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 Radioactive Waste Disposal Rulemaking

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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PUBLIC MEETING ON THE PROPOSED
LOW-LEVEL RADIOACTIVE WASTE
DISPOSAL RULEMAKING

+ + + + +

Tuesday, June 2, 2015

+ + + + +

Alabama Conference Center
Doubletree by Hilton
2100 Bush River Road
Columbia, South Carolina

+ + + + +

6:00 p.m.

BEFORE:

CHIP CAMERON, Moderator

NRC STAFF PRESENT:

BRANDON BAKER

LARRY CAMPER

CHRISTOPHER GROSSMAN

LISA LONDON

GREGORY SUBER

PRIYA YADAV

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Adjourn	

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P R O C E E D I N G S

1
2 MR. CAMERON: Good evening, everyone. My
3 name is Chip Cameron, and I want to welcome all of you
4 to the public meeting tonight, and tonight's topic is
5 a proposed rule on the disposal of low-level
6 radioactive waste. This rule has been proposed by the
7 United States Nuclear Regulatory Commission, and the
8 NRC is the agency who is hosting the meeting tonight.

9 And we're going to try not to use many
10 acronyms, but one that we will use is NRC. And I just
11 want to through a few meeting process topics, so that
12 you know what to expect this evening. And it's my
13 pleasure to serve as your facilitator tonight, and in
14 that role I'll try to help all of you to have a
15 constructive meeting tonight.

16 And I may ask you to clarify something that
17 you've said or to make a suggestion that would remedy
18 any issues that you might have with the proposed rule.

19 I'd like to talk about the objectives for
20 the meeting, the format for the meeting, the ground
21 rules, and then to introduce the NRC staff who will be
22 talking to you tonight.

23 In terms of objectives, the first one is
24 for the NRC to provide you with clear information on
25 what is in the rule, and to answer your questions

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1 clearly and fully.

2 Second objective is for the NRC staff to
3 listen to your comments on the proposed rule. And we
4 are transcribing the meeting tonight, and Brenda is our
5 stenographer court reporter back here, and that
6 transcript will be your record and the NRC's record of
7 what transpired tonight. And anything you say tonight
8 will be considered a formal comment on the proposed
9 rule.

10 The NRC staff will be telling you how to
11 also submit written comments if you want to supplement
12 anything that you say tonight, and we'll get to that
13 in a few minutes.

14 I should note that the NRC staff will be
15 answering your questions, but when you're commenting,
16 they're not going to be discussing your comments, but
17 they will carefully consider your comments when they
18 prepare the final rule. But we might have time for some
19 discussion of your comments; we'll see when we get
20 there.

21 In terms of the format, we have several NRC
22 speakers. After each one we're going to go out to you
23 for questions and comments. And I should also note
24 that we have people on the phone that are phoning in,
25 so we'll go out to them also to see what they have to

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1 say.

2 In terms of ground rules, if you have a
3 question or comment when we get to a comment period,
4 just give me a signal, and I'll bring you this cordless
5 microphone, and if you could introduce yourself and
6 make your comment or ask your question, we'll get to
7 you.

8 I would ask that only one person speak at
9 a time so that we could get a clean transcript, so that
10 Brenda will know who's talking, but, mostly
11 importantly, so that we'll give our full attention to
12 whomever has the microphone at the time.

13 I would ask you to try to be brief. I'm
14 not going to set a time limit tonight, because I think
15 we're going to have plenty of time. But I do want to
16 make sure that we get to everybody in the room who wants
17 to talk, and everybody on the phone who wants to speak.

18 So I may have to ask you to finish up, and
19 I always add this now, is that being brief also applies
20 to the NRC staff, also.

21 Let me introduce -- why am I introducing
22 Larry Camper first after I said that? Because he is
23 the division director, and he's going to give you a
24 welcome, an overview from the NRC, and Larry's division
25 is the Division on Decommissioning, Uranium Recovery,

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1 and Waste Programs.

2 After Larry's done, we'll go out and see
3 if you have any questions on Larry's presentation, then
4 we're going to go to Priya Yadav, and Priya is going
5 to tell you about the rulemaking process, and Priya is
6 a project manager in Larry's division.

7 Then we'll go for questions, comments,
8 then we're going to get to the heart of the matter. We
9 have Chris Grossman from Larry's division, and Chris
10 is an expert is performance assessment, and he's going
11 to go through the primary topics in the proposed rule.

12 After each of those topics -- he may have
13 five or six slides and also some questions at the end
14 of each topic to stimulate your interest. We'll go out
15 to you for a discussion of that topic; then we'll go
16 on to the next topic.

17 And as I said, we'll be going to the phones
18 through all of that. And we do have the chief of the
19 Low Level Waste Branch at the NRC in Larry's division,
20 and that's Gregory Suber, who's right back there at the
21 back of the room.

22 And, Larry, I guess we're ready if you're
23 ready.

24 MR. CAMPER: Well, welcome, everyone.
25 It's good to see so many familiar faces, friends and

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1 colleagues. Thanks for coming out tonight to take part
2 in this important process as part of this rulemaking.

3 This is the fourth public meeting that
4 we've had, plus a webinar. Let's see; we had it at
5 headquarters; we did Austin. This is the third; this
6 is the third public hearing, and a webinar. So it's
7 the fourth public interaction.

8 And we wanted to hold it here in South
9 Carolina because obviously the Barnwell site's in
10 Barnwell County. We held our last one in Austin,
11 Texas, because of the WCS site. And so we will be going
12 to Utah, and we will be going to Washington state,
13 because that's where the operating facilities are. So
14 we want to make sure we touch base with each one of the
15 states where they have an operating facility.

16 There's a set of slides for my
17 presentation; there's a package. Make sure that you
18 get that, because there's a lot of background
19 information. There's been a lot of Commission
20 direction around this rulemaking and much staff
21 interaction with the Commission.

22 During the original meeting that we had
23 back in April at headquarters, I went through all that
24 Commission background in some detail. I didn't do that
25 in Austin, I'm not doing it tonight, because you have

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1 all that information in the slide package, in the
2 interest of time.

3 But if you want to kind of go through and
4 track the various communications along the way between
5 staff and the Commission, you should read that
6 background information.

7 And of course feel free to -- if you have
8 any questions, you can contact me or my staff, and we'll
9 certainly try to answer your questions.

10 Next slide, please. Okay. In terms of
11 our objective, what is the objective? Well, it's
12 fairly straightforward. We want to discuss the
13 proposed revisions to the Commission's low-level
14 radioactive waste disposal regulations in our 10 CFR
15 Part 61. There's a commensurate part in the South
16 Carolina regulations as well.

17 We want to encourage the submittal of
18 comments on the proposed rule language and answer
19 questions and receive comments from the public. So
20 fairly straightforward. As Chip said, you are on
21 record tonight. The staff will be going back and
22 looking at all these comments that we hear tonight, but
23 we also encourage you, of course, to provide written
24 comments in a formal fashion, and Priya, during her
25 presentation, will discuss that process with you in

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1 some detail. So we do encourage you, by all means, to
2 provide comments on the various components of the
3 proposed rulemaking.

4 Next slide: Why are doing this
5 rulemaking? Well, first let me say, with regards to
6 the existing regulations in Part 61, we believe they
7 are indeed adequate to protect public health and
8 safety. The same thing holds true for the commensurate
9 regulations in South Carolina regulations.

