or Marty described with DOE, or whatever, those wastes
10 may commingle.
11 MR. BROWN: Yes, that's right. And I want
12 to make sure we're clear on this. We're not talking
13 about barrels and drums and HICs full of resins. We
14 are talking about, you know, hundreds of ccs at a
15 time, hundreds of ccs per week, not huge volumes but
16 certainly Class B and Class C, which will make that
17 probably a candidate for blending.
18 FACILITATOR CAMERON: Okay. Thanks, Roy.
19 Let's go to Ralph, and then Diane, and
20 then Christopher. And Jim has his tent up, so we'll
21 -- let's go to Ralph, and then I want to check in with
22 Jim and see if he has any questions to put before
23 everybody. But go ahead, Ralph.
24 MR. ANDERSON: Yes. First of all, I would
25 just like to comment that the people that you heard

1 from, we all gather collectively to assess our policy
2 approach to these kinds of issues. So what I'm about
3 to say is an extension of what you've heard
4 previously, and I would also like to commend my
5 colleagues for such a succinct description of our
6 practices within the plants, and Roy for how it
7 affects other regulated communities.
8 What I would offer is that our view is
9 that, although NRC certainly should consider the broad
10 range of potential impacts associated with this issue,
11 clearly that is what is being looked for by the
12 Chairman, and I would expect by the full Commission.
13 At the end of the day, the mission of the
14 agency I think should focus in on whether or not the
15 proposals that they put forward have both the purpose
16 and the effect of assuring adequate protection of
17 public health and the environment.
18 I think there are a lot of other issues
19 that have come up surrounding this, marketplace
20 competition issues, state sovereignty issues, public
21 concerns about what this might mean locally for their
22 disposal situations, all of which are extremely valid
23 issues, but I would comment that none of which are
24 issues that either should be or can be resolved by the
25 Nuclear Regulatory Commission.

1 I will say for the record that we have
2 publicly, on many occasions, stated that issues of
3 whether a state might wish to accept certain wastes
4 for disposal, whether a community might wish to accept
5 that, whether a disposal operator might wish to accept
6 that waste, are the prerogatives precisely of those
7 communities.
8 And we believe that they -- that all fits
9 together in an important process that if NRC can
10 validate the adequate protection of public health and
11 the environment, that that then passes along the
12 decision -- ultimate decisionmaking on what occurs,
13 when it occurs, and how it occurs, to the appropriate
14 parties.
15 So I would just suggest that throughout
16 this process that we not get too hung up on things
17 beyond NRC appreciating the impacts of its decision
18 without it getting confused that, in fact, NRC is
19 making such decisions. I think that is the
20 distinction that we need to preserve.
21 I will say this, that one of our general
22 principles that is in a white paper that we actually
23 use to guide our policy deliberations, our research
24 program, and our performance, is that we think that
25 NRC should not unnecessarily restrict flexibility in

1 its waste disposal regulations. You know, we believe
2 that where things should be regulated should be for
3 the purpose of health and safety, not necessarily to
4 facilitate economic benefit or not even necessarily to
5 facilitate additional disposal options per se.
6 The situation we are in today is
7 transient. It may exist in five years; it may not
8 exist in five years. I would hate to see us make
9 decisions solely on the basis of conditions that exist
10 right now that may not exist in the future. So I
11 would just offer that up.
12 I think if NRC stays to its mission, which
13 is carried out extremely well among all federal
14 agencies, that the agency will reach a right result.
15 FACILITATOR CAMERON: Thank you. Thank
16 you, Ralph.
17 Jim, before we go to Diane and Christopher
18 and Joe, do you have something that you want to put on
19 the floor for us?
20 MR. KENNEDY: Just a quick comment and a
21 question for Marty. Marty, I appreciate your
22 explanation of blending and how it affects operations
23 and how you need to do it for operations.
24 With respect to blending in the commercial
25 program, the big focus is not just blending but

1 blending that changes the waste concentration from B/C
2 concentrations down to A. That is -- in some people's
3 minds that is sort of sacrosanct. What can you say
4 about that at DOE? And I guess I will also say, isn't
5 it true you don't have subclasses or A/B/C, you just
6 have low-level waste?
7 MR. LETOURNEAU: That's true. We don't
8 have the classification system, but if we were -- and
9 we do -- ship our waste to commercial facilities, we
10 have to comply with their classification limits per
11 their license. So we have had situations where
12 Department of Energy waste has been downblended to be
13 able to access a facilitate to meet their limits.
14 MR. KENNEDY: And then, for a DOE
15 facility, disposal at a DOE facility, I assume that's
16 a non-issue, because you don't have the waste classes
17 at the DOE disposal facilities.
18 MR. LETOURNEAU: That's correct, yes.
19 MR. KENNEDY: Okay.
20 FACILITATOR CAMERON: Okay. Thank you.
21 Diane?
22 MS. D'ARRIGO: The existing operating
23 nuclear reactors were not designed to create waste in
24 the A/B/C categories, but the A/B/C categories were
25 developed based on some analysis of that waste. Is

1 there any change in the design of new reactors that
2 facilitates, you know, the current situation of, you
3 know, having A/B/C classes?
4 Or are the new reactors -- I mean, what
5 I've read of some of them, it looks like there is not
6 a specific change to deal with the -- you know, with
7 creating waste per class. I wondered what you could
8 tell me about that. And I do have two more points.
9 MS. EDWARDS: You're right. The new
10 designs, to my knowledge, the ones that I have seen,
11 are not designed specifically to look at the
12 segregation or commingling of low-level waste.
13 Again, although it's of primary importance
14 to everyone in this room and that there are groups of
15 people in the nuclear powerplant who are more or less
16 solely focused on the management of low-level waste,
17 you have to remember the primary mission of the
18 nuclear powerplant itself is producing electricity and
19 creating a plant that can be sustained and maintained
20 safely for a long period of time.
21 So those systems that generate waste, what
22 is being addressed first as the primary focus is how
23 to design that system to most effectively and
24 efficiently meet that operational need. So we don't
25 want valves to corrode or pipes to corrode or the

1 vessel to corrode, we want to minimize that to near
2 minuscule, hardly measurable levels. And we do that
3 by making water ultra pure, and that is how the resins
4 are used.
5 So when an engineer hops in and designs a
6 system, that is what he is thinking about -- how do I
7 protect my nuclear powerplant materials? And then --
8 MS. D'ARRIGO: So you maximize the
9 filtration and the --
10 MS. EDWARDS: Right.
11 MS. D'ARRIGO: -- water quality.
12 MS. EDWARDS: Right, to maximize the --
13 yes, exactly what you said. Then, the resulting
14 waste, what happens is is the people at the plant who
15 focus on that look at, okay, now that I have this
16 waste, which was necessarily generated in the
17 operation of the facility, how can I best manage that
18 waste given that there are regulations on how it is
19 classified, how it is handled, how it is transported,
20 and that there are costs associated with meeting those
21 obligations.
22 And so we don't want to make everything
23 B/C waste, because it's very expensive. And right now
24 it doesn't have a disposal pathway; it's very
25 expensive to store. So those professionals will look

1 at, "Okay. Well, what are our options, now that we
2 have this waste, for handling it?" To manage that
3 most effectively as a waste stream, so that its
4 ultimate disposition costs as little as possible in
5 terms of waste, but is done safely and in compliance
6 with regulations.
7 FACILITATOR CAMERON: And, Ralph, did you
8 want to add something, or Diane, on this?
9 MR. ANDERSON: Yes, just one other thing.
10 That was the very precise explanation. At an
11 intuitive level, we have an international nuclear
12 energy industry. Plants are not designed exclusively
13 for the United States, and, in fact, we don't even
14 represent the majority of new plants that would be
15 built in the near future.
16 So the idea that an international design
17 would be focused in any way on the very quaint and to
18 some somewhat outdated regulations of the United
19 States, it just doesn't play out. Again, the designs
20 are aimed at efficient cost effective operation, and
21 not tailor-made to the current classification scheme
22 that we have in place.
23 FACILITATOR CAMERON: Okay. And, Diane,
24 some other points before we move on?
25 MS. D'ARRIGO: Yes. Let's see. It may be

1 something to put in your bike rack parking lot there.
2 But it sounds to me like the whole processing
3 industry is something that evolved as part of the
4 nuclear fuel cycle, fuel change, that we have got now
5 a whole new step or series of options for steps.
6 And that has never really been -- it
7 evolved, and it is not something that there has been a
8 larger evaluation on. We are talking about ALARA for
9 the whole system, that kind of thing. I am suggesting
10 that the NRC needs to look at, you know, how much we
11 need to have processing.
12 I mean, the EPA has specific processing
13 requirements for hazardous materials. I think there
14 needs to be a whole processing discussion, so that is
15 not necessarily part of this, but it is part of this.
16 I mean, we are looking at a piece of what processing
17 has created and competitions, and so forth.
18 And then, I have another question, which
19 is it has been repeatedly stated here that we are only
20 looking at downblending of B and C to A, and we are
21 not looking at downblending or diluting from A to less
22 than A, or lower than A.
23 So, and, you know, many of us have been
24 involved in the old B or C battles, and deregulation
25 clearance, whatever you want to call it, but I want to

1 know where the distinction is going to be made, if we
2 are making a policy decision on, well, we can change
3 classes of wastes, what do we have right now that
4 would prevent support for downblending or allowance
5 for downblending to not apply to regulated to not-
6 regulated wastes, other than the 20.2002 case-by-case
7 process.
8 But, anyway, I think that there is -- we
9 are talking about changing classes here, and so I want
10 to make sure that we are not inadvertently setting the
11 stage for something -- for another whole battle.
12 FACILITATOR CAMERON: Okay. Thank you.
13 Thank you, Diane.
14 Let's go to Christopher, and then to Joe.
15 Okay? Okay. Christopher, and then Tom, and then I'm
16 going to ask Bill to give us some context. Go ahead,
17 Christopher.
18 MR. THOMAS: Good. Thank you.
19 Well, Linda, I really appreciated that,
20 and Miguel and Mark. You know, just an observation is
21 that what you described to me seems totally of a
22 different character than intentional downblending. I
23 mean, it appears to me that there is some flexibility
24 for operating nuclear powerplants to be able to
25 operate in a way that makes sense to them. And I

1 understand that.

2 I think that in this case, the way it

3 seems to me, is that the guidance and the allowance

4 for that flexibility within an operating facility is

5 somehow being used to now birth a new industry, which

6 is totally different, which is the intentional mixing

7 of waste streams that, you know, were already

8 separated to begin with, you know, and to put them

9 together in certain ratios and things for the purpose

10 of changing the waste classification.

11 So I am saying I think -- I am glad for

12 the explanation, and because of that I think that is

13 something the NRC should consider. I mean, is

14 flexibility for one facility enough to now create a

15 new facility that does downblending? And then,

16 furthermore, if that's the case, should that new

17 facility require additional regulation, you know, to

18 ensure homogeneity in some of these other issues?

19 And then, just an observation -- and I

20 think this fits here. Oh, yes, it is -- we have been

21 talking a lot about the idea of when you classify a

22 waste stream. And it occurs to me that -- here is how

23 I read it. You know, blending of waste streams should

24 not be undertaken solely for the purpose of waste

25 classification. That doesn't say to me blending of

1 only classified waste streams should not be
2 undertaken.
3 It just says waste streams, and it occurs
4 to me that -- that at the point at which you have
5 collected these non-reusable resins they are a waste
6 stream. They are a waste stream. Maybe they haven't
7 been classified yet, but they are a waste stream. And
8 it seems to me this guidance in this NUREG-1854 is
9 saying you shouldn't take waste streams, things that
10 you know are going to be waste, and mix them solely
11 for the purpose of altering the classification.
12 And I also -- I mean, and I see a
13 difference between going up the classification scale
14 and going down, because going back down all of a
15 sudden it seems to me you have to ask a bunch of
16 questions about, well, how is it going down? How much
17 is it being remixed? You know, what is the uniformity
18 of the concentration? So I just wanted to address
19 those comments here.
20 FACILITATOR CAMERON: Okay. Thank you,
21 Christopher. And we are going to go to Tom and Bill,
22 but I wanted everybody to think about what Christopher
23 said about, well, it's one thing for a particular
24 industry to have the flexibility to manage their
25 wastes, and sometimes it is going to be -- it is going

1 to be mixed.

2 But now what we seem on the verge of doing

3 is doing something beyond that, which is allowing

4 downblending to decrease a classification. And I just

5 want to make sure -- I thought that was well said from

6 the standpoint of focusing the issue. I want to make

7 sure that -- to find out what the NRC and others

8 believe about, is that -- is that what we're doing

9 here?

10 So let's get some comments on that also,

11 but let me go to Tom, and then we're going to go to

12 Bill.

13 MR. MAGETTE: Thanks, Chip. I have a

14 couple questions for Lisa, and then a comment. I want

15 to respond to what you just asked, Chip, beforehand.

16 We have heard specific comments from Roy, we have

17 heard specific comments from Marty. Frankly, they

18 just scratched the surface about the intentional

19 blending that already occurs. And we could talk a lot

20 more about that, but I'm not really sure that's the

21 idea here. So I think the concept of birthing an

22 industry is simply incorrect.

23 Also, the industry that would be doing

24 anything that would be intentional mixing already most

25 definitely exists in lots of different companies,

1 because it is called "waste processing," and we do a
2 lot of it. We compact. We incinerate. We thermally
3 process. We dewater.
4 We process radioactive waste every day of
5 the week. The 25 shipments per week that I talked
6 about going into Bear Creek, which is just one of many
7 even just in the city of Oak Ridge, every single one
8 of those shipments is low-level radioactive waste
9 going for processing. So make no mistake about it,
10 that industry exists and is alive and well. So it is
11 not a new industry, by any stretch of the imagination.
12 The questions I have for Lisa are you
13 talked a lot about water chemistry, and the first
14 question is, would you agree that another objective of
15 the water processing in the powerplant is also to
16 reduce radioactive effluence?
17 MS. EDWARDS: Absolutely. There are
18 multiple applications of resins, and one of them is to
19 process liquid effluent water. And it is also used to
20 process spent fuel pool water. I just kind of stuck
21 to the overview. We also process water not just for
22 material protection, but also for dose reduction.
23 MR. MAGETTE: Well, that kind of goes to
24 my next question. You mentioned that there are
25 significant operational impacts associated with

1 storing waste. Could you elaborate on that a little
2 bit more?
3 MS. EDWARDS: Yes. To try to keep it
4 succinct, occasionally I have heard comments that seem
5 to minimize the impact of storage as if storage can
6 take place and it is just, you know, a little thing
7 that we are doing on the side. And I guess my
8 perspective, from working with all of the nuclear
9 powerplants in the United States, is that storage is a
10 significant burden.
11 When I say "significant," I don't mean
12 that it just takes extra labor hours to deal with it.
13 Facilities are constructed that are expensive to
14 construct. Heavy equipment is required to transport
15 the waste and place it into containers for storage,
16 and then later to remove the lid so that inspections
17 can be done.
18 And then, on top of those capital
19 investments, there is also, you know, the additional
20 handling when you go in to do inspections, and later
21 on those people on the site not only have to move it
22 to storage, but then later on they have to move it out
23 and ship it again somewhere for either processing or
24 disposal.
25 It is more efficient operationally if it

is packaged and immediately either shipped to a processor or a disposal site. That is strictly from the nuclear powerplant perspective.

MR. MAGETTE: Okay. Thanks, Lisa. I think that goes to answering your first question, Brooke, on your last slide in terms of real-world practical considerations. And I think that's a real good one, and I think Lisa put it very well.

I would like to just briefly address your second one, and my comment would be, as I discussed in my presentation in December, which I won't go into the same detail here, Larry, but I think there clearly is a strong technical rationale behind when waste is classified.

And not only do you not want to classify it sooner, but depending on the type of processing that you are going to do, and, frankly, if you are going to do any processing, you can't classify it sooner, because you don't know what it would be after you process it and package it for disposal.

So I think it's an important question that nobody has spoken to yet, and I think it's one that actually has a pretty simple answer. So that's all.

Thanks, Chip.

FACILITATOR CAMERON: Thank you very much,

1 Tom. Bill.

2 MR. DORNSIFE: Yes. I think we've kind of

3 gotten a little bit far afield from where this topic

4 arose from. My understanding is that we're trying to

5 get a definition that is in the BTP of what

6 "operational efficiencies" mean. I mean, I can -- I

7 have no quarrel, you know, with upfront operational

8 efficiencies.

9 The issue is: how do you come up with a

10 valid operational efficiency when you are talking

11 about a processor blending waste and then it going to

12 disposal? What operational efficiency does that --

13 does that provide?

14 And, you know, subsequently it's -- if you

15 come up with an operational efficiency, you don't have

16 to use the plus or minus 10, right, under the current

17 guidance. Is there a justifiable operational

18 efficiency for blending, a processor blending wastes

19 for disposal purposes? I mean, I thought that was the

20 whole reason for talking about this, right?

21 FACILITATOR CAMERON: It is certainly one

22 of them. Larry Camper is coming up.