10 So the existing set of regulatory criteria
11 is adequate to protect public health and safety. In
12 addition to that, if one were to go look at the
13 requirements in Part 61 and compare to the operational
14 realities that are taking place at the four operating
15 disposal facilities in the United States, you would
16 find that the operators and the states that oversee
17 those sites have gone well above the fundamental
18 requirements of Part 61.

19 For example, if you go to Barnwell, you'll
20 find they're using concrete containers to dispose the
21 waste in the waste cells. That wasn't a requirement
22 in Part 61.

23 Each of the states have put in place
24 requirements well in excess of Part 61, so I don't want
25 any member of the public, especially, to have the

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1 impression that because we're doing a major rulemaking
2 that the existing rule was not adequate to protect
3 public health and safety, because we believe that it
4 is.

5 But we're doing it to ensure that low-level
6 waste streams that are significantly different than the
7 low-level waste streams that were considered in the
8 current Part 61 can be addressed and disposed of in a
9 manner that fully protects public health and safety.

10 These are waste streams that were not
11 analyzed at the time that Part 61 was put in place back
12 in 1982, when it was finalized, because these waste
13 streams have emerged over time.

14 Next slide: This slide is designed to
15 give you some context. I know that many of you in this
16 room follow the Part 61 rulemaking in painstaking
17 detail, but some of you look at it from time to time
18 and everywhere in between.

19 So what I wanted to do in this slide was
20 to put some context around this rulemaking so we all
21 have an equivalent understanding at the moment.

22 This rulemaking started out, as the slide
23 points out, to address the disposal of large quantities
24 of depleted uranium. In 2005 there was an adjudicatory
25 process -- that's a hearing -- that took place around

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1 the licensing of the Louisiana Energy Services facility
2 in New Mexico.

3 And at that time there were contentions
4 filed with regards to the disposal of large quantities
5 of depleted uranium, and a contention that was filed
6 was that depleted uranium is not suitable for
7 near-surface disposal.

8 And so the Commission, when it completed
9 the hearing process, sent a staff requirements
10 memorandum to the staff and said, Outside of the
11 adjudicatory process, take a look at the regulations
12 under 61.55 and determine whether any modifications of
13 those regulations are needed or not.

14 So the staff undertook an analysis to
15 answer the question that had been raised in the
16 contention. We felt that was a good place to start:
17 Is depleted uranium suitable for near-surface
18 disposal?

19 And we started there because we knew that
20 despite the contention that had been filed, in the year
21 200 the Department of Energy had undertaken and
22 completed a programmatic environmental impact
23 statement that looked at the disposal of four forms of
24 depleted uranium in near-surface facilities -- that's
25 within 30 meters of the earth's surface, near surface

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1 in our country -- and determined that it was suitable
2 for near-surface disposal.

3 So that's where we started our analysis of
4 that question. The staff determined that it was
5 suitable for near-surface disposal, albeit under
6 certain conditions: deeper disposal, more robust
7 radon barrier to protect against the radon emanation
8 coming from depleted uranium and so forth.

9 And so as we were doing the analysis,
10 that's what got this started, the disposal of large
11 quantities of depleted uranium. And when we did our
12 analysis at that time, the staff considered the fact
13 that there was on the order of 700,000 metric tons of
14 depleted uranium on the pads at Portsmouth and Paducah.
15 We knew that there was going at that time one or more
16 enrichment facilities that would be licensed. So our
17 analysis addressed in excess of 1 million metric tons
18 of the disposal of depleted uranium.

19 Well, as we were doing that analysis, we
20 recognized -- there were findings where we came to
21 realize that there were other things in play that had
22 not been analyzed, and I have a slide later that will
23 show you in some detail what those things were.

24 And with that recognition, the rulemaking
25 began to morph somewhat and went beyond only the

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1 disposal of large quantities of depleted uranium, which
2 was the initiating factor.

3 Along the way, as I mentioned earlier,
4 there was substantial Commission direction. I think
5 we got two or three rounds of direction from the
6 Commission. The staff had put our language that we
7 were working with out for public awareness. We had a
8 couple of meetings on it, two or three meetings, as I
9 recall.

10 And the Commission was aware of the staff
11 language, and even before we sent our proposed rule up
12 the first time around, we got Commission direction to
13 make some adjustments. And the Commission can do that;
14 it can direct the staff to address policy anytime it
15 wants to in the process.

16 And so there's been a lot of direction from
17 the Commission, a lot of interest by commissioners, and
18 the ultimate product that you see in this proposed rule
19 that we'll be discussing tonight in some detail really
20 comes from a great deal of specific Commission
21 direction, and we're doing our best to ensure that we
22 fulfill that Commission direction and ask the types of
23 questions that they wanted us to ask.

24 So we do have a proposed rulemaking. We
25 got the proposed rulemaking out in March. We had our

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1 first public meeting following the Waste Management
2 symposium meeting in Phoenix, we then had the other
3 meetings that I cited earlier. And this rulemaking
4 process will continue; it will be completed, I would
5 assume, probably next summer.

6 We owe the final rule that the staff
7 proposes back to the Commission for its final
8 deliberation next summer, and then the Commission will
9 react to that final proposed rule, and so this matter
10 should conclude sometime next year, most likely. But
11 that could change, based upon Commission direction.

12 Compatibility is an issue that has
13 surfaced in this particular rulemaking, and some of you
14 are acutely familiar with compatibility and what it
15 means, and maybe some of you are not.

16 But in our program we have a relationship
17 with agreement states whereby, under agreement signed
18 by the governor of that state and our chairman, certain
19 authority is imparted to the states to carry out
20 responsibilities and regulatory actions that we are
21 charged with under the Atomic Energy Act.

22 Well, part of that process is to ensure
23 that the regulations that the state produces are
24 compatible and adequate, and we go through a review
25 process to do that. And the compatibility part of it

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1 assigns the degree to which the specifications in our
2 regulations have to be the same or essentially the same,
3 or there's more latitude to protect public health and
4 safety; there's a spectrum of criteria in our
5 compatibility approach.

6 But this particular rule -- the
7 significant components of this rule have been
8 identified as compatibility B; that's what the
9 Commission wants them to be. That means they need to
10 be essentially the same.

11 And when Chris goes through some of his
12 talk tonight, you'll see things such as the period of
13 compliance, the performance assurance period. These
14 things have been assigned compatibility B. The waste
15 acceptance criteria is compatibility B. It has to be
16 essentially the same.

17 The agreement states are always -- we
18 never do a rulemaking in which the agreement states are
19 not sensitized to and concerned about compatibility,
20 and that's because in their world of conducting
21 business, in many cases they have to interface with a
22 legislature to change their regulations. Sometimes
23 legislatures don't meet every year. There can be
24 administrative processes in place that make it very
25 difficult. So the states are always concerned about

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1 what compatibility is assigned.

2 And in this case, because the rule requires
3 that all significant components be compatibility B, the
4 states are watching it very closely: South Carolina,
5 Utah, Washington, Texas, which is another reason why
6 we're going to each of those states and conferring with
7 the regulators.

8 Agreement state applicability is an issue
9 that's arisen, and the reason that it has arisen -- I
10 have a slide later that will show you this in a little
11 more detail, but the reason that it's arisen is because
12 when the rule was done back in -- and finalized back
13 in 1982, there was some language in the rule that
14 provided certain flexibility on a case-by-case basis,
15 if you will.

16 Now, all the states that had operating
17 facilities at that time ultimately adopted Part 61 by
18 1988. But now we fast-forward 30-some-odd years
19 later, and we're looking at unanalyzed waste streams,
20 and the Commission's expectation is that this new rule
21 that we're doing, this change, will be applicable to
22 all of the operating states that are regulated by the
23 agreement states.

24 So state applicability is an issue that's
25 emerged with some concern as well, and there is an

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1 outstanding issue, and I'll touch upon this lightly
2 and, again, draw your attention to the package that I
3 have there, because all the Commission's specific
4 language is there.

5 But when we communicated with the
6 Commission back in 2008 in a SECY -- that's a Commission
7 paper; that's how the staff talks to the Commission
8 about policy matters -- we made a recommendation in
9 that paper, SECY-08-0147, that we felt that there was
10 a modification needed to the regulation, and that would
11 be to require a site-specific performance assessment.

12 The Commission agreed with us and directed
13 the staff to do that, but the Commission also at the
14 time gave the staff another direction, which was a
15 variation, a slight variation, of our option 4 in that
16 paper, which was to risk-inform the waste
17 classification tables, bringing to bear current ICRP
18 methodologies and so forth, and specifically determine
19 what class of waste is depleted uranium.

20 So we still have that assignment out there,
21 and that assignment they told us to budget for doing
22 that in the future. Now, along the way that direction
23 has been modified by the Commission somewhat.

24 For example, the Commission said, Don't do
25 anything about that rulemaking until you complete the

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1 rulemaking that's ongoing now. We do want you to go
2 out and gather comments on the need for another
3 rulemaking and then come back to us at some point when
4 this rule is finished with a Commissioner's assistance
5 note, a CA note it says in the SRM, and tell us what
6 you heard and what are the pros and cons about doing
7 another rulemaking based upon what you hear.

8 So we will address that topic when we go
9 back to the Commission with the final rule for
10 consideration by the Commission and share with the
11 Commission what we've heard about that along the way.

12 And the real reason why the Commission has
13 that on its mind is it goes something like this: If
14 you do a rulemaking that requires the conduct of a
15 site-specific performance assessment for all
16 radionuclides, including depleted uranium, do you then
17 need to do another rulemaking that would in fact
18 determine what class of waste depleted uranium is?
19 Because your site-specific performance assessment for
20 a given waste disposal facility is going to tell you
21 whether or not depleted uranium can in fact be disposed
22 of in that facility or how much of it can be disposed
23 of in that facility, in what configuration, so forth
24 and so on. So what is the efficacy of doing another
25 rulemaking?

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1 Now, the last point, though, is there will
2 be an outstanding issue when we complete this
3 rulemaking, because we recognize that in order for some
4 people, for members of the public, to fully comment upon
5 whether or not you need another rulemaking, they got
6 to see the final rule; they got to be able to see the
7 words that come to rest in the final rulemaking so they
8 can then comment on that question more thoroughly and
9 more informed.

10 So when we complete this rulemaking, we'll
11 do something as a staff to get at that issue, whether
12 it's an FRN that we will put out that will raise some
13 questions, or will it be something that the Commission
14 will specifically direct us to do once they review the
15 proposed rule. That's a to-be-determined, but there
16 will be something else to get at that question more
17 thoroughly.

18 Next slide, please. The next slide, if
19 you look about half to three-quarters of the way down,
20 I draw your attention to the sentence that says,
21 "Applicability of the requirements in this part to
22 Commission licensees for waste disposal facilities in
23 effect on the effective date of this rule" -- which was
24 1982 -- "will be determined on a case-by-case basis and
25 implemented through terms and conditions of the license

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1 or by orders issued by the Commission."

2 This issue has been raised by at least one
3 of the agreement states and echoed to some degree by
4 other agreement states, that we think that the same
5 flexibility that was in place at that time should be
6 in place with this rulemaking as well.

7 Now, the staff did not change 61.1(a) in
8 our proposed rule; however, the expectation from the
9 Commission is that this rule will affect the four
10 existing operating facilities that are regulated by
11 agreement states.

12 So that is a difference, and that does give
13 some concern, and I encourage the agreement states that
14 have concerns about that to comment during the comment
15 period. Please do make sure that the Commission hears
16 your concerns around that issue.

17 And the essence of the issue is in these
18 agreement states that have accepted depleted uranium,
19 for example. They did it a long time ago; they did it
20 under then-prevailing regulations. The cells where
21 the waste were disposed have been closed, and so there
22 is some concern as to do we really need to do this?

23 So the way to handle that at this point in
24 the process is to comment about it and make sure the
25 current Commission hears your concerns.

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1 Next slide. This gets at the point that
2 I just made, that it would affect the -- all four of
3 the sites that are operated by agreement states.

4 Next slide. I've kind of touched upon
5 this along the way, but this slide puts it together sort
6 of in a pointed fashion. The rationale for the
7 rulemaking is to address the disposal of large
8 quantities of depleted uranium, especially from the
9 enrichment facilities.

10 It is interesting that not much disposal
11 of depleted uranium has taken place thus far. There
12 has been some, but not a lot, but none, really, was
13 envisioned with Part 61 was created all those years ago,
14 between 1979 and 1981.

15 It's also interesting that if you go abroad
16 and you talk to other -- to regulators across an
17 international circle, if you will, when you raise the
18 question of depleted uranium, they look at you and say,
19 Well, we really don't have any regulations about
20 depleted uranium, because in our view depleted uranium
21 is an asset that at some point as a function of the price
22 of uranium will in fact be converted so that it can be
23 used to create fuel pellets. So it's really not waste;
24 it's an asset.

25 And we recognize that, but in the United

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1 States we have a little bit different view about this
2 matter, because we don't reprocess, obviously, and have
3 those technical capabilities right now.

4 So depleted uranium in large quantities
5 was one of the reasons for addressing this. I think
6 I made that point pretty clear earlier. There has been
7 considerably more low-level waste from DOE operations
8 than was envisioned for commercial disposal at the time
9 Part 61 was created.

10 Certain waste forms and volumes have
11 emerged that weren't considered at the time the
12 original Part 61 was completed, and the concept of
13 blended low-level waste has emerged in the recent past,
14 just in the last few years, and for those of you who
15 don't work in this circle every day, blended waste means
16 when we take Class A -- when an operator takes Class
17 A waste, Class B waste, and Class C waste -- most likely
18 resin filters and so forth -- and blends them so that
19 the concentration value is all Class A waste.

20 So that wasn't evaluated at the time Part
21 61 was done, and then in developing this rule we try
22 to be comprehensive, if you will, recognizing that new
23 technologies might generate unexpected low-level waste
24 streams in the future, whether it be from reprocessing
25 or it be from molybdenum production to create medical

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1 isotopes and that type of thing, then we don't have to
2 come back and keep doing yet another rulemaking and yet
3 another rulemaking, so it was designed to be
4 comprehensive in nature.