23 MR. DORNSIFE: Oh, the big boy is going to

24 answer.

25 (Laughter.)

1 MR. CAMPER: No. I'm sitting here --
2 first of all, Lisa, I think your presentation was
3 excellent. That was one of the most succinct and
4 crisp explanations I have heard of that particular
5 topic in all of the years, quite good, quite good.
6 No, but in sitting here listening to this
7 -- and I think, Bill, your comment really gets back to
8 the -- I don't think that that's why this topic is on
9 the table. Let's get real and step back for a moment
10 here.
11 We have a system for waste management in
12 -- we have a waste classification scheme. It's not
13 the only one. The IAEA uses a different one. There
14 may be other ways to create a waste classification
15 scheme. We have a waste classification system in this
16 country, though, that has worked. It has worked well.
17 We dispose of waste safely. Blending has
18 taken place, is taking place, and it does so in many
19 different forms for different reasons. Reality --
20 what is different today, though, is -- and this is the
21 moment -- this is the issue at this moment in time,
22 but five years from now it will be a different issue,
23 or 10 years from now it will be a different issue.
24 The issue at hand at the moment is is that
25 Barnwell ceased to accept Class B and Class C waste

1 from utilities and other producers of waste in 36
2 states. That created an important national issue as
3 it relates to how waste is to be disposed.
4 Out of that -- and I think it is probably
5 fair to say, although I wouldn't begin to speak for
6 Tom or Energy,Solutions, if that issue had not
7 occurred, this whole question of blending from an
8 increased commercial advantage point might not even be
9 on the table. I mean, Tom himself in our meeting back
10 in December commented in the affirmative if it wasn't
11 for purposes of reducing the classification of waste,
12 so that it could be safely disposed of, there probably
13 wouldn't be a business reason to pursue this.
14 So the issue that has come to the
15 forefront is the fact that 36 states do not have
16 access to Class B and Class C disposal.
17 Now, there is conjecture that the WCS site
18 in Texas may be able to exercise the importation
19 provisions in the Texas statutes and take away some
20 other states. Perhaps that will be the case. But the
21 fact of the matter is what drives this issue is that
22 this industry once again is reacting to constraints
23 that are put upon it in terms of its waste disposal,
24 and it is working to find ways to deal with the waste.
25 As a result of that, blending has come to

1 the forefront. Five years from now it may be
2 something else. So the question that we as a
3 regulator have to deal with is: while blending has
4 gone on for years, albeit on a much smaller scale,
5 residual waste is talked about in the regulations,
6 aggregation. I mean, assignment of the waste
7 ownership is, you know, identified, and so forth.
8 The fact of the matter is -- attribution.
9 The fact of the matter is we have a phenomenon that
10 is happening now on a much larger scale, and, as a
11 regulator, we need to take a responsible position upon
12 it. But it is not about defining an operational
13 efficiency. I mean, that is the essence of the issue
14 upon the table is this thing called blending. What
15 should be our regulatory posture on it? Status quo?
16 Policy? More guidance? Regulations? Stop it? So
17 that's the issue.
18 MR. DORNSIFE: Well, let me -- I take some
19 issue with that.
20 MR. CAMPER: Okay.
21 MR. DORNSIFE: Very quickly, you know,
22 what business -- if indeed there is no health and
23 safety issue, which you say there isn't, what business
24 is it of NRC's from a health and safety standpoint
25 that you should be promoting or involved in this

1 issue? You say you don't want to get involved in the
2 viability of WCS as an issue. What's the difference?
3 MR. CAMPER: Well, we're not promoting it.
4 We're addressing it.
5 MR. DORNSIFE: Okay. But what's the
6 difference? Okay?
7 MR. CAMPER: Well, the issue is -- the
8 issue is, Bill, as I said earlier in my comments --
9 and as we have discussed here today, we have guidance
10 out there that is -- Patty pointed to it in her
11 commentary, too. I mean, it places -- it is in
12 opposition to itself. It sends different signals.
13 I would suggest that in certain places it
14 is confusing. And, look, regulators -- about
15 guidance, I mean, regulators try to do a very good
16 job, a very thorough job. But guidance gets created
17 along a long path of time.
18 Sometimes that guidance, when one looks
19 back down the road five years later, 10 years later,
20 it is not uncommon for guidance to be in conflict with
21 itself. But at some point, when it becomes an
22 emerging and more controversial and industry issue,
23 you have to stop and look at it in totality and
24 evaluate it and figure out what you can do as a
25 regulator to make it more crisp, to make it more

1 understandable.

2 It is very troubling for us to observe

3 meetings, industry meetings, when individuals are out

4 there bantering about our guidance, our regulatory

5 positions, hurling hand grenades at each other in

6 these meetings because they have different strongly

7 held views, many times prompted by business models

8 that are different.

9 We believe, as a regulator, it is

10 incumbent upon us to step up and deal with this issue.

11 MR. DORNSIFE: But, Larry, it didn't

12 become an issue until this -- until this situation

13 arose.

14 MR. CAMPER: Bill, the point is --

15 MR. DORNSIFE: Everybody was comfortable

16 with the guidance.

17 MR. CAMPER: But the point is: it is an

18 issue.

19 FACILITATOR CAMERON: Let me -- thanks for

20 providing that, Larry, because I think you are getting

21 us to focus on something. And I have -- I want to go

22 to Marty and Joe and David, but I need to ask Ralph

23 Anderson a question. Ralph, a few minutes ago you

24 talked about the NRC's concern should be adequate

25 protection of public health and safety, shouldn't be

1 concerned with economic benefit, state sovereignty,
2 although important issues in and of themselves, not
3 the NRC's concern.
4 When you hear Larry talk about FRBUS, the
5 emergency, the need to address, as he put it, the
6 lending issues because of the lack of B and C waste
7 disposal, how does that fit into your taxonomy of
8 adequate protection of public health and safety,
9 etcetera?
10 MR. ANDERSON: Well, thanks for the
11 opportunity, by the way. First of all, I wasn't
12 saying that those issues aren't important for the
13 consideration. In fact, I believe I said the
14 opposite. I just said at the end of the day, the
15 decision that rests within the prerogatives and
16 authority of the NRC are fundamentally to assure
17 protection of public health and the environment. I
18 can find that on your website for you on the front
19 page.
20 (Laughter.)
21 FACILITATOR CAMERON: Yes, we know it. We
22 know it is.
23 MR. ANDERSON: So that's who you are.
24 That's what you --
25 FACILITATOR CAMERON: I'm glad people were

1 paying attention.

2 (Laughter.)

3 MR. ANDERSON: Yep. So now in that

4 context, and to echo what Larry said, and to take

5 issue somewhat with what Bill said, which of course I

6 never do, it is a health and safety issue.

7 It is a health and safety issue in that

8 the conglomerate of radioactive material users and

9 radioactive material vendor service companies, whether

10 it be nuclear energy or pharmaceuticals or anything

11 else, has determined a function that at least some

12 would like to carry out as a part of doing their

13 business, and to carry that function out there is a

14 nexus with NRC regulations that requires that NRC take

15 a look at this and say, "Well, does that make sense?

16 Will it protect the adequate protection of health and

17 safety? And also, if you were to do it, can you do it

18 in our existing regulatory framework, or do you

19 require changes?"

20 That is the health and safety nexus. That

21 is their job is to say, "Well, there is no health and

22 -- we have looked at it. It will not adversely impact

23 health and safety. So if you want to do that, that's

24 fine. And here's the regulatory framework for doing

25 that."

1 So that is a necessary regulatory decision
2 to enable that function and assure that it's done
3 safely.
4 FACILITATOR CAMERON: Oh, sure. And I
5 think that that has -- if I'm not mischaracterizing
6 what Christopher said -- is Christopher recognized
7 that that type of -- that type of blending, if you
8 will, that goes on in various industries, that makes
9 sense to him. But it is this new initiative perhaps
10 that the NRC is going to take that he questions.
11 And I guess my question, based on what
12 Larry said about the lack of B and C, is the driver
13 for doing this. Is that a -- is that an NRC public
14 health and safety function?
15 MR. ANDERSON: Yes. Well, it is at least
16 a function of NRC's other mission associated with the
17 national interest in security. You will have to help
18 me with the precise wording, because NRC does have a
19 dual mission. It's just that that one isn't carried
20 forward as prominently on the webpage.
21 If we want, for instance, the peaceful
22 generation of nuclear-generated electricity in this
23 country, then NRC does have a whole series of
24 responsibilities for evaluating the ways in which we
25 propose to generate electricity, including all of the

1 ancillary services that go with that, and assure that
2 those can be carried out safely. And blending just
3 happens to be far down in that taxonomy, as you put
4 it, but, nevertheless, it is there as a question mark.
5 To go specifically to Christopher's
6 question, I think the near-term question that needs to
7 be answered along the way is: does the current branch
8 technical position allow this function to be carried
9 out? So I think it is very relevant that you raise
10 that wording and say, "Okay. What does this mean
11 today?"
12 But the fact that some document written a
13 long time ago says that shouldn't preclude also a
14 consideration of what should we be doing. And I think
15 that is the larger question that will have to be
16 answered in the policy paper.
17 You know, as an ancillary, if it is
18 determined that this should be allowed and can be done
19 safely -- by the way, our current regulations will
20 have to be changed to allow that -- then it will push
21 NRC into a very legitimate and very public process to
22 pursue that, including whether it is even changing
23 guidance. That would be done presumably through a
24 public comment process.
25 But in and of itself, I don't think the

1 question on the table for us is, does the current
2 branch technical position allow us to do this? I
3 think it is more to Larry's question of, you know,
4 what is that right thing to do for the agency going
5 forward?
6 I was just commenting that at the end of
7 the day the decision shouldn't be confused with other
8 decisions that will have to be made after that by
9 other --
10 FACILITATOR CAMERON: And I think you have
11 articulated that very well, and I guess the -- you
12 were referring to the comment that that is a
13 security --
14 MR. ANDERSON: Thank you.
15 FACILITATOR CAMERON: -- aspect. Let's go
16 to Marty, and then to Joe, and then hop over that way
17 to go to Miguel, and then to Christopher and --
18 MR. LETOURNEAU: I don't know if Tom meant
19 to or not, but he kind of threw out a challenge there
20 that I am going to try to rise to here. And my
21 message is going to be the thought process and the
22 activities that occur that would promote or take
23 advantage of blending are already there, and they are
24 part and parcel of the industry, and they are used
25 every day.

1 If you look at -- we'll talk about
2 generation, we'll talk about processing. But waste is
3 waste. Waste is lost money. It is lost product, it
4 is lost efficiency, and it also has a cost once it is
5 generated. It has to be managed.
6 Any plant manager worth their salt is
7 trying to minimize that cost. They are trying to
8 minimize the impact on their workers. It is part and
9 parcel to doing business. Any plant manager worth
10 their salt, whether it's a nuclear powerplant or a DOE
11 plant, or what have you, is looking at how to manage
12 that waste in the most beneficial way that they can
13 within the regulations.
14 They will make sure that they are not
15 mixing hazardous components with that radioactive
16 waste, so they don't end up with a mixed waste. If
17 they have 16 different sources at their plant, and one
18 of those generators is going to cause the whole thing
19 to be Class B or C, they will segregate that one piece
20 out, so that they don't have a larger portion of B and
21 C. Those decisions happen every day.
22 Waste processors go through the same
23 thought process every day. We have waste processors
24 who process waste that has transuranic material in it.
25 Only if it gets above 100 nanocuries per gram does it

1 become transuranic waste that has to go to the WIPP
2 facility in New Mexico. That processor is knowingly
3 looking at which batches have which concentrations
4 when they process them to ensure that when it comes
5 out the other end it is not 100 nanocuries per gram.
6 Those activities go on every day in every
7 plant with every waste processor knowingly making
8 decisions in how wastes are going to be mixed to
9 ensure that they get the optimum product. It is the
10 same thought process, and it is the same tool, that
11 goes to the next step and says "blending."
12 FACILITATOR CAMERON: Thank you. Thank
13 you, Marty.
14 Let's go to -- let's go to Joe, and then
15 jump down to Miguel, and then come back up to
16 Christopher and Mark. Joe?
17 MR. DiCAMILLO: Sure. Just a brief point
18 -- Tom touched on it -- with respect to answering
19 Brooke's second question, and that is when the waste
20 should be classified. And he touched on the point
21 that sometimes when you process the waste it is
22 unclear, until you are through with the process,
23 whether -- what classification the waste will be.
24 I think that may be just a question of
25 what your process is and who processes, and the

1 complexity of the process. I just -- from our
2 personal experience, we know before we process what
3 our waste will end up being.
4 But, again, it is a question of your own
5 operation, but I just want to be clear that I don't
6 necessarily think that the notion that, you know, we
7 shouldn't classify before we process is because we
8 don't know what the waste will be at the end of the
9 process. It is not necessarily I think a current
10 accurate statement across all of the processing. So I
11 just want to clarify that point.
12 FACILITATOR CAMERON: Okay. Thank you,
13 Joe. Miguel?
14 MR. AZAR: It was highlighted that, when
15 should we classify? Now, at some of our facilities we
16 have the ability to reuse the media, even though it
17 may be waste for a certain system, because, again, of
18 the plumbing, we are able to move it to another area
19 and exhaust it a little further, exhaust the media a
20 little further and be able to use it.
21 Now, we have in the past -- we have come
22 up with different ways of -- even though we take the
23 media out, we are able to rehandle it and move it in a
24 physical way into another you might say a vendor
25 system that we have onsite to also clean up the water.

1 So to say it is immediately once we, you might say,
2 valve out the system or lock it out, it is really
3 waste waste.
4 You can't -- you shouldn't be -- that
5 should not be the declaration, because at times you
6 may have the ability or you may have the -- you might
7 have the ability to transfer it. We have even looked
8 at times of trying to move it from one facility to
9 another, not call it "waste," call it "material," and
10 handle it. But you've also got to take ALARA into
11 consideration and to -- as part of the equation.
12 So it is not always -- you know, once you
13 are done with it, it is waste.
14 FACILITATOR CAMERON: And I think that
15 follows along nicely with what Marty was talking about
16 by trying to achieve those efficiencies.
17 Let's go to Christopher and then to Mark.
18 Christopher?
19 MR. THOMAS: Yes. I wanted to comment,
20 and it was just really -- I had to leave the room for
21 a moment, so somebody may have already covered this,
22 and I apologize if I'm going over it again.
23 But it was just interesting to hear the
24 difference between what Ralph said and what Larry
25 said, because what Ralph said, as I remember, just a

1 little while ago, is, you know, we shouldn't be making
2 rules and decisions based upon the current situation.
3 And yet what I heard Larry saying was the whole
4 reason we are visiting this is because of the current
5 situation, which has to do with not having access to B
6 and C disposal.
7 And so I think it is very important to
8 think about, you know, what gets included and what
9 doesn't get included in your, Ralph, kind of view of
10 what should be looked at. You know, do you look at,
11 you know, the doses incurred to workers and plants
12 that are inspecting these stored canisters of waste?
13 Do you look at, you know -- you know, waste that could
14 end up being stranded because, you know, B and C
15 disposal doesn't become viable?
16 So, anyway, I think -- I guess my point is
17 that I think actually this is being driven by the
18 current right now needs of an industry. And my hope
19 is that regulations that were allowing individual
20 operators a degree of flexibility don't get repurposed
21 to create this new downblending industry, which I
22 think if it -- that does happen it may require brand-
23 new regulations for that specific downblending
24 industry.
25 And my concern is that is happening only

1 because of this immediate issue we are perceiving
2 right now that is very temporary, potentially.
3 FACILITATOR CAMERON: Thank you. Thank
4 you, Christopher. Mark?
5 MR. YEAGER: These comments are from the
6 members of the E-5 Committee Conference of Radiation
7 Control Program Directors. For those of you who
8 aren't familiar with that organization, it is made up
9 of state regulators. The E-5 Committee consists of
10 members from Utah, Washington, South Carolina, Texas,
11 and we have been discussing this issue, as directed by
12 the Board. And I thought this would be an appropriate
13 time to present some of the comments we came to as a
14 result of the conference call that we had in October.
15 First, as a committee -- and, again, these
16 are just regulators with their own independent
17 opinions, we agree with the NRC that blending is an
18 acceptable waste processing regimen. Each licensee
19 that conducts this activity should be specifically
20 licensed to conduct the activity.
21 The waste form that was assumed during the
22 initial performance environmental assessment of a
23 disposal facility, performance assessment
24 environmental impact statement, it should be compared
25 to the newly-blended material. So if you change what

1 you are putting in the site, you might have to revisit
2 that environmental assessment. The differences in the
3 quantity or the physical form should be addressed and
4 compared to a change in dose to the receptor, whether
5 public or intruder.
6 Now, the characterization of a waste site
7 is based on the activity disposed of, the scenario
8 used, and on site meteorological and geographical
9 information. I don't think there is any -- and I
10 could be wrong -- I don't think there is anything that
11 has to do with the concentration of the activity.
12 Now, what happens to the waste before it
13 goes into the trench should be a function of ALARA for
14 the people using and packaging the material. For the
15 generators, the exposure is real. The site -- the
16 waste site intruder exposure is hypothetical at this
17 point.
18 Okay. And then, to conclude, we compiled
19 a list of example circumstances that we feel make
20 blending appropriate. And one -- I will list the ones
21 that we have -- to lower exposure for ALARA purposes
22 -- sorry, Ralph -- to workers or the public; to make
23 the material suitable for Department of Transportation
24 requirements; to lower the dose received at the
25 boundary of the waste site, whether during operation

1 or post-operation; to reduce workers dosed -- worker's
2 dose at generator waste processor or disposal site.
3 And then, the benefit gained should be clearly stated
4 by any applicant for blending.
5 And then, the list of examples where
6 blending is not appropriate, I think I mentioned both
7 of these earlier, and I think Diane mentioned the
8 other one, to reduce the waste class from greater than
9 Class C and to make material acceptable as exempt
10 material.
11 FACILITATOR CAMERON: Mark, thank you.
12 Thank you, Mark, and your colleagues for putting that
13 together.
14 Let's go to Diane, Tom, Ralph, and finish
15 up with David, and see if we have anybody in the
16 audience. We do want to take a break at 3:30. Diane?
17 MS. D'ARRIGO: Since it seems like people
18 are telling the NRC what they want to see in the
19 policy paper, or whatever is coming out of this, I
20 would try to rearticulate what I said before about
21 needing some kind of evaluation of this whole new
22 piece of the nuclear fuel chain or fuel cycle, which
23 is processing. No, it's not brand-new, but it is
24 becoming, you know, almost an alternative for disposal
25 in some ways, or, you know, it is a much -- it's got a

1 much bigger role than it has had in the past.