5 Next slide, please. This is the slide
6 that depicts the various public interactions that I've
7 spoken about. Obviously we're in Columbia tonight;
8 we'll be going to Richland, Washington on June 9, and
9 then Salt Lake City on June 10, and then I alluded to
10 post-rulemaking actions that may present themselves.

11 Again, I draw your attention to the package
12 of slides that we have out there for my presentation.
13 There's a lot more background information in there, but
14 I wanted to try to keep this as brief as possible and
15 not get into all that.

16 But if you go back and read the transcript
17 from the April meeting, which we had a panel at
18 headquarters, you'll find that we -- I went through
19 each of those directions in some detail and we discussed
20 them in some detail.

21 So I'll stop there.

22 Chip, thank you.

23 MR. CAMERON: Okay. Thank you, Larry.

24 Here in Columbia are there any questions
25 for Larry on the overview presentation?

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1 Yes, sir? And just introduce yourself to
2 us, please.

3 MR. BENJAMIN: Thank you, Chip. My
4 name's Mike Benjamin. I'm director of Barnwell
5 operations for Energy Solutions.

6 Thank you, Larry. Good presentation.

7 Going back to one of your slides, the
8 applicability requirements, for a waste disposal
9 facility that has a license in effect on the effective
10 date of this rule, what requirements may be considered
11 on a case-by-case basis? And answer that as if there
12 were in reality a low-level waste disposal in operation
13 at a non-agreement facility.

14 MR. CAMERON: Okay. Larry, is that
15 clear?

16 MR. CAMPER: Well, fundamentally the
17 reason that -- if you go back and you read the comments
18 that were discussed, the statements of consideration
19 around this component, 61.1(a), there were comments
20 raised recognizing that there were already-existing
21 facilities, and much of the siting criteria and so forth
22 had already been addressed prior to the regulation
23 becoming a reality.

24 So the Commission, in reaction to those
25 comments, modified the language to include the language

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1 that I shared with you in the slide. And so as it turns
2 out, though, as a matter of reality, the case-by-case
3 considerations that were envisioned as a result of the
4 comment that generated the regulatory posture became
5 almost a moot point, because all of the states adopted
6 Part 61, essentially in whole cloth.

7 There were a couple of exceptions; for
8 example, Utah did not adopt 61.5(a), and there were some
9 other examples as well, but that one comes to mind.

10 So that's why the words were in there, and
11 as a practical matter, that's what happened in terms
12 of states adopting Part 61.

13 MR. CAMERON: And are you looking for an
14 example, perhaps, of how that might operate in terms
15 of an agreement state, and you also mentioned how this
16 would work with non-agreement states. Maybe we better
17 just see what else you have on this.

18 MR. BENJAMIN: Yes. I'd like to see
19 an -- or hear an example, given the scenario that the
20 disposal facility was in a non-agreement state, thus
21 the Commission was the regulatory device.

22 MR. CAMPER: Well, but, I mean, it doesn't
23 exist. I mean, the rule, when it was put in place at
24 the time, says "in effect on the effective date of this
25 rule." There was no NRC-licensed facility at that

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1 time, and there's no NRC-licensed facility now.

2 So it was really designed to provide
3 flexibility to the then-existing states and their
4 operators for the reason that was raised in the comment
5 period.

6 Now, the thing that's interesting, too, is
7 when this first came up during a public meeting in
8 April, when I first heard this, there's clearly an
9 expectation in the announcement of the rule or there's
10 an expectation by the Commission that this would apply
11 to the existing operating sites.

12 The first question that came to my mind
13 when I read this was, Why didn't we modify 61.1(a) in
14 our proposed language to make it very clear that this
15 provision was a at-that-time provision, because it
16 raises confusion, on concern, at least, that, well,
17 shouldn't that apply now?

18 But if you go back and you read the
19 statements of consideration, it's pretty clear that the
20 reason that was put in there was because of a
21 then-existing site.

22 And by contrast, now we have 30 years of
23 operating experience or so, and the real crux of the
24 matter -- and it's a tough question -- is that we have
25 these unanalyzed waste streams that we need to

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1 consider.

2 MR. CAMERON: Okay. Thank you.

3 And thank you for that question. I just
4 want to underscore the fact that this is a proposed
5 rule, and Priya is going to talk about that process,
6 but if the NRC -- when they evaluate the comments on
7 the proposed rule, they may change some of the items
8 that are in the proposed rule now. Correct, Larry?

9 MR. CAMPER: That's correct, Chip. They
10 may. And I would specifically point out that there
11 were certain items the Commission asked us to solicit
12 comments on, and one of them in particular was
13 compatibility B.

14 So there was a recognition by the
15 Commission that there are some sensitivities in this,
16 because all four of the existing sites are operated by
17 operators in agreement states, and so by all means, do
18 comment on the contents of the rule that pose the most
19 problems operationally or in terms of compatibility and
20 so forth.

21 MR. CAMERON: Okay. Let's try the
22 phones, and then we'll see if anybody else in the
23 audience has something.

24 Josh, can you see if anybody on the phone
25 has a question for Larry?

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1 THE OPERATOR: Thank you. It's Jennifer.

2 MR. CAMERON: Oh, hi, Jennifer.

3 THE OPERATOR: Hello.

4 If you'd like to ask a question, please
5 press *1 on your touchtone phone, unmute your phone,
6 and record your name clearly.

7 If you need to remove your question, please
8 press *2. Again, to ask a question, press *1.

9 Please stand by. It will take a moment for
10 those questions to come through.

11 (Pause.)

12 THE OPERATOR: Our first question is from
13 Mary Olson.

14 Go ahead, ma'am. Your line is open.

15 MS. OLSON: Thank you.

16 And thank you for holding this meeting. I
17 regret not being there in the room with you. I want
18 to thank Mr. Camper for mentioning the word
19 "reprocessing" under new technologies and note that
20 that word does not appear in the proposed rule text on
21 a PDF word search, and I think that's unfortunate,
22 especially because some of the DU that you're talking
23 about -- as a matter of fact, a very large amount of
24 it -- was contaminated with previous reprocessing
25 products, including plutonium, at Paducah for decades.

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1 And I'm wondering if you're factoring that
2 into your assumptions around DU today.

3 MR. CAMERON: Okay. Thank you, Mary.
4 Larry?

5 MR. CAMPER: Well, yes. When -- I
6 mentioned when we undertook the analysis in 2008, that
7 analysis did consider the fact -- if I understood your
8 question correctly, did consider the fact that at the
9 time -- currently there's on the order of 700,000
10 metric tons of depleted uranium on the pads at
11 Portsmouth and Paducah.

12 And in addition to that, the staff made
13 certain assumptions based upon at least two additional
14 operating enrichments facilities being in place. One
15 was the URENCO facility in New Mexico, and the other
16 was the -- was to have been the AREVA facility at Eagle
17 Rock in Idaho.

18 And in our analysis we evaluated in excess
19 of 1 million metric tons of depleted uranium that
20 conceivably would need to be disposed of over a period
21 of time. That's a lot of depleted uranium.

22 Now, how much of that will ultimately be
23 disposed of remains to be seen. How much will actually
24 be created because of the enrichment work that goes on
25 remains to be seen.

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1 But that's what our analysis considered
2 when we did that back in 2008, and then we made the
3 recommendation based upon that analysis, realizing
4 that depleted uranium was suitable for near-surface
5 disposal, albeit under certain conditions; that we felt
6 that the best way --

7 MS. OLSON: I'm sorry. I couldn't quite
8 hear. Did you say you did consider highly radioactive
9 DU?

10 MR. CAMPER: We did. Oh, sure. We
11 considered the fact that there's -- we analyzed in
12 excess of 1 million metric tons of depleted uranium
13 that conceivably may need to be disposed over the next
14 decades, depending upon whether or not it becomes waste
15 or not, what DOE decides to do with depleted uranium
16 at Paducah and Portsmouth, and how much depleted
17 uranium the enrichment facilities create.

18 But, yes, we did analyze the potential for
19 disposal of in excess of 1 million metric tons.

20 MS. OLSON: Sir, I'm not talking about the
21 volume. I'm talking about contaminated DU that's not
22 just uranium oxide. I'm talking about Paducah being
23 heavily contaminated with the post-reprocessing
24 depleted uranium during the Cold War, highly
25 radioactive DU.

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1 Are you factoring that?

2 MR. CAMERON: Okay, Mary. We're going to
3 go to Chris Grossman to try to give you an answer to
4 that.

5 MS. OLSON: Okay. Thank you. Sorry.

6 MR. GROSSMAN: Hi, Mary. I'll make sure
7 I move the mic forward so you can hear me.

8 MS. OLSON: Yes.

9 MR. GROSSMAN: This is Chris Grossman.
10 So in our analysis we did recognize that some of the
11 DU would be contaminated with other radioactive
12 elements than you'd see in traditional kind of depleted
13 uranium from an enrichment facility because of the
14 potential origin from DOE facilities. So there was
15 some recognition of that potential contamination.

16 MR. CAMERON: Okay. And --

17 MR. GROSSMAN: Let me -- I'm sorry, Chip.

18 That information on that analysis goes
19 back, as Larry mentioned, to the Commission paper that
20 we sent to the Commission, the 08-0147, so you should
21 find that information associated with that document.

22 MS. OLSON: Thank you.

23 MR. CAMERON: Okay. And --

24 MR. CAMPER: Yeah, Mary, there's an
25 enclosure for that document that goes into quite some

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1 detail, actually.

2 MR. CAMERON: Okay. Thanks.

3 And, you know, Mary, I'm sure we'll be back
4 out to you on other issues than possibly this one.

5 MS. OLSON: That's fine. Thank you.

6 MR. CAMERON: Thank you.

7 Jennifer, anybody else?

8 THE OPERATOR: Yes. We have another
9 question from John Greeves.

10 Go ahead. Your line is open.

11 MR. GREEVES: Yeah, this is John Greeves.
12 Can you hear me?

13 MR. CAMERON: Yes.

14 MR. CAMPER: We can hear you, John.

15 MR. GREEVES: Okay. I just want to get
16 back to the discussion about 61.1(a). And, Larry, I've
17 raised this in previous meetings. I have a different
18 view.

19 And what I'm hearing is the statement that
20 the Commission has an expectation that the
21 applicability of the requirements -- the new
22 requirement doesn't get affected by the language in
23 61.1(a), and I would take exception with that.

24 My understanding of the intent -- and I was
25 there when it happened -- was that this provision gave

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1 flexibility to the Commission, the agreement states,
2 and licensees that new requirements that were going
3 into place that post-date almost a decade of service
4 would only be applicable on a case-by-case basis.

5 And when you explained it was that this new
6 rule wouldn't have that advantage of flexibility. And
7 it's an important point, and I think it's
8 going -- you're going to get some comments on it, and
9 I just want to make that point, that to hold decided
10 states, where you've been operating for decades, to
11 some of these rather difficult, in some cases, new
12 requirements without that flexibility I think is a
13 concern.

14 And I'm just going to leave it at that, that
15 it needs to be carefully evaluated, and I don't agree
16 with the notion that the language that's here now only
17 applied to the rule in '82. I think this language
18 applies to any new rule that comes into play. That's
19 just my view.

20 MR. CAMPER: Well, thank you, John.

21 MR. GREEVES: I wanted to share that with
22 the audience and you.

23 MR. CAMPER: Thank you, John. Of course,
24 you are right. We've discussed this during the April
25 meeting, and you and I discussed it a couple of times.

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1 And I certainly understand and appreciate your views.

2 The staff's interpretation of the language
3 in 61.1(a) that says "on the effective date of this
4 rule" is meant to apply to that rule that was enacted
5 in 1982.

6 This is the first major revision to this
7 rule since that time. There was a revision in '88, '89,
8 when the Commission added 61.55(a)(24) that addressed
9 a pathway for disposal of GTCC waste rather than Class
10 C waste.

11 But this is the first major revision, but
12 I would say this: Commenting on it, welcome. By all
13 means, please do so. And I think the suggestion that
14 I would make when developing comments about this
15 particular issue is to focus upon why that case-by-case
16 consideration would be appropriate now when one
17 compares a set of circumstances in place at the
18 time -- that being operating facilities that were
19 already in place prior to the rule becoming a
20 reality -- as compared to the fact that we are now
21 trying to address unanalyzed waste streams.

22 And so I think that should be the essence
23 of the comment.

24 MR. GREEVES: We will probably go on and
25 we hope we'll have some more time, but there's a concern

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1 about removing the flexibility of all the parties to
2 that factor, and I think that concern is just as valid
3 now as it was in '82, when you were imposing new
4 burdensome rules on people.

5 MR. CAMPER: No, no. I understand your
6 view, and I'm just saying I think the best thing to do
7 is to make that case within your comments. I think that
8 would be the most effective thing to do.

9 MR. CAMERON: Thank you, John.

10 Thank you, Larry.

11 Jennifer, anybody else?

12 THE OPERATOR: There are no further
13 questions.

14 MR. CAMERON: Okay. Thank you.

15 Well, let's go to Priya Yadav to talk about
16 the process. And we are going to go through a series
17 of specific topics on the rules, so if there's more on
18 this, we will make sure we come back to it.

19 Go ahead, Priya.

20 MS. YADAV: Sure. I just wanted to
21 everybody sitting in the room that we're having a couple
22 of issues with the webinar, people hearing in the mic.
23 So when you make a comment, if you can just make sure
24 to speak directly into the mic.

25 And I'm trying my best, everybody on the

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1 phones, to speak very clearly into the mic. So let us
2 know if you can't hear me, and we could turn up the mics
3 a little bit, maybe, for the handheld, if we can.

4 I'm Priya Yadav. I'm one of the project
5 managers working on Part 61. I'm the primary project
6 manager for the guidance document, so I work a lot with
7 Chris and Dave Esh, Cynthia Barr, all the technical team
8 working on the guidance document.

9 But I'm also one of the contacts for the
10 rule, along with Steve Dembek and Gary Comfort, so
11 you'll see our names on the slides and also on this
12 handout which I'll refer to a couple of times in terms
13 of who to contact.

14 I am going to talk about rulemaking in
15 general, and Larry kind of covered a lot of specifics,
16 and we're going to go to Chris later, and he's going
17 to talk about the technical content of the rule and
18 maybe a little bit about the guidance document.

19 So we'll talk about rulemaking in general,
20 talk a little bit about our guidance document, give the
21 timeline, how long the comment period is, where you can
22 get copies of all these documents, and then describe
23 the methods for submitting your comments.