2 And the NRC's role, yes, it is to protect

3 the public health and safety, but Ralph said if we

4 want nuclear power, then NRC has responsibilities to

5 do all of this. Well, I don't think that it's the

6 NRC's role to decide -- I mean, theoretically --

7 whether or not we want nuclear power. What it is

8 supposed to do is protect the public health and

9 safety.

10 And it is not -- it has not traditionally

11 played a role of deciding whether or not to have

12 nuclear power, or whether or not to have the various

13 ancillary or supportive industries that go along with

14 it. But I am saying here that -- that we need to

15 decide, do we want to ship waste to be burned and

16 shredded and compacted and whatever other processes

17 are happening to stir it up in a pot? Do we want to

18 have that? Is that a responsible thing to do, so that

19 we meet some old A/B/C levels that it sounds like

20 might be changeable in the not-too-distant future

21 anyway?

22 So I think that the NRC, if they are going

23 to do a policy paper on this, needs to address not

24 just downblending but a larger realm of processing and

25 how much of it needs to be done or doesn't need to be

1 done.

2 FACILITATOR CAMERON: Thank you. Thank

3 you, Diane. And I think that's something the NRC

4 needs to think about in terms of what their role is.

5 Tom, and then Ralph and David, and a quick

6 comment from Bill.

7 MR. MAGETTE: Okay. Thanks, Chip.

8 Okay. I'm not sure how this has happened,

9 but once again Bill Dornsife has concluded his

10 comments with a statement with which I completely

11 wholeheartedly agree. That's agree. You said,

12 "Everybody was comfortable with the guidance," and I

13 couldn't agree more.

14 I got a letter from Larry Camper back in

15 August telling me that the interpretation I asked him

16 a question about was correct. I carry that letter

17 with me everywhere I go.

18 (Laughter.)

19 So I think the guidance is fine. Now,

20 there has been a suggestion that the notion of an

21 increased operational efficiency at a powerplant,

22 which might be achieved by something that happens at a

23 processor's facility offsite, is not appropriate or

24 shouldn't count as an operational efficiency.

25 I don't agree with that, and I would draw

1 an analogy -- and this goes to what Diane was just
2 talking about -- with the volume reduction policy
3 statement of 1981, which has received some passing
4 reference today, which lists a laundry list of waste
5 processing, waste minimization if you will, activities
6 which the NRC encouraged in the guise of occurring at
7 a powerplant.
8 Although today virtually all of those
9 technologies are in existence, it is rare in the
10 extreme that they happen at a powerplant. All of
11 those operational efficiencies, all of that reduction
12 in volume by three orders of magnitude over a 20-year
13 period, is achieved at offsite processors. So this
14 suggestion that somehow that doesn't count, I don't
15 think that makes any sense at all. And so I take
16 extreme exception to that.
17 As a nuclear services firm, one of the
18 things that we do is look to solve problems for our
19 customers. That's exactly what that industry did.
20 That is exactly what this proposes to do. It is
21 exactly what Studsvik is proposing to do with their
22 process for treating B/C waste.
23 Now, there are issues that have been taken
24 with that. You know, if we talk about commercial
25 models, there is a reattribution issue there. There

1 is an interim storage issue there. I don't take
2 exception with those issues. I don't oppose that.
3 Let them -- I don't see any technical health and
4 safety objection to what they propose to do.
5 And we've been silent on that. We've been
6 silent today, and in the other meetings that we have
7 had. You know, those are solutions that they are
8 taking to the marketplace. It is up to Mark and
9 Miguel and others in the industry to see what best
10 serves their needs.
11 That is offsite processing, too. That is
12 where waste processing occurs, and it has been driven
13 by the needs of the industry, and it has been done in
14 complete compliance with not only regulations, but the
15 guidance has been around for a long time. I mean, the
16 branch technical position on concentration averaging
17 wouldn't even exist if it weren't for some sort of
18 blending or concentration averaging. That's the only
19 reason that document was ever written in the first
20 place.
21 So I think that there is a very clear
22 connection to an operational efficiency. Lisa
23 articulated it very well. The suggestion that it only
24 counts if it's onsite to me makes no sense.
25 FACILITATOR CAMERON: Thanks, Tom. It

1 should not be just -- the offsite reprocessing is just
2 an extension of this operational efficiency in terms
3 of what happens at a facility is your point. Okay.
4 Ralph, and then David, and we're going to
5 finish up with Bill and take a break.
6 MR. ANDERSON: A couple of quick comments.
7 Christopher had raised the notion that Larry had
8 described for why we are dealing with this issue now.
9 And the notion I had made about not making decisions
10 based solely on the conditions that exist now, I think
11 those two perspectives are very complementary.
12 Larry was talking to, why now? We do need
13 to address this issue now. I fully agree with that.
14 I was just suggesting that the answer that comes out
15 of the other end shouldn't be driven solely by the
16 conditions that exist today. We should make expedient
17 decisions.
18 It should be done in a much broader policy
19 perspective of, how is NRC generically going to deal
20 with new proposals for increased flexibility and
21 increased options in managing low-level waste? Not
22 solely to say, "Well, our decisions should be entirely
23 based on what South Carolina does or doesn't do."
24 That is where I was trying to go with that.
25 It also should be done in the perspective

1 of what NRC's long-term plans are with its regulatory
2 framework, because I worry that we will make some
3 expedient decisions along the way that then are going
4 to be overtaken by much larger processes such as the
5 wholesale rulemaking to 10 CFR Part 61.
6 So I am just saying that whatever goes
7 forward on this issue that should be decided in the
8 near term, that that decision ought to take into
9 account what NRC's long-range plans are. And I think
10 that ought to be part of the policy paper, because
11 there is always -- already a policy paper on the issue
12 of proposed rulemaking. So it is just context.
13 But I wasn't meaning to imply we shouldn't
14 be acting on this issue now; we should.
15 One other just minor point is that I
16 completely agree with Diane that NRC's role is not to
17 decide whether we should have nuclear power. NRC's
18 obligation, however, is to assure that to the extent
19 that we use nuclear power that it is done safely.
20 That's all I'm saying is they don't the option of
21 saying, "Well, I don't really want to mess with this
22 regulatory stuff." That is their job. So that's all
23 I was trying to get at.
24 FACILITATOR CAMERON: Okay. Thanks,
25 Ralph. David?

1 MR. JAMES: Tom has already taken most of
2 my thunder, but I just wanted to make the point that
3 the process industry really evolved out of 10 CFR 61.
4 There wasn't much of it around before 1981 or '82.
5 It was driven by the requirements for volume
6 reduction, and it was also driven by the
7 classification system itself of people meeting it.
8 The essence of the BTP, in my humble
9 reading of it, without reading words into the NRC's
10 positions, but it really was to provide guidance for
11 concentration averaging for the determination waste
12 class. A basic condition for applicability of the BTP
13 is that you have wastes that are of various
14 classifications that are going to be mixed.
15 So this -- and usually the objective of
16 the mixing calculation is to calculate the lowest
17 class. If you wanted to take the highest class, then
18 you wouldn't need the BTP or the application of that
19 guidance.
20 I think just one more point was to
21 separate the issues of classification from
22 characterization. The characterization always has to
23 be done, and then it's used as a basis for
24 classification later. Whoever is taking the waste
25 that intermediate step will get that characterization

1 information. That was basically all I had to say.

2 FACILITATOR CAMERON: Thank you. Thank

3 you, David.

4 And final comment on this here from Bill,

5 and then I just want to quickly check in with the

6 audience, phones.

7 MR. DORNSIFE: As a practical

8 consideration in regards to when the waste needs to be

9 classified, from a practical standpoint most, if not

10 all, of the waste that goes to a processing facility

11 right now, even though it is not required, is

12 classified as A, B, or C, or greater than C, because

13 they use the 540/541 manifest, and they just fill it

14 out, so it gets classified. And the processing

15 facility does know when it comes in what the class is.

16 And in Texas, even though Texas rules

17 don't require classifying it when you come to a

18 processing facility, we have to know the class,

19 because we have regulations that say, "If you treat or

20 process it, including RCRA treatment, and you change

21 its class, you lower its class, it has to be

22 classified as what it came in."

23 So, you know, you have a state out there

24 that, you know, indeed is preventing blending. And I

25 know we will get into this issue under compatibility

1 and things, but, you know, how can that -- how can
2 that be? I mean, it is a dilemma from our standpoint.
3 We can't compete equally in this market, because you
4 have -- there is an agreement state that you all
5 control, supposedly, that doesn't allow it.
6 FACILITATOR CAMERON: Okay. And as we
7 said, we'll get a bunch of that -- issues, regulatory
8 considerations.
9 Anybody on here have anything to say on
10 just practical aspects?
11 (No response.)
12 Anybody on the phone have anything to
13 offer on this topic that we just completed?
14 (No response.)
15 Okay. Thank you. And if you -- we're
16 going to take a break now here in Rockville. And if I
17 could just ask you, all of you on the phones, to just
18 stay on for a minute. I needed to ask you a question
19 to try to figure out how many people are out there if
20 we possibly can.
21 But we are going to take a break here,
22 come back at 10 minutes to 4:00. That's about 17
23 minutes. Ten to 4:00.
24 (Whereupon, the proceedings in the foregoing matter
25 went off the record at 3:34 p.m. and went

1 back on the record at 3:55 p.m.)

2 FACILITATOR CAMERON: We have a bunch of

3 parking lot issues that all -- we were going to put in

4 regulatory considerations. Maurice is going to talk

5 to us in a minute. Why the hurry? was asked. Right

6 now, I think we have had some discussion of that.

7 We heard final decision on all of this

8 should remain with the state. Where is the broad

9 analysis of the issues going to be? Okay. Of all of

10 the issues connected to this? How is that going to

11 occur? So we are going to get into that with Maurice.

12 But there was one comment, one assurance I

13 think, that Roy Brown wanted to check with the NRC

14 staff on that we should have pulled it into the last

15 discussion. Roy, do you want to just state that for

16 us, and we'll see if we can get some comment from NRC

17 staff.

18 MR. BROWN: Sure. When Christianne made

19 the comment this morning she was talking about when

20 you classify waste as waste, and the comment was made

21 by Christianne, and I think Larry maybe echoed it,

22 too, saying that this material is not waste until you

23 get ready to ship it out as waste. No?

24 MS. RIDGE: I'm sorry. I believe what I

25 was trying to convey -- well, I'm sure what I was

1 trying to convey --

2 (Laughter.)

3 -- and I believe that what I said was that

4 not that it's not waste at that point, but that we

5 haven't decided if it's -- or we haven't classified it

6 as A, B, or C. So I wasn't saying that it's not waste

7 necessarily, just that the classification system, as

8 far as A, B, or C, hadn't been applied yet.

9 MR. BROWN: Okay. Well, the reason I

10 raised it again, because the question came up a little

11 bit later then, should we move back in time when you

12 classify it as waste and when you apply the waste

13 classifications to that material? And I was -- I

14 thought Chip would put it on as a parking lot issue

15 and we would address it later. Then, I saw him at --

16 I talked to him at break, and he said he thought we

17 had resolved it. Is this still an open issue that

18 needs to be discussed, or are we comfortable with when

19 you determine when this material is waste?

20 FACILITATOR CAMERON: I thought we talked

21 about it in terms of, when should it be -- should it

22 be classified "upstream" I think was the term. Roy,

23 you may want to -- do you want to tell --

24 MR. BROWN: Yes.

25 FACILITATOR CAMERON: -- people what your

1 concern is, and then maybe we can focus on it.

2 FACILITATOR CAMERON: Yes. One more

3 thought and one more concern is that if you back up in

4 time when you have to determine -- when you have to

5 assign this material a waste classification, it could

6 have serious implications for the biomedical industry

7 and the radiopharmaceutical industry, because we do a

8 lot of processing, we do a lot of waste collection

9 along the way.

10 And if you say, okay, it's -- now it is

11 waste material when it no longer has a useful benefit,

12 that would have serious implications rather than it is

13 waste when you go to ship it out the door. So if you

14 have any thought of backing up in time when it is

15 declared waste material, I think that would have quite

16 an impact.

17 FACILITATOR CAMERON: And, Jim -- let me

18 just ask Jim Kennedy -- he knows where Roy is coming

19 from on this, and if we can provide him with any --

20 MR. KENNEDY: I'm not sure, but let me try

21 this. We are not reexamining the requirements for

22 when you determine a material is waste. That is in

23 Part 20. That is something that is left to licensees.

24 What we are asking is -- and this is one of the

25 questions that was in Chairman Jaczko's memo -- when

1 is it appropriate to classify waste?

2 That is, are there any advantages or

3 disadvantages to classifying it upstream before it is

4 ready for disposal? It is only required to be

5 classified now when it is ready for disposal, but

6 other folks have said, "Well, you should classify it

7 earlier," for example. That's the question we're

8 asking -- classification of the waste prior to

9 shipping for disposal, not when waste is determined to

10 be waste.

11 MR. BROWN: Well, I think in terms of

12 materials facilities, I think what may -- that would

13 have a detrimental effect to our ability to work with

14 that material and to process it, if you backed up in

15 time when it is declared as waste.

16 MR. KENNEDY: Right. And we are not

17 considering backing up that.

18 MR. BROWN: Okay. But then I guess this

19 issue is --

20 FACILITATOR CAMERON: But I think the

21 point is well taken is -- Roy called it "unintended

22 consequences" before, and I'm glad he put that concern

23 on the table, because we can try to avoid those. It's

24 not just for radiopharmaceutical --

25 MR. BROWN: Sure. All of the materials

1 facilities. I'm comfortable with that explanation,
2 then. Thank you.
3 MS. RIDGE: Can I just ask Roy just a
4 quick clarification? Roy, do you have any additional
5 concerns about talking about when waste is called A,
6 B, or C, or is your concern only about when it is
7 called waste or not called waste?
8 MR. BROWN: Well, for example, I was
9 talking to Diane about this at the break. For
10 materials facilities it is quite common practice to
11 mix waste -- I'm sorry, strike that -- to blend waste
12 that have severely different concentrations. For
13 example, we are talking once again about low-level,
14 you know, Class A waste where you have, you know,
15 booties or shoe covers or gloves that are
16 significantly contaminated being mixed with materials
17 that are just barely contaminated.
18 Right now there is no thought given to not
19 mixing -- not blending that waste. That is blended
20 every day. And if you were to have to go back and
21 separate out a concentration of waste that is 10 times
22 higher, even though it is Class A waste, that would
23 have severe radiation exposure implications.
24 FACILITATOR CAMERON: Okay.
25 MR. BROWN: So that's why, you know,

1 discussions of 10 times the concentrations really
2 worry us.
3 FACILITATOR CAMERON: Thank you. Maurice,
4 are you ready to tee up regulatory considerations for
5 us? Thank you.
6 MR. HEATH: All right. Thank you, Chip.
7 I'm going to talk about regulatory considerations.
8 Go to the next slide, please.
9 Now, the views we gather from this meeting
10 we will consider on our path forward. Questions that
11 we would like to consider for the path forward
12 include, how should NRC document its blending policy
13 or position, either draft a new one or maintain the
14 existing? Guidance, either current guidance or
15 revised guidance? Policy statement or rulemaking?
16 What are the pros and cons of each?
17 A rulemaking would require that a NEPA
18 evaluation be conducted. NRC is budgeting resources
19 to initiate a long-term rulemaking to advise the waste
20 classification system. It could be beneficial to
21 address blending as part of the rulemaking rather than
22 in a separate effort. Other waste classification
23 systems that we will consider do not have Class A, B,
24 C, or greater than Class C, but instead use broader
25 classes.