24 Next slide. So why rulemaking?
25 Rulemaking is one of the ways to implement Commission

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1 policy. It's the preferred technique for implementing
2 Commission policy, as opposed to issuing license
3 conditions or specific orders to different entities,
4 because those apply kind of more to one licensee, one
5 entity.

6 So if we do a rulemaking, it makes
7 provisions generally apply to everyone, so that's the
8 preferred method right now for the Commission in terms
9 of regulating.

10 Rulemaking is a public process, so that
11 allow us to come out, having multiple meetings, talk
12 to all you, hear what you're concerned about, make it
13 part of the record, and then shape our rules and
14 regulations and our guidance document to incorporate
15 your thoughts and, we think, end up with a better, more
16 usable product.

17 So initially we issued preliminary rule
18 language in 2011, and we had some public meetings, had
19 public comments, and now we're in the proposed rule
20 language phase, so we had proposal language, and now
21 we're in the public process for that particular
22 language.

23 Rulemaking also lets us address lessons
24 learned. Things that we've heard from agreement state
25 regulators, things that we've learned from advisory

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1 committees, and addressing recommendations allows us
2 to kind of update our regulations.

3 And then as Larry said about Part 61,
4 specific to Part 61, while we're doing this rulemaking
5 is really to ensure that all low-level waste streams
6 are appropriately evaluated and can be disposed of
7 safely.

8 Next slide. So specifically the guidance
9 document, I just wanted to mention that we also have
10 the guidance document out there, put in a plug for my
11 large 400-page baby, in addition to my five-year-old
12 and my seven-year-old. I carry this around with me
13 wherever I go; he doesn't have to go to preschool or
14 kindergarten, but I still think of it dearly. Chris
15 and I have been working on this for very many years.

16 So the point of the guidance is really just
17 to accompany the rules and just try to give tools and
18 recommendations from our technical staff of how they
19 would do a performance assessment; how we would do an
20 intruder assessment; what kind of scenarios to include;
21 step-by-step flowcharts, diagrams, things like that.

22 So we'd also like to hear your comments on
23 the guidance document, and I wanted to mention, don't
24 be intimidated by the size; it covers a very large
25 number of topics.

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1 So if you have a lot of expertise in the
2 intruder assessment or the performance assessment, you
3 can just read a couple chapters in here and comment on
4 those specific chapters. So we have received partial
5 comments in the past; don't feel like you have to hole
6 yourself up and take time off work for a week to read
7 the whole thing.

8 We did have a webinar on May 20. It was
9 actually very well attended, so I know people are out
10 there reading it, and we value your comments.

11 Next slide. Okay. So this is the
12 timeline. This is where we're at right now
13 (indicating). On March 26 we issued *Federal Register*
14 notices, one for the rule and one for the guidance
15 document.

16 So right now we have 120-day public comment
17 period, so there's about seven weeks left for you to
18 submit your comments. We're doing our public meetings
19 now. So around August we'll start digesting those
20 comments, developing responses, and then developing a
21 final rule.

22 So depending on the complexity of the
23 comments, we might have to take a little longer, but
24 we're hoping to get that done in a year, and then August
25 2016 we will publish -- we'll submit the rule to the

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1 Commission, get their approval. If it's approved,
2 hopefully in a couple months, around fall 2016, we can
3 issue a final rule, and then that rule would become
4 effective in August 2017.

5 So we're hoping for a final rule in 2016,
6 and that rule would become effective in 2017 in a
7 non-agreement state. And then agreement states would
8 have an additional three years to put out their own
9 compatible regulations.

10 The guidance document is a little simpler;
11 we'll just incorporate your comments, try to develop
12 a good product, and then issue that when the final rule
13 is published.

14 Next slide. So I just wanted to point to
15 the website. I don't know, Brandon; do you think you
16 can pull it up?

17 This is nrc.gov website, and Stephen and
18 I have gone through great pains to try to keep our part
19 of it updated, so if you go -- and this is on your
20 handout here, one of the handouts that you picked up.
21 This is kind of the navigation path for how you can get
22 to the site that has all of these background documents.

23 So, Brandon, if you could go to Radioactive
24 Waste, Low-Level Waste Disposal, and then go down to
25 Site-Specific Analysis Rulemaking, right there on the

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1 right.

2 And so this particular section of the NRC
3 website has all of our stuff that we've been doing
4 really since 2009. So you can click on all these links
5 and it'll jump to all the documents that we've been
6 talking about.

7 So in March 2015, the FRNs that we
8 published -- can you click on that second link there?
9 So at the top there you'll see the FRN for the rule,
10 the FRN for the guidance document. You'll see the
11 proposed rule itself, the whole guidance document, 434
12 pages.

13 If you click on -- let's click on
14 the -- oh, my poster's up there. Thank you, Stephen.
15 The poster, the regulatory analysis.

16 Click on the guidance document.
17 Actually, that might take a while to load up; it's like
18 15 megs. Okay. That was good.

19 So in addition to the March 2015 things
20 that we put out, all the historical stuff that Larry
21 talked about in terms of all the Commission directions,
22 that's all on there.

23 So if you can go back one level -- okay.
24 So all the briefing materials for all the public
25 meetings, all the transcripts, if you click on that,

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1 it'll all come up. Right now we're on public meeting
2 number 5. We have the briefing materials up there, so
3 the slides you're seeing today are right up there.

4 And then if you go up to -- all the way up,
5 this is all the background stuff that Larry has just
6 been talking about; all the Commission -- the paper
7 that Chris just alluded to, SECY-08-0147. If you want
8 to see all the background technical work that has gone
9 into the forming of this rulemaking, you could click
10 on SECY-08-0147.

11 So we find that a useful tool. I think
12 it's the easiest way to get ahold of all the documents
13 that were published. Feel free to use it, and we will
14 keep updating it as we're going through all these
15 meetings.

16 These documents area also available in
17 ADAMS, and they're available on regulations.gov.
18 They're also available in Rockville, Maryland.

19 I did want to comment, at the website there
20 is a redlined version that shows the changes from what
21 we are proposing in March 2015 to the existing Part 61,
22 so if you want to see exactly what is changed, as opposed
23 to the FRN, which just kind of writes -- I think it
24 writes Part 61 -- I'm not sure; it doesn't show exactly
25 what was previous to what is today, so you can see

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1 exactly the redlines of what we are saying would change
2 from the original Part 61.

3 Okay. Next slide. These are the five
4 different ways to make comments on the rule, and there's
5 different techniques for commenting on the rule versus
6 commenting on the guidance document. So for the rule
7 there's five different ways. You can mail, email
8 regulations.gov, fax, or hand-deliver.

9 We are told that regulations.gov is the
10 most efficient way, so if you go into regulations.gov,
11 the comments get entered into ADAMS. They become
12 publicly available to everybody, so not just the NRC
13 staff, publicly available to everybody, but it gets
14 emailed to us directly, so the team that's working on
15 the regulations, we can see it very soon.

16 Next slide. These are the five specific
17 methods that you can submit comments on the rule.
18 Those are also on this handout: how to submit comments
19 on the rule; how to submit comments on the guidance
20 document.

21 So if you keep this with you, it has a
22 different address to mail things on the rule versus to
23 mail things on the guidance document. And one of the
24 important things is the docket number is different for
25 the rule versus the guidance.