1 Thus, the blending contemplated under
2 today's waste classification system may not affect the
3 class of waste under a new system. It could also be
4 more efficient to address blending as part of this
5 larger rulemaking.
6 Another regulatory consideration is
7 related to compatibility. If we were to promulgate a
8 rulemaking on blending, an important issue would be
9 the compatibility designation of the rule and how
10 closely agreement state regulations match NRC
11 regulations on blending.
12 The BTP needs to be clarified,
13 irrespective of the position we end up with or the
14 mechanism we use to implement it.
15 Next slide, please.
16 Another regulatory consideration is the
17 NRC's volume reduction policy of 1981, as we mentioned
18 earlier. And the question is: is it time to revisit
19 the policy statement, since generators have been so
20 successful in reducing waste volumes since that time?
21 For example, pressurized water reactors
22 have reduced their operational waste by a factor of 25
23 from the period of 1980 to 2000. The volume reduction
24 policy statement was developed to address a crisis and
25 disposal capacity at that particular time. Given the

1 success in reducing volumes, should the volume
2 reduction policy statement acknowledge other factors
3 such as risk-informed performance-based regulation
4 that would affect a generator's decision on how to
5 manage waste?
6 Attribution is the identification of a
7 generator of low-level waste during processing and
8 disposal. It is possible that blending could
9 eliminate the identity of the original generator.
10 What implications might there be if that happened?
11 Finally, another regulatory consideration
12 is that the Commission has a risk-informed
13 performance-based policy for regulating in general.
14 Is blending a risk-informed performance-based approach
15 to managing waste?
16 Next slide, please.
17 Now, this slide -- these are the questions
18 from our Federal Register notice, and I'll read them
19 in case you can't see them. How should NRC implement
20 a position on blending of low-level waste, i.e.
21 rulemaking, guidance, policy statement? If a rule
22 were to be promulgated, what compatibility category
23 should it be? How strictly must agreement states
24 follow in any NRC rule?
25 Given that the agreement states are not

1 required to adopt NRC's guidance on blending, how are
2 different states addressing this issue? What are the
3 advantages and disadvantages of these approaches?
4 What oversight might be needed to ensure that blending
5 is performed appropriately?
6 If blended waste cannot be attributed to
7 the original generator of the waste, what issue does
8 this raise? What would be the risk-informed
9 performance-based approach to addressing blending?
10 The last question -- NRC is budgeting resources to
11 initiate a long-term rulemaking to revise the waste
12 classification system. How might alternative waste
13 classification systems be affected by blending?
14 FACILITATOR CAMERON: Thank you very much,
15 Maurice. Good questions.
16 One clarifying question for you in terms
17 of teeing this up for everybody. One of the
18 regulatory considerations or regulatory options is
19 just maintain the status quo, do nothing. Is that --
20 MR. HEATH: Yes, that's correct.
21 FACILITATOR CAMERON: Okay. All right.
22 Where do we want to start on this? Let's -- Diane, do
23 you have -- do you want to start us off? Do you have
24 -- okay. We'll go to Diane, and then Joe. Diane?
25 MS. D'ARRIGO: So we will start with the

1 last question. NRC is budgeting resources to initiate
2 a long-term rulemaking to revise the waste
3 classification system. And having been working on so-
4 called low-level waste since 1978 or '79, and I would
5 posit that the reason that you don't have new nuclear
6 waste sites right now is that you have got long-
7 lasting waste that is going into unlined trenches with
8 100 years of institutional control, and people won't
9 accept it.
10 The Sierra Club developed a policy back in
11 -- I don't know if it -- I think it was around mid-
12 '80s, which is still part of their policy, which is
13 that anything hazardous longer than the institutional
14 control period of the facility should not be included
15 in the waste stream.
16 So if you're thinking about revising the
17 classifications, you need to have not just this
18 concentration thing, but if you've got long-lasting
19 materials, understand that the public is not going to
20 welcome even the smallest concentrations of plutonium
21 in these sites.
22 So, anyway, with that experience, and now
23 looking at what the new classifications will be, I
24 think there ought to be some amount of public interest
25 funding allowed, because -- no, I'm quite serious --

1 that if you want participation from people who are
2 potentially affected by these sites we need to be able
3 to do the kinds of analysis that -- you know, and
4 participate head to head on these issues, and you are
5 going to need to have legal -- we need legal advice,
6 we need technical advice, and we don't have anybody
7 coming from NRC retiring, helping the public interest
8 community. They are all going into working for the
9 industry.
10 So I am putting forth, as you are
11 proposing new rulemaking, especially on this issue,
12 that there ought to be some kind of -- it wouldn't
13 necessarily be intervenor funding -- I would advocate
14 that for your licensing facilities -- but for
15 rulemakings that, if you want real participation from
16 people, that you ought to consider that in your
17 process.
18 FACILITATOR CAMERON: Okay. Thank you.
19 Thank you, Diane.
20 Does anybody else have a -- since we're on
21 that bullet, does anybody have anything else to say in
22 regard to the blending issue in terms of how that fits
23 in with the long-term rulemaking to change
24 classification? Is that where blending should be
25 addressed? Is it too far out in the future? Do we --

1 does NRC need to do something on blending earlier than
2 that? I'm just trying to, you know, make this a
3 little bit systematic here. Bill, and then we'll go
4 to -- we'll go to Don. Oh, go ahead. Go ahead, Don.
5 MR. SAFER: What does "long term" mean? I
6 mean, what are you -- in NRC speak.
7 FACILITATOR CAMERON: Glacial.
8 (Laughter.)
9 Yes, Larry. Larry, go ahead.
10 MR. CAMPER: You keep having these good
11 questions, Don. That's great.
12 The Commission in an SRM charged the staff
13 to budget for a rulemaking to risk-inform Part 61. We
14 assume that that direction includes going beyond just
15 budgeting for it, but in fact the Commission will want
16 the staff to continue to undertake a revision to risk-
17 inform Part 61.
18 FY11 -- we are currently in FY10. FY11 is
19 our current plan to start that process, to budget for
20 it, and to start that process there is a technical
21 basis for the rulemaking, and then you move into the
22 actual rulemaking effort itself.
23 I was having a conversation with Joe
24 during the break. When we talk about revising
25 Part 61, the charge from the Commission was to risk-

1 inform the waste classification scheme in Part 61,
2 61.55. My view, and this is just my personal view, is
3 that when you listen to the type of dialogue that we
4 are having today, and that we have had in other
5 forums, when we move into opening up Part 61 to risk-
6 inform the waste classification scheme, it is
7 difficult, at least for me, to imagine that the rule
8 will be contained with only opening up 61.55. I would
9 envision that Part 61 will be on the table at large.
10 I think Part 61 revision will be a very
11 complicated rulemaking. My guess is it would probably
12 take four to five years and will involve half a dozen
13 public meetings held around the United States,
14 probably substantial interaction between the staff and
15 the Commission along the way.
16 And so the simple answer to your question,
17 Don, having said all of that, would be FY11, going on
18 for probably four to five years.
19 FACILITATOR CAMERON: Thanks. And Bill.
20 Thank you, Larry.
21 MR. DORNSIFE: Well, first of all, I guess
22 not knowing what the -- what the framework is going to
23 be for a new waste classification system, it is kind
24 of hard to answer this question. For example, if it
25 is just a redo of the numbers, it probably doesn't

1 matter.

2 If it's a -- moving toward a DOE site-
3 specific analysis type of a system, then it matters
4 greatly, because then you have to look at the site-
5 specific characteristics, the waste you are disposing
6 of, and develop concentration limits based on -- based
7 on that particular site.

8 So I guess not knowing what this new --
9 what the context of this new waste classification
10 system is going to be, it is -- I can't see how you
11 can answer at this point.

12 FACILITATOR CAMERON: Okay. Thank you.
13 Joe, on long term, or you had another point? And,
14 Mark, long term?

15 MR. YEAGER: The first one.

16 FACILITATOR CAMERON: No, we started from
17 the bottom.

18 MR. YEAGER: The E-5 comment is -- I'm
19 sorry. Okay. 10 CFR 61, waste class, uses only
20 selected isotopes. Consideration should be given to
21 expanding the waste class to include all
22 radionuclides. That's our one comment for that.

23 FACILITATOR CAMERON: Okay. And that
24 would be, as Larry sort of implied, it is going to be
25 a sweeping rulemaking.

1 Anybody else on this long -- so-called
2 long-term rulemaking? Oh, go ahead, Dave. And,
3 Chris, do you have something, too? We'll go to David
4 and then Christopher. Go ahead, Dave.
5 MR. JAMES: I just have one -- the one
6 observation that the methods of disposal that we are
7 practicing right now are totally safe, if not
8 ultraconservative. And that acting on the BTP
9 rulemaking now is a relatively simple task in contrast
10 to the other one. And there really isn't a strong
11 reason to put it off, as near as I can see.
12 FACILITATOR CAMERON: Okay. So if the NRC
13 is going to do something on this issue, it shouldn't
14 wait, doesn't need to wait until they do the long-term
15 classification.
16 MR. JAMES: Right.
17 FACILITATOR CAMERON: Okay. Christopher,
18 and then we'll go to Lisa.
19 MR. THOMAS: Yes. First, I just wanted to
20 clarify something I said earlier. I think that, you
21 know, waste going to a particular site should meet the
22 performance objectives, and that should be
23 demonstrated. However, I do not advocate replacing
24 the classification system with a purely performance-
25 based system.

1 And the reason for that is because these
2 performance assessments are extremely complicated, and
3 a lot of times the results are driven by the inputs.
4 And the only people who really know all of the inputs
5 well are the licensee and the person -- and the
6 company they contract to come up with the performance
7 assessment.
8 So from a public interest perspective it
9 is -- it is kind of like this big black box, whereas a
10 table with values in it is much more straightforward.
11 So I think that the classification system is good,
12 because it provides these bright white lines that
13 should be dividing, you know, what is appropriate for
14 where in what circumstances.
15 And then, within those -- those demarcated
16 zones, between the bright lines, the performance
17 assessment is important to ensure that nothing within
18 that Class A designation, let's say, would result in
19 performance objectives not being met. So I think that
20 there is a role for both.
21 And in terms of the -- you know, this
22 issue of downblending, I think -- I mean, I don't have
23 the full picture of it. These are big issues. They
24 are not easy to address. But I think that the idea of
25 blending creates new regulatory issues that should be

1 looked at, you know, apart from the classification
2 system.
3 I mean, to me, if you know you are
4 starting out with something that is more concentrated
5 than what you would normally allow, then you might
6 need new regulatory controls to make sure that none of
7 that more concentrated stuff is -- that you are
8 putting into the process is coming out in that still-
9 concentrated form.
10 So I think those issues do need to be
11 addressed, if the NRC is going to find that its
12 current guidance and rules allow for large-scale
13 commercial blending as EnergySolutions has proposed.
14 And I think that is different from the classification
15 system.
16 FACILITATOR CAMERON: Okay. Thank you.
17 Lisa?
18 MS. EDWARDS: Two-part answer. The first
19 is, I do think it's important to look at the long-term
20 rulemaking. But instead of wondering if we should
21 wait on blending, because we could take care of it
22 during the rulemaking, I would propose that
23 clarification of blending would help inform the
24 rulemaking process, which is on a much longer
25 timeline. So any clarification you provided now may

1 help you later when you are doing the rulemaking.

2 The second point would be that the

3 rulemaking, because it is so long term, I don't think

4 is timely enough. And because of that, I think some

5 clarification, probably in the form of guidance, would

6 be appropriate on blending, because there are folks

7 out there that every day classify waste and ship it

8 and make decisions about that.

9 And separate from being a commercial

10 interest, this is the job that they do at a facility.

11 I know these people personally, and you can -- I

12 would describe them as an extremely conscientious

13 group of people. And it may surprise you that I would

14 characterize them as thinking of themselves as

15 environmental guardians. They want to do what is

16 right.

17 And the people in those facilities are

18 hearing a proposed processing option, which has

19 potentially benefits to the facility, because it

20 allows access to a disposal pathway. They are not

21 ready to proceed on that without clarification.

22 And I think that the reason that they are

23 -- I shouldn't say none of them are ready to proceed,

24 but there is at least a group of people who aren't

25 ready to proceed without that clarification. They

1 want to know that that interpretation is considered
2 appropriate by the NRC and is bounded by the existing
3 EISs for the disposal facilities, and for the -- and,
4 you know, under the -- and is consistent with
5 licensing requirements for processing facilities,
6 because their job is to do this right, not just for
7 their company but for their community and for their
8 families.
9 And for that reason, I would propose that
10 a policy or a guidance enhancing the public and the
11 generator's understanding of the NRC's position on
12 this would help them make those decisions in their
13 everyday lives.
14 FACILITATOR CAMERON: And you wouldn't
15 think that the status quo would not -- maintaining the
16 status quo would not provide that certainty that
17 people need at this point.
18 MS. EDWARDS: When you say "status quo,"
19 do you mean --
20 FACILITATOR CAMERON: I mean doing -- if
21 NRC did absolutely nothing, if they went up to the
22 Commission in the policy paper and said, "We think
23 that the existing regulatory framework, such as it is,
24 as you heard from Patty this morning, we think that is
25 satisfactory at this point."

1 MS. EDWARDS: I think that it would serve
2 the industry better if there was some additional --
3 FACILITATOR CAMERON: Okay.
4 MS. EDWARDS: -- guidance. And the reason
5 is is some letters have been issued recently, and it
6 is all fine and dandy to have letters from the NRC to
7 individual processors or entities to refer to. But
8 people can put different spins on those and have
9 different interpretations of them.
10 And since we know that there are some
11 questions, people in this very room with us are quite
12 earnest in their opposing interpretations of
13 information that exists, coalescing all of that
14 information together in one clear statement, which
15 doesn't have to be new policy or really a change in
16 position, just a clarification.
17 FACILITATOR CAMERON: Just a
18 clarification.
19 MS. EDWARDS: I think would be helpful.
20 FACILITATOR CAMERON: All right. Thank
21 you. And Lisa has taken us up to the first bullet,
22 but I want to go to Joe now.
23 MR. DiCAMILLO: I want to go to the first
24 bullet.
25 FACILITATOR CAMERON: Okay, good. We're

1 on first bullet.

2 MR. DiCAMILLO: Now that we're on the

3 first bullet, first of all, quickly, I would suggest

4 that maintaining the status quo is an absolutely

5 terrible idea, because if the status quo were working

6 I don't think any of us would be here. I mean,

7 clearly, there is confusion, clearly -- I mean, the

8 BTP is murky at best with respect to how you can

9 clearly understand it.

10 I think that there has to be some -- the

11 status quo isn't the way to go, in my opinion.

12 I want to touch on a couple of things that

13 -- that Ralph actually raised when he was here, and

14 those were state sovereignty issues, local concerns,

15 particularly for the communities that have disposal

16 sites and processing facilities.

17 I think that NRC has to be mindful of how

18 they are going to move forward, because if you make a

19 rulemaking what you are essentially saying is that --

20 and we can get to compatibility issues later, but on

21 the top level, if you decide to go to rulemaking on

22 this issue, you are essentially going to foreclose the

23 states, because you will -- they are going to follow

24 the rulemaking from an agreement point of view,

25 agreement state point of view, in my view anyway,

1 irrespective of what level of compatibility you make
2 it, unless you specifically say that we are going to
3 issue a rulemaking and we are going to make it, you
4 know, the lowest possible level of compatibility.
5 And I think you also, in some ways,
6 disenfranchise -- if it's important to you to get
7 local community support, that you would disenfranchise
8 the local communities by doing a rulemaking. So my
9 viewpoint is that it really needs to be either a
10 clarification of guidance, a reissuance of guidance,
11 whether it is a reissuance of the BTP or some other
12 way of clarifying your position on large-scale
13 blending I think is really the way that I see it is
14 the best way.
15 FACILITATOR CAMERON: And, Joe, let me ask
16 you a clarification on that. Are you saying that a
17 rulemaking would foreclose state and local options,
18 because you're assuming that that rulemaking would
19 establish some type of national uniformity rather than
20 giving the states the option to do it? Or is there
21 something --
22 MR. DiCAMILLO: I think so --
23 FACILITATOR CAMERON: -- about the
24 rulemaking, apart from what the compatibility level
25 is, that would have some deleterious effect on what

1 the state would want to do?

2 MR. DiCAMILLO: Well, I'm not sure I would

3 use that word, but I guess that, irrespective of the

4 compatibility issue, I would think that states would

5 be more likely to implement a policy within their

6 jurisdiction, within their agreement state, that would

7 be consistent with NRC rules, irrespective of whether

8 or not there was a compatibility issue.

9 Now, I mean, there may be political

10 drivers that may change that landscape, but I think at

11 the base level I think that is -- in my view, that is

12 the case.