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1 Since we had a preliminary rule come out
2 in 2011, the docket number starts with a 2011. So when
3 you make comments on the rule or the guidance document,
4 put the docket number in the subject line so it will
5 get routed appropriately.

6 So for the rule it's 2011. You can -- and
7 I did want to comment that the more specifics you can
8 provide in your comment, the more useful it will be to
9 us. So if you could state specifically what your
10 comment is, provide the rationale, provide any
11 supporting information, even make suggestions on any
12 revisions you would think appropriate, that would give
13 us kind of a little bit more guidelines of what
14 specifically would make a better rule, more usable rule
15 for you.

16 And as Chip said, we will go through the
17 transcripts and look at the issues that are being
18 brought up, but to really get your comment considered
19 and officially on record and get responded to, you have
20 to submit comments with one of these five methods on
21 the rule and one of these two methods on the guidance
22 document.

23 So the guidance document, there's really
24 only two methods: You can mail comments in, but the
25 mailing address is different, like I said.

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1 Regulations.gov is the easiest way, most efficient way,
2 and the docket ID starts with a 2015.

3 So we're interested in receiving all your
4 comments, both on the rule and the guidance. And I
5 think that's it. The contact information on the
6 handout and the slides, feel free to contact any one
7 of us.

8 Stephen and I are the leads for the
9 technical staff, and Gary's the lead for the rulemaking
10 kind of process staff, but we can always direct your
11 question to the right person if we can't answer it.

12 MR. CAMERON: Thank you, Priya. That was
13 very helpful.

14 And just to reiterate, in addition to the
15 methods that Priya mentioned in terms of commenting on
16 the rule or the regulatory guide, comments made during
17 these meetings will also be considered as formal
18 comments.

19 With that, questions on the rulemaking
20 process from anybody in the room?

21 Yes. Susan, please introduce yourself to
22 us.

23 MS. JENKINS: Hi. I'm Susan Jenkins.
24 I'm with the South Carolina Department of Health and
25 Environmental Control. And I just had a question about

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1 the regulatory analysis that was published by NRC, and
2 not necessarily the contents of it, but my
3 understanding is that the regulatory analysis is not
4 required to be done for new proposed regulations;
5 however, NRC does typically voluntarily do a regulatory
6 analysis.

7 There's also a backfit analysis, and to my
8 understanding, it is required by regulation for some
9 parts of the regulation, and my understanding is that
10 it's not -- a backfit analysis would not be required
11 for the Part 61 regulation.

12 But my specific question is what is the
13 difference, not in the requirements for the regulatory
14 analysis and the backfit analysis, but in the content
15 of those as far as what you would be analyzing, and would
16 NRC consider -- given that this proposed regulation
17 does, you know, have quite a significant economic
18 burden to licensees and to agreement states, would the
19 NRC consider publishing a backfit analysis for this
20 proposed regulation? Thank you.

21 MR. CAMERON: Okay. Thank you, Susan.

22 And I guess -- I don't know how you want
23 to start to address that, Priya. I think maybe we
24 should clear up the backfit analysis piece of it first.

25 And this is Lisa London from Office of

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1 General Counsel NRC. Could you address the issue of
2 the backfit analysis?

3 MS. LONDON: Sure. Good question, Susan.
4 And just to give you some feedback on backfit, you are
5 correct. It does not apply to Part 61.

6 The Commission, when looking
7 at -- introducing backfit analysis into the
8 regulations, applied it -- or it's a part of certain
9 specific sets of regulations in our code, 10 CFR, but
10 it does not apply to Part 61.

11 What the backfit analysis essentially
12 is -- and we have an in-house expert that really has
13 been working on backfit since day one, and he would kick
14 me if he heard me summarize it this way, but I'm just
15 going to kind of shorthand it for you.

16 It's essentially like a cost-benefit
17 analysis. It's not technically a cost-benefit
18 analysis. It analyzes what benefit you get from
19 imposing this new set of regulations or this new
20 requirement, what health and safety benefit or
21 benefits, what kind of improvements you would glean
22 from imposing these, compared to how much that's going
23 to cost the regulated community.

24 And it allows the Commission another data
25 point to sort of say, well, do we believe then this

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1 is -- there's a strong enough basis for us to impose
2 this? But it was not -- it's not a requirement for Part
3 61, and so the staff did not have to do a backfit
4 analysis.

5 MR. CAMERON: Okay. And to get further
6 into this, no backfit analysis, but the regulatory
7 analysis is basically a cost-benefit analysis, and
8 could you tell people how they get a copy of that, and
9 is that fair game in the comment process.

10 MS. LONDON: Absolutely. The regulatory
11 analysis, it's not -- it would not operate the same as
12 a backfit analysis, because that does require staff to
13 make conclusions based on what benefits are gleaned,
14 versus what kind of costs are being imposed.

15 But the reg analysis that we've done for
16 the rule revisions for Part 61 will lay out what we
17 believe the costs for everyone to be; it wouldn't just
18 be -- it's not just for the regulated entities, so a
19 low-level waste disposal site operator; it's also for
20 the agreement states to adopt these regulations and go
21 ahead and enforce them, what's that cost?

22 It's a looking at what this costs us, the
23 NRC, to actually go ahead and do -- and sort of
24 discusses that. It's not really an analysis; it's a
25 discussion in the reg basis.

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1 The reg basis -- Priya can correct me -- I
2 think now is probably on the website --

3 MS. YADAV: Yes.

4 MS. LONDON: -- where she mapped out, and
5 go ahead, pull it up, take a look at it, and provide
6 whatever comments you feel should be brought to the
7 Commission's attention.

8 MR. CAMERON: Okay. And, Priya, thank
9 you for putting that up, because I think you can get
10 the flavor of what's looked at in regulatory analysis.

11 And, Priya, do you want to say anything
12 about this before I ask Susan if she has any follow-up?

13 MS. YADAV: No. We -- Chris and I haven't
14 really worked on the regulatory analysis; that's more
15 to the rulemaking branch, so we can't give any more
16 intimate details, but I would start here and start
17 looking through kind of what different alternatives
18 they looked at in here on the --

19 MR. CAMERON: Okay. This is an extremely
20 important point that's being discussed here, and, Susan
21 and everybody, I think you clearly heard from Lisa that
22 there's no backfit analysis required, and therefore
23 there's no backfit analysis.

24 Do you have anything else you want to say
25 at this point on that?

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1 MS. JENKINS: Well, there's also no
2 regulatory analysis that's required. You don't have
3 to do that, so I guess I was just asking whether or not
4 there would be a benefit -- whether we could get more
5 information about how this would benefit the state
6 versus the cost that we're going to expend, if you were
7 to do a backfit analysis voluntarily.

8 MR. CAMERON: And, Larry, do you want to
9 clarify about the regulatory analysis, requirements to
10 do a regulatory analysis?

11 MR. CAMPER: I'll try to address that.

12 Susan is correct. There's not a
13 requirement that we do a regulatory analysis; that has
14 become the practice, and oftentimes they're done, not
15 every time I don't think, but they're often done.

16 But I can tell you that the staff would not
17 be inclined to do a voluntary backfit analysis. The
18 backfit analysis has a very specific and interesting
19 regulatory history, and the Commission has decided, as
20 a matter of policy, that certain parts of its
21 regulations would be subject to a backfit analysis.