13 FACILITATOR CAMERON: Okay, good. That's

14 a good clarification, that there might be something

15 about the rulemaking process itself that could affect

16 this. Okay.

17 Let me ask Mark while we're here, and

18 we'll go to Diane and Tom, but, Mark, in terms of how

19 to proceed on this, the first bullet, what did the E-5

20 Committee have to offer?

21 MR. YEAGER: We kind of agree with Joe.

22 We do think that the BTP needs to be reissued, just

23 needs to be updated to be more current with this --

24 with its current use and this proposed use -- well,

25 enhanced use of blending, because, you know, we do

1 blending currently, and this is just more of a
2 transparent process here where we are trying to -- NRC
3 is trying to get everybody engaged in this issue.
4 So definitely at a minimum the E-5
5 believes that the BTP needs to be reissued and
6 revised.
7 FACILITATOR CAMERON: Okay. Just to
8 reflect the current reality.
9 MR. YEAGER: And we do kind of lean
10 towards guidance as opposed to a rulemaking on that,
11 just from the standpoint of having some flexibility as
12 individual states.
13 Now, Utah has a different approach. They
14 -- I am just going to give this to you to add to the
15 comments later, but --
16 FACILITATOR CAMERON: Okay.
17 MR. YEAGER: -- basically a lot of the
18 things that we are discussing here, instead of
19 guidance, I believe Utah as a whole would like to see
20 things more from a rulemaking standpoint.
21 FACILITATOR CAMERON: Okay. And what
22 we'll do is we'll -- we'll attach that. We'll make a
23 copy and attach it to the transcript.
24 MR. YEAGER: Okay. I'll give it to Tracy
25 and --

1 FACILITATOR CAMERON: Okay. Thank you.
2 MR. YEAGER: Okay.
3 FACILITATOR CAMERON: Let's go to Tom, and
4 then to Diane. Tom?
5 MR. MAGETTE: I think guidance needs to be
6 clarified. The no-action alternative would seem not
7 to be realistic in this case, for all of the reasons
8 that have already been given.
9 Having said that, I think the letters that
10 Lisa referred to in fact do answer the question, and
11 so I would suggest that there is an iterative approach
12 here with maybe one more step than other commenters
13 have said. I think reissuing and clarifying the BTP
14 is a sound and necessary step, but I don't think
15 that's the first step.
16 I think the first step is just to collect
17 the guidance that came in those three letters into an
18 RIS. They were specifically aimed at this question.
19 They can be more clearly focused in answering this
20 question. They can address the concern that Lisa
21 raised, whereby the question was answered but still
22 left in regulatory documentation, if you will, which
23 is not necessarily uniformly adopted across the
24 industry or there is still some uncertainty because of
25 how the NRC answered the question.

1 So I think guidance is appropriate. I
2 think the specific question can be dealt with at the
3 most simple level of guidance. I think then you have
4 a step to update the BTP, because the BTP goes a lot
5 further than this. I think everybody knows that.
6 We've talked about that quite a bit this morning.
7 Mathematical averaging may be an issue here with
8 physical mixing and blending, but it is in a very
9 minor sort of way. It's a lot different from
10 mathematical averaging across a package where you
11 clearly have hotspots.
12 So there are things in the BTP that go
13 well beyond what we are looking at here. It I think
14 is probably safe to say not the clearest document
15 written by the NRC, and so could be updated to be
16 clearer. And then, I think the third step, just to go
17 back to what others have said about the last bullet, I
18 think that the Part 61 should be risk-informed.
19 I think it needs also to be modernized,
20 because its basis, as has been pointed out, has also
21 changed. So I think risk-informing that provides a
22 much more uniform, rational approach. I agree that it
23 won't just be 61.55. Part 61 probably won't even
24 bound what has to be changed if you risk-inform that
25 approach, start getting into some of the dosimetry

1 questions that Christianne raised.

2 So there are other issues that will come

3 into that, but I do think that that also is a sound

4 approach, and it gives us all something to look

5 forward to in FY11, '12, '13, '14, '15, and I would

6 suggest beyond, Larry.

7 FACILITATOR CAMERON: And, Tom, for the

8 benefits of the uninitiated, RIS is?

9 MR. MAGETTE: Regulatory issue summary.

10 It's just a simple guidance document.

11 FACILITATOR CAMERON: All right. Thank

12 you very much.

13 Let's go to Diane, and then I want to hear

14 what Gregory Suber, who is the Chief of the Low-Level

15 Waste Branch, has to offer on this. Diane?

16 MS. D'ARRIGO: I am glad that we are

17 having a discussion over this blending thing, because

18 a lot of the processes that have been going on with

19 nuclear waste have been pretty much under the radar.

20 I think that there should have been some kind of

21 process when in the United States we started burning

22 and pyroprocessing and otherwise heat-treating

23 radioactive materials.

24 The fact that Studsvik has been burning

25 radioactive waste since '99, and since -- and that

1 EnergySolutions, previously Duratek, has two
2 incinerators at Oak Ridge, and that DSSI has got heat
3 processes, and Impact is proposing another incinerator
4 in Tennessee, my basic biology background, my basic
5 chemistry background, my understanding is that heat
6 does not destroy. All you're doing -- the
7 radioactivity is -- all you're doing is changing the
8 form of it.
9 And I do not believe that Tennessee, where
10 all of these practices are taking place, is at all
11 open about what the routine releases are from these
12 facilities. The public is not informed. It is very
13 difficult to understand it.
14 And, I mean, there is also the DOE TSCA
15 incinerator. We are talking about seven nuclear
16 incinerators and heat treaters in that state, and
17 there has never been any, to my knowledge, national
18 meeting or discussion of it. And it is a whole
19 process that many of our organizations would fully
20 oppose.
21 I mean, the goal is to isolate, not
22 disperse. And so, you know, we can argue over how
23 much is getting out, but we haven't had that argument.
24 We haven't had that discussion. So here on the table
25 we are talking about mixing and blending, but we have

1 also got, by all of these same companies and others,
2 other processes that could be even more
3 environmentally devastating. And I, frankly, don't
4 trust the risk assessors who have assessed that there
5 is no risk from those processes.
6 And so I guess, you know, fitting into the
7 questions here, more than blending needs to be
8 assessed. And, you know, it is taking a very narrow,
9 specific, one of many different practices that are
10 going on. So that is one point.
11 And then, since we have been talking about
12 risk-informing, I think that Christopher from HEAL
13 Utah put it quite well, that risk-informing -- it is a
14 very insider game. It is being played between the
15 generators and the processors and, to some extent, the
16 regulators.
17 And it -- risk-informing is not going to
18 have any useful purpose if the people that are
19 evaluating it don't have -- don't believe that
20 radiation exposures and routine releases have
21 significant health effects. And so we are getting
22 back down to, who decides what the risks are? And
23 throughout the regulations the risk of radiation
24 exposure is routinely dismissed. It is safe. It's
25 safe, it's safe.

1 So we are not ever really talking about --
2 we are not able to really make a comparison. We are
3 not able to find a way that is the least exposure or
4 that minimizes public exposure and releases or has a
5 larger protection for the public from the whole
6 system, but instead we are piecemeal dismissing each
7 piece of the fuel chain as being insignificant.
8 FACILITATOR CAMERON: Thank you.
9 MS. D'ARRIGO: So both of those things are
10 inputs to what is going to happen, you know, if you
11 are going to change guidance, change rules, change
12 regulations. These are the same concerns that we have
13 had in the past, and we will continue to have them in
14 the future. And it might be refreshing to actually
15 address some of them.
16 FACILITATOR CAMERON: Thank you. Thank
17 you, Diane.
18 And I have a question for all of you
19 similar to that based on something that Christopher
20 said earlier, but let's go to Gregory, and then we'll
21 go to Bill Dornsife.
22 MR. SUBER: Okay. Actually, my question
23 is for Tom, if he can help me think through something.
24 You mentioned about the letters that the NRC issued,
25 and that we could use those letters to construct the

1 RIS. And in the conversation today I was sort of a
2 little bit more confused about operational efficiency
3 than I was before I walked into the room today,
4 because I can see in a powerplant where you are
5 actually operating.
6 You can have an operational efficiency
7 based on how are you doing with your resins. But once
8 it becomes waste, then the only operation is blending.
9 And so I kind of see some disparities in definitions,
10 and I was hoping that you could help me understand how
11 with the -- you know, how can we write guidance, how
12 can we write a RIS, when it doesn't seem like we have
13 consensus on terms here?
14 MR. MAGETTE: Okay. I'm not sure exactly
15 how much consensus you are looking for, or how much --
16 that's a standard that has to be met. But I think it
17 is clear that there are operational efficiencies
18 associated with not having to store waste at a
19 powerplant site.
20 Lisa went into some detail about that,
21 that they are very real and they are very significant.
22 So that is exactly what I am referring to when I say
23 "operational efficiencies." To me, it is, as I said
24 earlier, just like you talk about volume reduction.
25 The volume reduction that was achieved by PWRs wasn't

1 actually achieved at any PWR, with maybe very rare
2 exceptions. It was achieved offsite. That doesn't
3 mean it doesn't count.
4 So that's what I'm saying, the operational
5 efficiency for blending of waste is based on the
6 operational efficiency of not having to do something
7 -- that something be storing at a powerplant.
8 MR. SUBER: Okay. And I guess that is
9 part of my confusion is because I'm not sure if we, at
10 the NRC, understand when a BTP says "operational
11 efficiency" exactly what it means, because when I
12 first read it -- and to me "operational efficiency"
13 meant, hey, you are cleaning up the reactor water
14 cleanup system.
15 And, you know, you have these resins,
16 you've got to dump them somewhere, so you dump them in
17 the tank, you know, and then you have some more
18 resins, and you have to put them somewhere, so you put
19 them in the same tank, or you put them in a different
20 tank.
21 And to me that is where the operational
22 efficiency came in, in actually cleaning up the water
23 system. But after you dump them in a tank and you
24 have to do something with them, that becomes waste
25 processing or waste management, and I'm not sure if,

1 when the BTP was talking about operational efficiency,
2 it was talking about the waste management portion. I
3 mean, is that clear? Do you understand what I'm
4 saying?
5 MR. MAGETTE: Yes. But I don't think you
6 can ask me to clarify all the terms in the BTP.
7 (Laughter.)
8 You guys are sitting right next to Jim.
9 He can do that for you.
10 MR. SUBER: Okay.
11 MR. MAGETTE: I see your point. Yes, I
12 see why that -- there would be some confusion on that
13 point. What I'm offering is a definition for that
14 term, and what I'm suggesting is, if it has been
15 interpreted more narrowly, I think it is important and
16 prudent to interpret it more broadly, because we have
17 talked today in more specific terms than anything I
18 have heard previously.
19 And we also have dose reduction specifics
20 that we can provide, so I think we can show that the
21 kind of standards that were suggested as guidance in
22 the BTP -- here again, those are guidance. You can do
23 it this way or maybe you could do it another way.
24 So I don't think you want to get too
25 narrow in the definition of a term in guidance like

1 that, or -- I mean, you could, but then you are just
2 going to open the door to someone coming in and
3 saying, "Okay. In addition to that, here is another
4 way," because after all that is guidance, and you
5 yourself describe your guidance as something that, if
6 you do it this way, it satisfies the regulations, but
7 there may be others, so here is another.
8 So I don't think it serves any purpose to
9 narrowly define terms like that. But to the extent
10 that there has been confusion about that, I think we
11 have provided some illumination. I think we have
12 provided clear illustrations why the broader
13 definition is appropriate.
14 MR. SUBER: Okay. All right, thanks. And
15 that kind of leads me to what I wanted to ask Mark
16 about, is, you know, when we are talking about
17 guidance versus a rule, we are talking about something
18 that the NRC is saying, "Hey, you know, this is one
19 way to -- you know, to meet our regulations." And for
20 the states, how helpful is that going to be as opposed
21 to the system that we have now?
22 If we go into guidance versus rulemaking,
23 you know, what is our assurance that it is going to be
24 any more clear now as opposed to something that the
25 states absolutely understand unequivocally that they

1 have to follow? I mean, was that part of the
2 conversation that the states had before you came here?
3 And can you kind of help me through the process? Am
4 I clear?
5 MR. YEAGER: The states would prefer to
6 have flexibility. With guidance we have flexibility
7 to promulgate our own restrictions, more restrictive
8 processes, as we see fit, restrict certain waste
9 forms, accept waste forms in the interest of some of
10 the reasons I have pointed out earlier, you know, a
11 case-by-case basis, what is the benefit of it?
12 MR. SUBER: Okay. But if you -- okay.
13 I'm glad you said that, because if you restrict
14 certain waste forms that aren't restricted by rule,
15 then, you know, are you setting yourself up for -- to
16 create a situation where somebody can say, "Hey, you
17 are not compatible with the overall NRC guidance, with
18 the overall NRC rule, because you are arbitrarily
19 restricting a waste form or a waste -- or a particular
20 class of waste."
21 I mean, because I think that is part of
22 what is going on in Utah right now, right? They want
23 to restrict or previously the Radiation Control Board
24 wanted to put a moratorium on a particular waste form,
25 and they started to raise compatibility issues. Are

1 we potentially setting ourselves up to go down that
2 same path, if we go the guidance route as opposed to
3 the rulemaking route?
4 MR. YEAGER: Well, the simple answer is
5 rulemaking makes it all uniform. And as agreement
6 states, we have to conform to whatever NRC conducts,
7 you know, or finally comes up with in a rule. And we
8 have X amount of years to comply, or we lose our
9 agreement state status.
10 The concern that Utah has is the facility
11 was set up as a Class A facility. Now the game has
12 changed, and this blending issue has come up. And now
13 there is a proposal to blend down B and C to A.
14 Now, I can see it from a technical
15 standpoint that with higher concentrations of B and C
16 you can do whatever you want, you can't get to A.
17 These are -- and that is the rule of 10. So, again, I
18 think Utah's position is, listen, we acted in good
19 faith when this facility was being licensed.
20 Now we feel like this is being put upon
21 us. This was originally B and C through this
22 particular -- you know, through the system as it is.
23 Now you're changing the rules on us, and there is
24 nothing we can do about it, because the facility is
25 open right now. So that's the position of the state.

1 Does that help?

2 MR. SUBER: It kind of helps, but I still

3 have the same concern. And it's something that, you

4 know, this is why we're here and trying to get this

5 information, because the last thing we want to do is

6 go through a process to end up at the same place where

7 we were before.

8 MR. YEAGER: Sure.

9 MR. SUBER: You know, and so I'm trying --

10 MR. YEAGER: Well, my --

11 MR. SUBER: -- to get information that is

12 going to give me --

13 MR. YEAGER: Well --

14 MR. SUBER: -- a little higher level of

15 confidence that guidance is actually going to do it

16 for us, because I'm not convinced that it will.

17 MR. YEAGER: And my answer to that would

18 be just active engagement with the state programs that

19 currently operate facilities and come to a consensus

20 that everybody can agree to, as far as NRC. And then

21 you can decide whether you want to stay with the

22 guidance, going through a guidance-type position like

23 the BTP, or you want to make a formal rulemaking.

24 FACILITATOR CAMERON: Gregory, let's see

25 if other people can -- want to weigh in on your

1 concern? And let's go to Bill and to Lisa and to
2 Christopher. Bill. Bill Dornsife?
3 MR. DORNSIFE: Well, let's face it, the
4 real critical issue here is: what is the NRC's policy
5 regarding blending that alters the waste
6 classification? You know, we are told guidance isn't
7 policy. You know, what is the policy? Is it
8 allowable or not? You have two states out there.
9 You have Texas that has a regulation that
10 you allowed to be implemented, that has that as a
11 policy. You have Utah now giving you comments on the
12 waste blend at meeting saying, "Utah is opposed to
13 waste blending as the intent is to alter the waste
14 classification for purposes of disposal site access."
15 So the critical question is: what is
16 NRC's position on this? And is it going to matter to
17 the states?
18 FACILITATOR CAMERON: Well, that may
19 follow along with Greg's point. If you put it that
20 way, then if the NRC wanted to adopt a favorable
21 position on blending in the face of the Texas and Utah
22 positions --
23 MR. DORNSIFE: Doesn't matter.
24 FACILITATOR CAMERON: -- they would have
25 to do it through rulemaking and make it a required

1 compatibility element.

2 MR. DORNSIFE: Right. But in essence

3 right now it doesn't matter the way it is. If Texas

4 and Utah decide that they don't want this stuff coming

5 to their disposal site, it isn't going to happen,

6 whether it's blended or not.

7 FACILITATOR CAMERON: Okay. Lisa?

8 MS. EDWARDS: Gregory, if I can go back to

9 your question about operational efficiency, I would

10 offer you a perspective that the purpose -- the

11 primary purpose of a nuclear powerplant is to generate

12 electricity. And any activity that diverts that focus

13 or shifts that focus to other activities in fact

14 diminishes the efficiency of the facility.

15 So, for instance, taking low-level waste

16 out of the equation, there are many activities that

17 happen in a nuclear powerplant that used to happen

18 onsite, and now they are outsourced. Could be

19 rewinding a pump or fixing a valve or reworking a

20 valve seat or, you know, all sorts of things like that

21 that at one time a particular facility may have done

22 that onsite, but due to efficiency reasons they have

23 chosen to outsource it.

24 Similarly, with waste management issues,

25 there are some things that are still done onsite. But

1 for efficiency -- operational efficiency reasons they
2 have been outsourced, and that is historic, separate
3 from blending with other processes.
4 In this case, the operational efficiency
5 actually becomes more important, because you are
6 talking about building additional facilities onsite
7 for the purpose of storage, which then require
8 additional procedures, people, and dose to operate,
9 and dollars.
10 So to me, the perspective I would offer is
11 that storage reduces operational facility because of
12 the amount of resources that must be focused on it in
13 order to do it properly.
14 FACILITATOR CAMERON: Gregory, does that
15 help?
16 MR. SUBER: Yes, it helps me understand
17 that everybody has a different definition of
18 "operational efficiency."
19 (Laughter.)
20 And we still -- and I understand -- I
21 understand and I respect -- I understand and I respect
22 that. And I wish I had a better understanding, or we
23 corporately had a better understanding of what we
24 meant in the BTP when we wrote that. And I guess we
25 can go back and figure it out, but --

1 FACILITATOR CAMERON: If you are going to
2 clarify the BTP as many people told you, maybe you
3 don't have to be beholden --
4 MR. SUBER: To that particular -- right.
5 And that's true, right.
6 FACILITATOR CAMERON: -- what you think
7 makes sense now.
8 MR. SUBER: Yes, okay.
9 FACILITATOR CAMERON: Christopher, and
10 then we'll go to Tom.
11 MR. THOMAS: Yes. On that operational
12 efficiency point, I mean, it is strange to me that
13 EnergySolutions can submit an application in Tennessee
14 and cite operational efficiencies as the reason for
15 the application to do the blending. But, really, the
16 operational efficiencies are incurred by the nuclear
17 powerplants where the material is created. So to me
18 it is totally different.
19 I mean, the operational efficiency is
20 incurred to this group over here, but it's this group,
21 EnergySolutions, that is applying for that at the
22 site, and that is a rationale -- to be able to do that
23 blending. That doesn't make sense to me, because in
24 fact, as I understand it, in most processing that
25 happens you are going to incur additional doses over

1 what you would have otherwise had you just gone to
2 disposal directly.
3 So that's why I am glad -- I'm really
4 pleased you are digging into this issue of: what does
5 it mean, "operational efficiency?" Because I don't
6 really see it jiving exactly the way I think it makes
7 most sense.
8 And then the other point is, from the
9 aspect of the states, I mean, yes, I do understand
10 that Texas has a rule prohibiting downblending, and I
11 think that that should be respected, if that's the way
12 the State of Texas wants to operate. Utah has now
13 said it is opposed to having downblended waste. I
14 think Utah should have an important voice in this
15 process, because that -- you know, the people of Utah
16 are going to ultimately be the -- have the long-term
17 legacy of that waste and how it comes in.
18 And there is also a rule that was actually
19 discussed at the last Radiation Control Board hearing
20 in Utah, so it is not just opposition voiced in the
21 context of this meeting, but there is also a rule that
22 has been talked about. And there is a subcommittee
23 that is looking at, you know, how to proceed on that
24 issue.
25 So, I mean, speaking as a citizen of the

1 State of Utah, I think the State of Utah should have
2 an ability to weigh in, and right now my concern is
3 that the state doesn't really. I mean,
4 EnergySolutions is kind of saying that basically, you
5 know, current guidance allows them to do downblending,
6 and, you know, basically they would only need approval
7 from the State of Tennessee.
8 And then that leaves Utah without, like I
9 said before, a trigger to say yea or nay, we don't --
10 you know, we want to do this or we don't. And then
11 the only thing the State of Utah is left with is to
12 make its own rule to say no, and I --
13 FACILITATOR CAMERON: Similar to the
14 Texas --
15 MR. THOMAS: Right.
16 FACILITATOR CAMERON: -- Texas situation.
17 Okay.
18 Tom?
19 MR. MAGETTE: Greg, I want to come back to
20 your guidance -- can it be done with guidance
21 question, and then I want to also address some of the
22 comments that have been made about Utah. I think it
23 can be done in guidance, and that you can resolve some
24 of these issues, because you do have regulations that
25 there is a clear, logical path through to allow this.

1 And we have talked about that before. We
2 have talked about 10 CFR 20, Appendix G. We have
3 talked about 6155(a)(8). So there is clearly a
4 regulatory path -- I say clearly, but I guess that's
5 part of the problem is it's not sufficiently clear
6 that, absent guidance, there would be agreement.
7 So I think you can -- you can fix that
8 with guidance. And that's why I have suggested
9 guidance is because of the fact that when you
10 classify, how you classify, things like that are
11 addressed in regulations today.
12 Now, in Utah there is a statute that says
13 they can't pass a law that is more stringent than
14 comparable federal regulations, and this goes
15 definitely and directly to this question.
16 The rule that Christopher mentioned that
17 was brought up on Tuesday in the Radiation Control
18 Board meeting was not acted on, and it was in large
19 part, I would say, probably solely not acted on,
20 because the Chairman of the Board essentially told the
21 Board that he did not see any way that the State of
22 Utah could ever possibly reach a determination that
23 there was a health and safety advantage to them that
24 would justify them meeting this "more stringent than"
25 provision of Utah law.

1 And so it has been talked about, it has
2 been bandied about, but there is certainly nothing
3 there, and I would argue that there is a very high
4 bar, a rigid impediment, to Utah saying, no, they
5 can't take it, because -- going back to what Marty
6 said -- lo these many hours they go. The waste
7 doesn't know it has been blended.
8 We are not talking about bringing -- there
9 is a lot of discussion that keeps coming back to this
10 notion of this new blended waste. We are talking
11 about Class A waste, coming into a facility that is
12 licensed to take and dispose of Class A waste.
13 And so this notion that there is some new
14 thing, some unanalyzed thing, I don't believe is
15 correct. And so that is the point I would make, if
16 you are going to try to impose some restriction on
17 that. If you're going to talk about a rule, you know,
18 there is a compatibility category for 61.55 that, you
19 know, because of transboundary impacts states its
20 class -- it's a compatibility category. These states
21 largely have to adopt those regulations. This would
22 be consistent with that.
23 To go to one of your other questions
24 specifically, if you had a rule, what compatibility
25 category should it be? Well, I think it should be the

1 same compatibility category as the existing rules that
2 apply to this waste.
3 So this notion that somehow, gee, guidance
4 doesn't matter because it is -- it wouldn't have
5 anywhere to go anyway, that is flawed. Okay? The
6 suggestion it couldn't go to Utah, that's not correct.
7 So those I think are pretty clear matters.
8 As to guidance versus rule, I think it
9 could be done in guidance because of what your rules
10 already say. Could it be more clear if you had a rule
11 that addressed it specifically? I guess it could, but
12 I just think that that's an expensive, onerous, time-
13 consuming process that simply isn't necessary.
14 FACILITATOR CAMERON: Okay. Thank you,
15 Tom. And we are going to go to Don and Miguel. I
16 just don't want to lose sight of one issue that was
17 brought up earlier, which is I'm going to go back to
18 something Christopher said about there should be a
19 comprehensive analysis of whether the blending policy
20 or the -- a new blending policy should be established
21 or clarified, that took a look at potential
22 transportation impacts, etcetera, etcetera. The same
23 types of things that you might look at if you were
24 doing an environmental impact statement.
25 And I don't want to make too much of that

1 label, okay, environmental impact statement, because
2 that implies that there is a decision. Is it a major
3 federal action? That usually doesn't happen with a
4 guidance document.
5 But for Greg and others, Tom might take
6 the position that, well, you don't need to do
7 something comprehensive like that just to clarify the
8 guidance. But for people who had concerns, such as
9 Christopher, to make sure that you looked at all of
10 the potential impacts across the board, how would that
11 happen if we -- if we just clarified the guidance? I
12 guess that's a question I wanted to put out there for
13 all of you to think about.
14 And now I'm going to go to Don, and then
15 we're going to come to Miguel. Don?
16 MR. SAFER: Thanks. I have some
17 observations that -- based on the conversations we've
18 had. And they are going to be in sort of random
19 order, but in response to some of the statements that
20 have been made.
21 The one, to begin with, it is certainly
22 understandable that you are going to have nuclear
23 waste when you are making electricity with nuclear
24 power. There are other ways, however, to make
25 electricity, and I just would like to bring that into

1 this room. You've got solar, you've got wind, you've
2 got hydro, you've got many other ways to make
3 electricity that don't create nuclear waste, and that
4 is the direction we need to be going.
5 I understand we are using a lot of nuclear
6 energy now, but I just want to pull that into the
7 discussion, because you say these nuclear powerplants
8 are designed to be efficient, to make electricity, and
9 the waste that we make is just a peripheral issue.
10 Well, that's what is concerning. So that is that
11 observation.
12 Moving on to the next point, a lot of this
13 discussion seems to be revolving around the fact that
14 there is a need for disposing of the B and C waste
15 that is building up, and it's creating problems in the
16 operating plants. And I can see that's a problem. I
17 understand that takes a lot of time and effort and
18 cuts into your efficiency.
19 But it is not necessarily -- the way to
20 solve it is by downblending this stuff into very --
21 you know, Class A waste that is -- Class A waste with,
22 as I understand it, a small A. It is not capital A.
23 By the time it gets blended, it is going to be capital
24 Class A waste, right at the very top of the limit,
25 pushing the limit of Class A.

1 I don't think it's fair to characterize it
2 as the same material. It is definitely not. We have
3 already seen that there are a lot more radioactive
4 isotopes in the new capital Class A. And I realize it
5 is capital Class A to begin with, but there is a
6 distinction I think.
7 I think it is incumbent on the industry to
8 figure out another way to deal with this waste rather
9 than this method, which strikes me -- I mean, I've
10 talked to people in Tennessee about this, and one
11 person said, "Why, that's just fraud, that's trickery,
12 that's tomfoolery."
13 You are taking a material that is Class A,
14 that is less radioactive, and mixing it with B and C
15 and blending it, and then still calling it Class A?
16 Well, that's just disingenuous, and I think that's how
17 the public is really going to view this when it comes
18 out. It's like, you know, a shell game where you just
19 keep moving the shells around, but a lot of regular
20 people are going to see this as disingenuous.
21 And I think it -- we need to scratch our
22 heads, or the people in the industry need to scratch
23 their heads about other ways to get rid of this B and
24 C waste safely, and not put it into a landfill that
25 was designed with a whole other idea. And the people

1 in that area had a whole other concept of the type of
2 materials that were going to be in there.
3 And I guess that's my statement at this
4 point. Thanks.
5 FACILITATOR CAMERON: Okay. Thanks, Don.
6 Miguel?
7 MR. AZAR: I guess going back to Greg's --
8 you were trying to understand operational
9 efficiencies, and you asked questions and you got all
10 kinds of viewpoints. Well, it is really from the
11 generator's viewpoint, because we choose to either do
12 it onsite or offsite. That is -- we do that with
13 every waste stream or everything that we do. It is
14 either done onsite or offsite. It's just a matter of
15 what is convenient for us.
16 So, really, that is the way you need to
17 look at it. I mean, let's face the facts, if we don't
18 generate it, there is no -- we don't need the
19 processors. If you look at the design of a plant, a
20 powerplant, it can process all the waste, whether it's
21 done in Tennessee, whether it's done in another part
22 of the world. That is the way -- that is the way we
23 look at it.
24 All they are doing is providing a service
25 that they feel that there is a need for. So whether

1 Barnwell is open or new Barnwell is open, that doesn't
2 make a difference. We have the ability to mix it in
3 our tanks, because we are designed that way. And no
4 one can say that, hey, this is Class A or B until you
5 -- by the current rules you decide to characterize it
6 and classify it. So that is why I say it has to be
7 from the generator's viewpoint.
8 FACILITATOR CAMERON: Okay. We are going
9 to go to these three cards on this one, namely
10 Christopher, Tom, and Bill Dornsife. We build in the
11 policy considerations topic at the end, to just make
12 sure that we caught a lot of these same issues that
13 we're discussing. So I listed some that I heard. I
14 will just quickly repeat those.
15 I think Larry Camper, who when we get to
16 the point of closing out the meeting, which I think we
17 are going to have to get to soon, is going to talk to
18 those. So I don't want to make a big deal about the
19 policy considerations topic, but I do want to make
20 sure that we hear from Christopher and Tom and Bill.
21 And let's go to Christopher, and we'll see where we
22 are. We'll go down the line and see where we are.
23 MR. THOMAS: I actually, Chip, wanted to
24 talk about policy considerations.
25 FACILITATOR CAMERON: Okay.

1 MR. THOMAS: So --

2 FACILITATOR CAMERON: Good.

3 MR. THOMAS: So one thing that I haven't
4 mentioned at all today yet, but I think is crucially
5 important, and maybe the NRC is not the appropriate
6 group to consider this. But from where I sit, a very
7 fundamentally important issue here is, you know, the
8 low-level waste radioactive -- Low-Level Radioactive
9 Waste Policy Act, and the idea that eventually regions
10 and groups of states would band together to deal with
11 their own radioactive waste burden.

12 And I think that because of the facility
13 in Utah, that it has been open to the rest of the
14 country pretty much, has totally frustrated and
15 upended that whole policy initiative. And I think
16 that if now downblending is allowed in the fashion
17 that has been contemplated, it is going to further
18 frustrate that initiative, because, you know, right
19 now what we're seeing is impetus on the parts of
20 utilities in many states that there is an issue.

21 But if the NRC solves that issue for all
22 of those utilities in all of those states by
23 designating essentially Utah as a place where that
24 waste goes, then again those states and regions don't
25 have an impetus to develop their own regional disposal

1 facilities.

2 Now, I'm not saying I want to see

3 necessarily disposal facilities proliferate

4 everywhere. But at the same time, I think there is an

5 issue about, you know, responsibility and where does

6 that lie. And so I guess I see regional -- regional

7 responsibility for waste on one end, and then I see

8 NRC and making the decision to allow downblending of

9 this nature as frustrating that purpose.

10 And so, I mean, I think the reason we

11 haven't seen more facilities licensed probably under

12 the Low-Level Radioactive Waste Policy Act is because

13 we have had a national -- a de facto national

14 repository for low-level waste, and that is Utah.

15 FACILITATOR CAMERON: Okay. Thank you.

16 Tom.

17 MR. MAGETTE: Okay, Chip, thank you. I

18 want to just go back one more time to this notion of

19 waste form or Class A waste. And there are a couple

20 of points. One is new and one goes to what you were

21 just talking about, Don. I think there is still some

22 misunderstanding.

23 There are not a lot more radioisotopes in

24 a blended waste product. There are not. There cannot

25 be. The same radioisotopes are in A -- can be in A,

1 or B or C. It is how much of them, not what is in
2 there. It is strictly a concentration. If you -- as
3 Patty pointed out this morning, if you can go in one
4 direction up, you can go in the other direction down.
5 If you go down, you have gone down, you have not got
6 a lot more radioisotopes in that waste. I want to
7 make sure that we're clear about that.
8 Now, to go to this --
9 PARTICIPANT: (Inaudible comment from an
10 unmiked location.)
11 MR. MAGETTE: I don't think you can make a
12 case that there is a lot more activity in there
13 either. There are other -- there are controls. You
14 cannot maximize to the Class A limit every isotope.
15 You can't do that under the regulations.
16 MR. SAFER: When Christianne was speaking,
17 she said that the Class A, as it is now, is way far
18 down in the scale of Class A, as it is going to Clive,
19 to Utah, which, you know -- you know of course.
20 MS. RIDGE: I did say that, yes.
21 MR. SAFER: Yes. And she said if this
22 proposal -- if you all operated under this proposal
23 that you would be pushing the limit. And so to me
24 that is -- there is a difference there in quantity of
25 something, and I think it is radiation. But if it's

1 not, some nuclear physicist can tell me, and that's
2 fine. But I know there is more of something bad in
3 there.
4 MR. MAGETTE: I addressed that one point
5 that Christianne made in terms of how that waste
6 stream has changed. Obviously, by virtue of the fact
7 that in the EIS they looked at four million cubic feet
8 per year -- I'm talking resin waste here -- and what
9 we have is something more like 75,000 cubic feet per
10 year.
11 So I don't -- if you want to point to the
12 EIS and say, okay, there was an assumption based on
13 concentration and even quantities to get to the notion
14 of a total loading, a total activity loading, of a
15 given site, that all of a sudden we are challenging
16 those barriers.
17 Okay. Now, you may have -- you may have,
18 in a blended waste stream, some additional activity
19 that goes beyond what comes out of a powerplant waste
20 stream. I don't think anybody has shown that based on
21 what is coming out of powerplants today. But I
22 certainly would concede, for the purposes of
23 discussion, that that could be the case.
24 However, when you start talking about
25 activity loading, remember what you are talking about.

1 You are talking about now, in terms of the B/C waste
2 issue, a maximum of something like 8,000 cubic feet
3 that could go into a site like Clive. David can talk
4 to this better than I. He is the one that did the
5 study. He made the point this morning that you can't
6 blend everything down. It is simply from a practical
7 standpoint not possible.
8 So it is only a small portion of only a
9 resin waste stream. So you compare that 8,000 cubic
10 feet with, in the case of Clive, what went into the
11 site in 2009, about 3.5 million cubic feet at a much
12 lower activity level.
13 So you can't, I don't think, make anything
14 even approaching an argument that you have challenged
15 somehow assumptions that were used in an EIS to back-
16 calculate in Part 61 numbers in the tables in 61.55
17 that were derived to protect an inadvertent intruder
18 100 years after the end of institutional control,
19 based on those numbers. You're not going to challenge
20 that activity loading.
21 We did a specific calculation. We assumed
22 not 8,000 cubic feet. But if you took all of the
23 activity from B/C waste resins generated over the next
24 10 years, and added just that activity at Clive, not
25 any more volume, not any more DAW, not any more of the

1 lower activity waste, just keeping only the volume
2 that is there, not changing the denominator in that
3 calculation at all, and we would still be just over
4 about two percent of the Class A limits.
5 So in the aggregate, looking at the
6 activity that could go into a site with a mixed waste
7 waste form, here again I -- you have not fundamentally
8 challenged the assumptions from the EIS. That is my
9 point.
10 FACILITATOR CAMERON: Okay. We are going
11 to try to do this quickly. I see a couple of
12 reactions to Tom's comments. I know you want to --
13 (Laughter.)
14 And we're going to get Christianne and
15 Diane's reaction to what they heard from Tom in a
16 minute. I want to quickly go to Bill and to David.
17 Then, we'll get those reactions, and then we really
18 need to move on towards closing out the meeting.
19 So let me go to Bill, and then we'll go to
20 David, Christianne, and Diane.
21 MR. DORNSIFE: Well, I want to kill two
22 birds with one stone. First, I want to talk about the
23 next-to-the-last bullet, what would be the risk-
24 informed performance-based approach to addressing
25 blending?

1 I believe very strongly that the risk-
2 informed performance-based approach should be a site-
3 specific analysis of the intruder based on the
4 concentrations that are in these waste streams.
5 That's the only risk-informed analysis that really
6 means anything in terms of meeting the performance
7 objective for the intruder.
8 Now, I continue not to understand Tom's
9 argument about, you know, when he mixes B and C with
10 A, that has nothing to do with the intruder. The
11 intruder is looking at a specific waste stream, which
12 is at or near the Class A limit, that is disposed of
13 in a cell with a lot of other similar waste. I mean,
14 what was assumed in Part 61 is you may have something
15 close to the limit, but right next to it you have
16 something that is way down there.
17 So the average you are digging up when the
18 intruder impacts it is an average. It is much less.
19 You are proposing to put all of these Class A --
20 blended Class A waste, diluted Class A waste, into a
21 cell that is at or near the cesium Class A limit,
22 because that is typically the controlling
23 radionuclide.
24 Okay. I mean, you know --
25 MR. MAGETTE: It's not always cesium. It

1 could be cobalt. Cesium does not always drive the --
2 MR. DORNSIFE: Well, you are still going
3 to have a lot of cesium in there, no matter what.
4 MR. MAGETTE: Yes. But you can't just say
5 it's all driven by cesium.
6 MR. DORNSIFE: Most of it, I said, okay?
7 MR. MAGETTE: Not even most of it.
8 MR. DORNSIFE: Oh, Jesus.
9 FACILITATOR CAMERON: Okay. Let's --
10 MR. DORNSIFE: What's your -- wait, no.
11 Okay. But I can't see how you can continue to say
12 that there is no unresolved safety issue, since you
13 haven't done an intruder analysis for real waste at
14 your facility.
15 MR. MAGETTE: That's not correct.
16 FACILITATOR CAMERON: And that's where we
17 need to focus is that -- and Tom --
18 MR. DORNSIFE: Let me see it.
19 MR. MAGETTE: Why?
20 (Laughter.)
21 FACILITATOR CAMERON: Okay. I think Tom's
22 point --
23 MR. DORNSIFE: They haven't seen it either
24 or they wouldn't be asking the question.
25 FACILITATOR CAMERON: You guys agreed on

1 this earlier today.

2 MR. DORNSIFE: No, we didn't.

3 FACILITATOR CAMERON: That there should be

4 -- that it comes down to the site-specific

5 performance --

6 MR. DORNSIFE: Right.

7 FACILITATOR CAMERON: -- assessment. And

8 I think from what Tom is saying is that that is what

9 he believes.

10 MR. DORNSIFE: Yes, right.

11 FACILITATOR CAMERON: Okay. So then

12 that --

13 MR. DORNSIFE: And then he comes back and

14 says he is doing this two percent thing, averaging

15 over the whole site.

16 FACILITATOR CAMERON: Well, you're not his

17 regulator yet.

18 MR. DORNSIFE: I wish I were.

19 FACILITATOR CAMERON: I know you do.

20 (Laughter.)

21 I know you do.

22 MR. MAGETTE: There are a lot of people in

23 Pennsylvania that are glad you're not.

24 (Laughter.)

25 MR. DORNSIFE: I don't think so, Tom. I

1 don't think so. But there's a lot of people in Utah
2 that are not too glad you all are there.
3 FACILITATOR CAMERON: Well, you know, we
4 are really starting to have a lot of fun now, and I
5 hate to end this session when we have just begun to
6 have fun, but -- David? David? And then we're going
7 to take the three cards, and then we are going to do
8 something else. David?
9 MR. JAMES: I just want to focus back on
10 the technical issue, which -- for consideration of the
11 branch technical position. The purpose of the BTP, as
12 expressed in the BTP I believe, was for protection of
13 the intruder. And as the restrictions are imposed by
14 the BTP, as they apply to resins in particular, really
15 don't result in any additional intruder protection.
16 Because of the amount of material that the
17 intruder would have to encounter in this resident
18 scenario, there is averaging that is inherent in it,
19 and that even with a broader averaging basis our
20 intruder protection objectives can be achieved just by
21 taking into account the dilution that is inherent in
22 the mixing of the waste streams, the soil, the fill,
23 the other materials that go into the site along with
24 it.
25 These were adequately accounted for in the

1 environmental impact statement for 10 CFR 61, as well
2 as for the disposal sites. They can be achieved
3 without the averaging restrictions of the BTP, as the
4 intruder protection. And they currently are enhanced
5 by the additional intruder protections that are
6 provided by the disposal sites as they are operated,
7 including structural barriers, layering, and deeper
8 disposal. Those things are all covered all in the
9 current equation.
10 So really not achieving anything in terms
11 of additional public safety with these constraints.
12 That is where we came from in our initial
13 investigations through EPRI, and that was more or less
14 what was covered in the report that we submitted to
15 the NRC. And we would like to keep that
16 consideration, irrespective of what arguments may
17 exist between EnergySolutions and WCS.
18 FACILITATOR CAMERON: Okay. So you are
19 going to try to add some --
20 MR. JAMES: Some gravity.
21 FACILITATOR CAMERON: -- some common
22 sense --
23 (Laughter.)
24 Okay. Thank you for doing that, David,
25 some gravitas.

1 Christianne, and then Diane, and we'll
2 finish with Marty. And I just want to run through a
3 couple of policy considerations, and I want to
4 introduce a colleague of mine to handle the last
5 public comment. Christianne.
6 MS. RIDGE: I just wanted to ask Tom if he
7 could clarify for me something that he said in
8 response to Don's question. I think that during your
9 last response there you said that we are not doing
10 anything -- to say that we are now challenging these
11 limits is misrepresenting the issue, and I think we
12 moved in your response from talking about the intruder
13 at first, but then at the end, when we were talking
14 about coming up to two percent of the total activity
15 loading, I think we then must have been talking about
16 an offsite member of the public.
17 Of course, an intruder wouldn't encounter
18 all of the waste at the site. So I just wanted to
19 make sure I was understanding that clear, that we had
20 shifted during your response from talking about the
21 intruder to talking about an offsite member of the
22 public.
23 MR. MAGETTE: I think it applies to both.
24 We talked about it a little bit this morning, but
25 just going back to the -- and David just touched on it

1 -- the notion that these are -- they are layered, they
2 are deeper, they are in fact engineered structures.
3 So the assumption that there is no intruder barrier is
4 not applicable. That is my point on the inadvertent
5 intruder.
6 And then, yes, in terms of a site loading,
7 yes, it is more of a 61.41 thing.
8 FACILITATOR CAMERON: Okay. Thank you.
9 Diane?
10 MS. D'ARRIGO: I also wanted to have a
11 clarifying question for what Tom said, which am I to
12 understand that you're saying if you took all of the B
13 and C, which you say would be 8,000 cubic feet, and
14 you buried it at Clive, and then divided it by the
15 volume that has already been buried, that it would be
16 two percent of the Class A limit?
17 MR. MAGETTE: Almost. What I said was if
18 you took all of the activity, not from the 8,000, but
19 from the 18,000 cubic feet, all of the resins that are
20 generated roughly in a year, times 10, 10 years of
21 that activity loading, that was -- that's the source.
22 So it is the 18-, not eight. It is 10 years' worth,
23 and it is strictly looking at that activity. And,
24 yes, about 2.4 percent.
25 MS. D'ARRIGO: So you are essentially

1 saying that you don't even have to downblend it. You
2 could -- if the regs allowed, or if the state allowed,
3 you could bring all of the B and C in and bury it
4 there, because you could average it over all of the
5 waste that has already been buried, which is very high
6 volume, low activity, that it would average out to be
7 less than Class A.
8 MR. MAGETTE: That's not exactly what I
9 said. I was using -- that's a hypothetical
10 calculation of a loading. First of all, it is not all
11 B/C. We are only talking about resins -- only talking
12 about resins. We are not talking about all B/C.
13 There are a lot of -- it has been mentioned several
14 times today. There are a lot of other B/C waste
15 streams that don't factor into that at all.
16 And I am just strictly talking about the
17 activity associated with that waste stream. And I'm
18 not suggesting that we want to bring B/C waste, or
19 intend to, or can bring B/C waste into the --
20 MS. D'ARRIGO: I'm just trying to
21 understand technically what you were saying.
22 MR. MAGETTE: If you --
23 MS. D'ARRIGO: So if you took all of the
24 U.S. nuclear power resins that are generated in a
25 year, which is A, B, and C categories, and that amount

1 of radioactivity? I mean, I'm just --

2 MR. MAGETTE: Okay. There's about --

3 MS. D'ARRIGO: I want to understand what

4 you're saying.

5 MR. MAGETTE: -- 18,000 cubic feet per

6 year of resin waste from the nuclear power industry

7 that is classified as B or C today.

8 MS. D'ARRIGO: Okay.

9 MR. MAGETTE: That's the source of the

10 activity I'm talking about.

11 MS. D'ARRIGO: Okay. So just B and C.

12 MR. MAGETTE: Just B and C --

13 MS. D'ARRIGO: Okay.

14 MR. MAGETTE: -- 18,000 cubic feet of B

15 and C waste over a 10-year period, the aggregate

16 activity from that, from that waste stream.

17 MS. D'ARRIGO: Right.

18 MR. MAGETTE: If you add that to the

19 activity loading currently in Clive, as of the end of

20 the year 2008, which is roughly at -- here again, this

21 is end of 2008, it's a year old, 1.9 percent of the

22 Class A limit. That is the amount of Class A waste --

23 the activity that could have been disposed of in that

24 site at the Class A limit. That's where we are today.

25 If you added that activity in -- this is a

1 hypothetical calculation -- that would take us to
2 about 2.4 percent of that Class A limit.
3 MS. RIDGE: When we have used the term
4 "Class A limit" during the day, we have been talking
5 about concentrations. And I think right now when you
6 talk about Class A limit you are talking about
7 something else, and that might be the source of some
8 of the confusion. So far today when we have talked
9 about Class A limit we have just been talking about
10 concentrations.
11 MS. EDWARDS: I think during the
12 conversation today when we have talked about Class A
13 limits we were applying it to a package. And the
14 hypothetical that I think Tom is talking about is if
15 you look at the whole facility, and you brought this
16 additional waste and you looked at all of the activity
17 that is there right now and added this additional
18 activity, and you looked at the whole volume of the
19 facility, it would be a fraction of these Class A
20 limits. Do I have that right? That's what I was --
21 MR. MAGETTE: Yes, I see --
22 MS. D'ARRIGO: And your main point, take-
23 home point here, is that this site is already licensed
24 and characterized in a way that, even if we brought
25 all of this stuff in, it is safe enough. We could

1 bring it all in as it is as long as it all somehow
2 mixed evenly and all of that.
3 MR. MAGETTE: And by "safe enough," what
4 you mean -- what I mean is it would still satisfy the
5 performance objectives of Subpart C. That's my
6 criterion for "safe enough."
7 FACILITATOR CAMERON: Okay. I think we
8 have ventilated that.
9 (Laughter.)
10 And we are going to go to Marty, and then
11 we are going to begin to close out here. Marty?
12 MR. LETOURNEAU: Well, I was going to echo
13 a little bit of what David said and what Tom has said,
14 in that the Department of Energy has I think 14
15 currently operating low-level waste disposal
16 facilities. And we have site-specific performance
17 assessments for each one of them addressing the
18 performance objectives for protection of the public,
19 protection of the intruder.
20 And each of those facilities is on their
21 second -- at least second generation, in some cases
22 third and fourth generations of those performance
23 assessments. And what I know about performance
24 assessments, and what I know about the waste source
25 term that is in those facilities versus at either WCS

1 or Envirocare, I would be willing to put down a $1,000
2 bet right now that when either one of you does a site-
3 specific performance assessment you are not going to
4 violate the performance objectives for protection of
5 the intruder.
6 And when you go to doing a site-specific
7 performance assessment, you are probably going to find
8 that you can put a lot more waste at either one of
9 those facilities without violating any of the
10 performance objectives.
11 FACILITATOR CAMERON: Okay. Thank you.
12 Thank you, Marty.
13 When we get to -- Larry Camper is going to
14 close the meeting out for us. He is going to talk
15 about some policy considerations. Some of the things
16 that I heard I will just note quickly. Is it
17 appropriate for NRC to expand its blending policy to
18 ensure disposal access for what would be B and C
19 waste? If so, how should this be done? Rule?
20 Guidance? We talked about that.
21 What type of analysis should accompany
22 whatever NRC does? What are the downsides of
23 maintaining the status quo? We have heard a lot about
24 that.
25 NRC establishes a new policy by rule, what

1 compatibility designation should be given. If states
2 have the flexibility to determine what happens on this
3 issue, is there some minimum performance assessment
4 standard? We heard that there is a bunch more. I
5 think that this has been a great discussion.
6 I wanted to introduce Rick Barkley right
7 here. He is from Region I. We have a facilitator
8 training program at NRC, and you can certainly see why
9 that would be an attractive thing to do when you have
10 a great group of people like this around the table.
11 And I'm not just saying that tongue and cheek.
12 But I have been hogging the microphone all
13 day. We do have one final audience phone comment
14 period, and I was just going to, you know, turn it
15 over to Rich to do that.
16 And then, the final thing we'll have is
17 Larry Camper.
18 MR. BARKLEY: Okay. Thank you. This
19 would be a great group to facilitate. I am used to
20 very contentious meetings between the audience and the
21 NRC and a licensee, so this is a much different forum
22 for me.
23 At this point, I would like to ask the
24 audience if there are any questions that you want to
25 ask the panel at this point. Over here?

1 MR. CHEN: S.Y. Chen of Argonne National
2 Lab. I just offer my observation here. I think going
3 through the observation of proceedings here I have
4 kind of come to some sort of my conclusion alone, but
5 it may not be a conclusion.
6 Number one, if the current rule does not
7 preclude blending, then there is room for NRC to
8 enhance its position, preferably by, you know, BTP, as
9 many people say that. Having said that, that route of
10 taking the BTP will be pretty steep.
11 Based on the opposition I heard here, and
12 the repercussion that you may encounter, you might
13 want to rethink this approach. And so that leaves the
14 other option of rulemaking, and the rulemaking
15 approach, again, is not an easy approach either,
16 because you have to come back to revisit 10 CFR 61,
17 specialty classifications.
18 The reason I'm saying that, because there
19 is a reason for NRC to develop three classes some 30
20 years ago, because you want to have control based on
21 the outdated information or approach you have. No
22 matter what you did, there is a conservative approach
23 in classification. For what reason? Control, health
24 public and safety. Class C you get ultimate control.
25 You've got an enhanced barrier. Class A, probably a

1 lot less.

2 Doesn't matter they are outdated or not.
3 It was developed 30 years ago. So if you are going to
4 change that to blending, you would appear to be
5 disingenuous to the public by skipping this whole
6 process. So the approach could do that in reinventing
7 the approach.

8 I said earlier in the morning session
9 moving toward a more risk-informed approach, as many
10 people they already echo here, as much as you can
11 while sharing this table lookup thing, because you
12 continue to get to the table lookup. You got hung up
13 with the three classification. You cannot wait; we
14 grow out of that. You are bound to that. You had to
15 honor that, because that was your original intent.

16 So I would prefer that you get that in the
17 overall long-term deliberation of the rulemaking.
18 That is pretty much the ultimate way for you to really
19 set this whole regulatory process straight. That is
20 just my opinion.

21 MR. BARKLEY: Okay, thank you. Do you
22 want to address that at all? Okay. Question? Go
23 ahead.

24 MS. WILLIAMS: I just have an innocent
25 question from the public about this intruder. Why are

1 you talking -- oh. My name is Mary Jane Williams. I
2 am making a documentary on nuclear waste.
3 The question is -- this intruder, how come
4 we are only talking about an intruder in 100 years, or
5 500 years? I used to live in Concord, Massachusetts,
6 where we had a company called Nuclear Metals, Inc.,
7 that made penetrators out of uranium.
8 And according to history, in the 1980s,
9 the early '90s, they were thrilled that Utah was
10 opening up -- I don't mean to be -- well, yes, I do --
11 Utah was opening up Envirocare, somebody who was
12 willing to take all of our waste out of Concord,
13 Massachusetts.
14 And it was simply -- what is the half-
15 life, something in the billions? So what about this
16 intruder in 1,000 years?
17 MS. RIDGE: Well, we focus on the 100-year
18 case in most cases because it -- not in all cases, but
19 in most cases for the types of waste we are really
20 talking about today the risk to the intruder would be
21 the highest at 100 years. There are some differences.
22 Briefly, this mentioned we -- this morning we talked
23 about depleted uranium. That is a different type of
24 waste that we are not really talking about today.
25 But in that case it is a little different,

1 but for the type of waste that we're talking about
2 today the risk to an intruder is the greatest at
3 shorter times. And so we look at the risk basically
4 at the time when an intruder could live there, which
5 is when institutional controls are presumed to not be
6 there anymore.
7 MR. BARKLEY: Institutional controls.
8 Let's clarify that. This is the point at which they
9 remove security or fencing around --
10 MS. RIDGE: Right, yes. Institutional
11 controls would mean that -- exactly as you said. They
12 have removed security or fencing, so it is a point at
13 which someone could unintentionally intrude on the
14 waste.
15 MR. DORNSIFE: No, no. It's the time when
16 it is assumed you lose controls. You could have long-
17 term care forever if you wanted to and the money was
18 there. It's when the regulations or the guidance
19 assumes that you lose institutional control. Nothing
20 is taken down necessarily. It is when you have to
21 assume under the regulations that that is when
22 somebody can intrude in the site without knowing there
23 is waste there.
24 MS. RIDGE: And that is --
25 MR. DORNSIFE: For whatever reason.

1 MS. RIDGE: That is a good clarification
2 to what I said. I should have said that -- as Bill
3 corrected, I should have said that's when it is -- we
4 no longer are presuming that the controls are there.
5 They certainly could be there, but we are no longer
6 presuming that they are there.
7 MR. BARKLEY: Another question from the
8 audience?
9 MR. ROBERTS: My name is Mark Roberts.
10 I'm a Senior Health Physicist in our Decommissioning
11 Branch in Region I.
12 Patty Bubar said earlier there was an
13 inconsistency in the decommissioning area. Will your
14 guidance or paper address the inconsistency relating
15 to the guidance on decommissioning in your paper? You
16 don't have to answer that question, but I just -- I
17 bring it to your attention that we shouldn't have an
18 inconsistency, so --
19 MR. BARKLEY: Okay. Any other questions
20 from the audience?
21 MR. WILKINS: Yes. I'm Dave Wilkins.
22 I've just got a comment for Diane. Maybe I can ease
23 your mind a little bit. I'm actually an ex-employee
24 of Studsvik, so you'd think I'd be disgruntled, but --
25 (Laughter.)

1 -- I heard that you were bringing up the
2 incinerators, and I just wanted to touch on that. I
3 understand where you are coming from, but I will
4 guarantee you -- and I think like I think Lisa said
5 that they are also your environmental guardians. They
6 are very well regulated, and they do have local
7 meetings.
8 Studsvik holds local meetings where people
9 have a voice of opinion, so I wanted to let you know
10 that there are people -- you know, the public does
11 have a say-so.
12 I work for a competitor of
13 EnergySolutions, but they also are professionals on
14 how they take care of their waste as well.
15 So not being a generator -- I have worked
16 at generating stations for 28 years, even though I
17 look probably 35 years old --
18 (Laughter.)
19 -- and, again, what is released out of
20 these stacks is very well monitored. It is filtrated,
21 it is scrubbers and situations that cleans it as much
22 as possible. I don't know the adverse effects. I'm
23 not a doctor, never played one on TV.
24 But I just wanted to -- I know your
25 feelings, and I just wanted to touch on that -- that

1 the public is aware of some of these situations that
2 are happening, and they do have a say-so.
3 MR. BARKLEY: Okay. Thank you. Any other
4 comments from the audience?
5 (No response.)
6 With that, I think I would like to move to
7 the phone. All right? Let's see how much of a
8 challenge this is bringing a question over the phone.
9 If anybody would like to speak up, please do so.
10 Please state your name first. Hopefully we don't have
11 too many interruptions. Any question on the phone
12 system?
13 MR. NANNEY: No questions. This is Eddie
14 Nanney, Tennessee Radiological Health. I have a
15 comment.
16 MR. BARKLEY: Go ahead.
17 MR. NANNEY: Okay. I've been here all day
18 long listening. I didn't have, we didn't have any
19 particular, you know, technical comments that we
20 wanted to make on the issue of blending, so I didn't
21 come to the meeting, and hence I don't have a tent,
22 you know, as Chip referred to several times today.
23 I find myself one of the last probably to
24 speak, but I did want to say -- make a remark or two.
25 We are very interested in this issue, because, as

1 Larry mentioned earlier, a couple of our licensees
2 that we regulate in the State of Tennessee are the
3 ones who are lobbing hand grenades at each other.
4 We have a vested interest in this. In
5 fact, we have talked with EnergySolutions about what
6 they need to do in order to get into commercial
7 operation. They wanted us to license them to do that.
8 Knowing all of the uncertainties and
9 questions that surround the Branch Technical Position,
10 we deferred from doing that. We felt that we weren't
11 interested in licensing an operation that wasn't going
12 to be of any commercial market value, and we've
13 certainly had no indication, based on the Branch
14 Technical Position, that the usual customers of
15 EnergySolutions, the licensee of the Nuclear
16 Regulatory Commission, would participate, or even be
17 allowed by the existing status of the guidance to
18 participate in a blending program.
19 So certainly we encourage EnergySolutions
20 to take this issue to the NRC. We are a large part of
21 the reason probably that these meetings, including the
22 one today, are being held. As I say, we believe -- we
23 have no technical opinion about it other than to say
24 that it is our responsibility that, if this is
25 determined to be a viable operation from a commercial

1 standpoint that it would be our responsibility to
2 license that operation within the State of Tennessee
3 and to do that you know obviously, we have the concern
4 of the health, safety, and environment of the citizens
5 of Tennessee to take into account and we take that
6 responsibility very seriously.
7 As I mentioned earlier, I've not had a
8 tent to put up, but many times today, an that's
9 probably been a good thing, because there have been
10 numerous occasions that I probably would have wanted
11 to, but playing by the rules, you know, did not have
12 the opportunity to respond to some things I probably
13 wish that I could, but didn't.
14 So I will end my remarks just by
15 encouraging the NRC to take very seriously the topic
16 that we are here to talk about today, specifically
17 blending, and consider carefully the comments that you
18 have heard regarding that, and disregard those which
19 were patently off topic. And that's about all I have
20 to contribute.
21 I would, of course, respond to any
22 comments anyone wants to make.
23 MR. BARKLEY: For the purpose of our
24 transcriber, could you repeat your name again, please?
25 MR. NANNEY: Yes. My name is Eddie

1 Nanney. I'm the Director of the Tennessee
2 Radiological Health Program.
3 MR. BARKLEY: Okay. Thanks very much.
4 Are there any other comments on the phone?
5 (No response.)
6 With that, I think we will wrap up.
7 MR. CAMPER: Okay. Thank you. Thank you.
8 It's late. We have been here all day. I
9 will try to be relatively brief. But there are -- I
10 always like to try to share a few thoughts with you as
11 we wind down one of these types of discussions.
12 First, let me say thank you. As I did at
13 the outset, let me thank the panelists in particular.
14 We thought that we had put together a very good panel
15 with Chip's help, and, Chip, we thank you. You are
16 masterful, as always. It was a very good panel. The
17 dialogue was like we expected that it would be.
18 We appreciate the audience being here.
19 Thank you for the questions and the comments that were
20 made. Thank you for being here and listening. It's
21 not easy to spend an entire day and just listen, so we
22 thank you.
23 First of all, as I said this morning, the
24 staff has taken no position on what we are going to do
25 about blending. We did ask challenging questions. We

1 did that on purpose. Some of the questions that we
2 posed might imply a particular bias one way or the
3 other. That wasn't their purpose. Their purpose was
4 to get the type of stimulating discussion that we got
5 today and put the various views on the table. All of
6 the views we put on -- we heard today were very
7 valuable.
8 The staff will go back and review the
9 transcript, and we will carefully, Eddie, digest all
10 of these comments. We do take it very seriously, and
11 I appreciate that comment. And so the staff will do a
12 careful examination of the transcript.
13 Our view is that blending is a public
14 health and safety issue, not that it's good or that
15 it's bad, but it is a timely issue that warrants the
16 NRC providing clarification. And, Bill, I agree with
17 you. I think it, frankly, is a policy question. And
18 so at the very least the agency needs to provide
19 clarification of where it is on this issue, perhaps up
20 to and including even a policy space.
21 The charge to risk-inform Part 61 that the
22 Commission has given to staff, which we will commence
23 to do in FY11, we have no forgone conclusions about
24 that as well. There were a lot of comments earlier
25 today. Ralph in particular had some comments about

1 it.

2 When we go into Part 61 and risk-informing

3 Part 61, we will go into that initiative with a clean

4 slate, an open mind. One can imagine a spectrum of

5 possibilities when one looks at Part 61. At one end

6 of the spectrum one could say that perhaps a

7 performance assessment on a site-specific basis in and

8 of itself is adequate. It does pose a question about

9 what you do while in process and while conducting

10 operations, though.

11 At the other end of the spectrum one can

12 say, well, if you simply go through and modernize what

13 was done 30 years ago using current health physics

14 techniques, current ICRP methodologies, you might end

15 up tweaking the existing system. Somewhere in

16 between, for example, might be the waste

17 classification scheme that is used by the Atomic

18 International -- the International Atomic Energy

19 Agency for member states.

20 So we go at it with an open mind. There

21 are no forgone conclusions on that regulatory

22 initiative.

23 With regards to Mark's comment about the

24 decommissioning and intentional mixing, the point

25 there is that when the Commission did a license

1 termination rule analysis several years ago,
2 identified 11 issues studying the implementation of
3 the license termination rule, which is in Subpart E of
4 Part 20, one of the issues that was identified was
5 intentional mixing.
6 The Commission, in reaction to a staff
7 paper on that topic, determined that clean soil could
8 not be mixed with contaminated soil. Contaminated
9 soil could be mixed with contaminated soil on a case-
10 by-case basis after receiving Commission approval,
11 agency approval.
12 We will draw that distinction in the
13 paper, Mark, because that was established for the
14 purpose, as Patty said this morning, of
15 decommissioning and leaving a site in a position that
16 it would satisfy the decommissioning criteria. What
17 we are pursuing here is waste for disposal. That is a
18 different process, and we will draw that distinction
19 of clarification.
20 During these kinds of meetings, you know,
21 you often have what I will call "ah ha" moments. Hmm,
22 wow. I really want to think about that. The staff
23 really needs to think more about that. There were
24 several today that I heard.
25 And, Bill, I will apologize in advance,

1 because I couldn't possibly capture them all. But
2 there is a few that came to mind.
3 This question of environmental analysis.
4 Putting it differently -- as Chip pointed out when he
5 was addressing the possible paths forward, be it
6 guidance, a policy statement, or a rulemaking, he
7 pointed out that if we do a rulemaking on this issue
8 that an environmental impact statement is required as
9 defined in NEPA. That is true.
10 That is not the case for a policy
11 statement. That is not the case for guidance
12 development. But the "ah ha" moment for me was the
13 staff should ask itself, "What are we required to do,
14 as compared to what we should do, about environmental
15 analysis?" And we are going to take a good look at
16 that.
17 This notion of the fact that the
18 concentration limits for the Class A waste that would
19 end up going to presumably the Clive site as a result
20 of blending, and the fact that that wasn't evaluated
21 at the time the final environmental impact statement
22 was performed for Part 61, leads me to raise the
23 question in my own mind, well, neither were a lot of
24 other variables that were defined in Part 61 FEIS at
25 the time.

1 And so the question that we should ask
2 ourselves I think as a staff and as an agency is:
3 what and when should we do something about the
4 environmental impact statement associated with
5 Part 61? Do we do that at this point to some degree,
6 as relates to this topic called "blending"? Do we
7 wait and do that when we delve into the Part 61 larger
8 rulemaking that was discussed several times today?
9 So, clearly, I am struck by the fact that
10 the final environmental impact statement for Part 61
11 is 30 years old or so. Many things have changed
12 operationally. It is an environmental impact
13 statement that, in my view, cries out for
14 reexamination. So when do we do that? And how do we
15 do that?
16 The point was made today that there needs
17 to be a thorough examination of all the related issues
18 associated with blending. I think that's a very fair
19 statement. We want to provide the Commission with a
20 very thorough paper, so that the Commission will fully
21 understand all of the implications and the associated
22 variables around this topic called "blending."
23 And one of the things we will try to do in
24 that paper is to make sure that all of these
25 collateral issues, transportation being one of them

1 that generated a lot of discussion today, and others
2 are indeed examined.
3 This question of classification, when to
4 classify, today our regulatory approach is about
5 classification for purposes of disposal. The topic of
6 blending is not changing the rules of the game. That
7 is the way that Part 61 is designed today --
8 classification for purposes of disposal.
9 If the agency was to seriously entertain
10 changing classification of waste upstream, as it would
11 refer to, in my view that would clearly require
12 rulemaking. That would clearly require a rulemaking,
13 because you would have to make adjustments to the
14 existing regulatory scheme in Part 61.
15 This question of policy. As we have said
16 today, we have the status quo. Comments were made
17 about the status quo. The possibility of restricting
18 blending or the possibility of allowing blending, and
19 more clearly allowing blending, under a risk-informed
20 performance-based approach -- those are the
21 possibilities that the staff has before it.
22 And regardless of what we decide to do,
23 picking up on Bill's comment, we need to be clear.
24 And picking up on the comment that I made at the
25 outset this morning, the agency needs to be clear

1 where we are on this issue. I think we need to be at
2 least as clear as we were on intentional mixing as
3 relates to decommissioning.
4 How do we do that? Well, we can do it
5 through guidance development. We can do it through a
6 policy statement, or we can do it through rulemaking.
7 And we have talked a lot today about the pros and
8 cons of those possible pathways.
9 The staff has to analyze what we have
10 heard today, coupled with the work we have done
11 already, and come up with a recommendation to the
12 Commission on how to proceed.
13 On the guidance for a moment, we have
14 already committed as a staff, and informed the
15 Commission and the Commission endorsed that approach,
16 in our low-level waste strategic assessment that we
17 would update and risk-inform the BTP. The BTP is a
18 complicated document. It is a dated document. And
19 the staff felt, when it was pursuing and developing
20 the low-level waste strategic assessment back in the
21 '06/'07 timeframe, that document needed to be updated.
22 I mentioned in my comments this morning
23 that that is still on our -- that is still on our
24 scope. That is still in the queue to do that. But we
25 won't do that until the Commission takes a position on

1 the vote paper that we will provide to the Commission,
2 which we are currently obligated to do by the end of
3 April.
4 That means, then, that the adjustments to
5 the branch technical position would begin to take
6 place and be worked by the staff, presumably toward
7 the end of this year. We have planned, and would
8 continue to plan, to have a workshop or workshops as
9 part of that guidance change to the BTP. And perhaps
10 in one of those workshops you can help us better
11 define "operational efficiency."
12 So with that, I think I will stop. I do
13 want to comment, just compliment the entire staff that
14 took part today, Antoinette for being here. There is
15 an awful lot of work that goes into preparing for one
16 of these meetings. The staff today I think did a
17 yeoman's job. These issues are not easy. But long
18 before we got here today, a great deal of preparation
19 went into the meeting.
20 So I think from my perspective the meeting
21 was very successful. We got a lot of good input, and
22 we have an awful lot to digest now.
23 So we thank you. Thank you very much.
24 (Applause.)
25 (Whereupon, at 5:51 p.m., the proceedings in the

1 foregoing matter were concluded.)