22 The staff would not be compelled to
23 do -- want to do a backfit analysis with that kind of
24 regulatory history. The thing I would mention,
25 though, is with regards to this rule, there was no

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1 regulatory analysis done for this rule when it was
2 created a long time ago.

3 The environmental impact statement served
4 as the regulatory analysis, but in those days the
5 regulatory analysis and the role of it was different
6 than it has become as a matter of practice over time.

7 So that's why it was important to do one
8 on this rule, in addition to the fact that it's been
9 a matter of practice often.

10 MR. CAMERON: Okay. And I just would
11 note -- we're going to go over here.

12 I would note that I think Susan's point
13 could be considered as a comment on the rule, but I think
14 you got an advance preview of what the staff might think
15 about that, but at least it will be on the record.

16 Mike, please introduce yourself.

17 MR. BENJAMIN: This is Mike Benjamin with
18 Energy Solutions.

19 So I -- from what you've talked about, Lisa
20 and Larry, the regulatory analysis includes a
21 cost-benefit analysis?

22 MS. LONDON: Yeah, it's --

23 MR. BENJAMIN: Page 22?

24 MS. LONDON: 4.3.

25 MR. BENJAMIN: Okay. Thank you.

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1 MR. CAMERON: Anybody else in the room
2 before we go to the phones?

3 (No response.)

4 MR. CAMERON: Jennifer or Josh, is there
5 anybody who wants to ask a question to Priya?

6 THE OPERATOR: As a reminder, if you would
7 like to ask a question, please press *1 on your phone.

8 Please stand by; we do have questions
9 coming in.

10 (Pause.)

11 THE OPERATOR: Our first question is from
12 Rusty Lundberg.

13 Go ahead.

14 MR. LUNDBERG: Thank you. This is Rusty
15 Lundberg with the Utah Division of Radiation Control.
16 I just wanted to clarify that it was hinted that maybe
17 the regulatory analysis might be open for comment. I
18 just wanted to confirm if that might be the case, or
19 if comments are offered regarding the regulatory
20 analysis, it would simply just be an opportunity to
21 further provide the staff and the Commission with
22 insight as far as some of the agreement states' view
23 of the regulatory analysis.

24 MR. CAMPER: Rusty, Larry. Thanks for
25 your question.

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1 You know, the regulatory analysis,
2 generally, my observation, is not part of the
3 comment-gathering component that's associated with a
4 rulemaking per se. However, I mean, we've done so many
5 things around this particular rulemaking that are
6 arguably extraordinary in terms of the time that the
7 staff language has been put out there, if -- we would
8 welcome comments on the regulatory analysis if you'd
9 like to do so. We'll take that into consideration.

10 MS. YADAV: Yes. And just to add to that,
11 I would say in your subject line, put the docket ID for
12 the rule, because the regulatory analysis is -- kind
13 of goes along with the rule. And there wouldn't
14 necessarily be a revision to the existing regulatory
15 analysis, but we will read your comments and, you
16 know -- especially we had some comments made along the
17 way about the costs that we have included in this
18 document, so we would like to hear your thoughts on that
19 also.

20 So feel free to make comments on that; just
21 put it under docket ID for the rule.

22 MR. CAMERON: And just as a process point,
23 the regulatory analysis guidelines derive from the fact
24 that Ronald Reagan, when he was president -- there was
25 an executive order that required a regulatory impact

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1 analysis, but it only applied to executive branch
2 agencies, not to independent agencies like the
3 Commission.

4 But the Commission decided to voluntarily
5 follow that, so that's the derivation of it, and I hope
6 Larry answered your question, Rusty.

7 MR. LUNDBERG: Yes.

8 MR. CAMPER: Just one more comment, too.
9 Rusty, that reg analysis was put out sometime ago, when
10 we were working on the first proposed rule, and then
11 it was updated to coincide with this rulemaking.

12 So there's a little bit of a history around
13 it as well, so if you go looking for it, make sure you
14 look for the whole story. Okay?

15 MR. LUNDBERG: Thanks.

16 MR. CAMERON: Lisa London.

17 MS. LONDON: This is Lisa London from the
18 Office of General Counsel of the Nuclear Regulatory
19 Commission. I just wanted to add one point.

20 You know, historically we put out
21 documents and we say, you know, here we're making rule
22 language available to you, here we're making a guidance
23 document available to you. We've got a comment period;
24 please do take a look at these documents, provide us
25 your comments.

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1 But anything that is associated with a
2 rulemaking that is publicly available, you know, if we
3 put it on our website and it's associated with a
4 rulemaking, if you read something that has to do with
5 a reactor at -- you know, the Calvert Cliffs reactor,
6 you know, in all likelihood the response that we're
7 going to get if you provide a comment on that is that's
8 really out of scope; it has nothing to do with what we're
9 doing here.

10 But just because it's not normally a
11 document people comment on, if it's a part of the
12 rulemaking and it's publicly available, you should
13 always feel free to comment.

14 MR. CAMERON: Thanks, Lisa; that's very
15 helpful.

16 Jennifer, does anybody else on the phone
17 have any more questions or comments for Priya?

18 THE OPERATOR: We do have a question from
19 Mary Olson.

20 Go ahead. Your line is open now.

21 MS. OLSON: Hi. I failed to really
22 introduce myself. I'm the Southeast Coordinator for
23 Nuclear Information and Resource Service, and my name
24 is Mary Olson, and I work with many people in impacted
25 communities and many of your intervenors.

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1 So I have a question, and then I also have
2 a comment. You want me to tie them together, or you
3 want to take them one at a time?

4 MR. CAMERON: Why don't you just tie them
5 together for us, Mary.

6 MS. OLSON: Okay. So the question is
7 whether the existing sites will undergo a license
8 amendment to implement this rule. You may say that in
9 here, but if so, I missed it. That's the question.

10 And then the comment is that I really
11 applaud the efforts of NRC staff, when you do get out
12 of the box, as Priya said, and the transparency that
13 you're striving for, and the website has really come
14 a long way.

15 But you know what you're advocating here
16 is basically a site-specific -- almost like a
17 rulemaking to go to performance assessment. I counted
18 six different documents of assessments that the
19 licensee will be asked to do, but I don't see any
20 regulatory requirements for transparency, for giving
21 access to the public to data, to the assumptions used
22 in those assessments, to the models.

23 As an intervenor, I've had to go all the
24 way to the mat on a motion to force disclosure. I've
25 forgotten exactly the technical term for that, but, you

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1 know, we've been able to do it but at great cost, great
2 expense; you know, expense of time and energy as well
3 as money, and golly gee, I mean, I'm not sure that
4 deterministic rules are more beneficial to the public
5 than this. I don't know.

6 But I do know that if we don't have access
7 to any way to even know what's going on, except for,
8 oh, don't worry your pretty little head, our
9 probability factor is this -- it's not transparent.
10 We are shut out.

11 And I personally think that ensuring
12 transparency is a way to circumvent, you know, some of
13 these issues being brought to bear directly. So I'm
14 encouraging you to take my comment as a responsibility
15 of the regulator to require the licensees to provide
16 the level of transparency that you are providing in your
17 rulemaking process, at least, if not more.

18 MR. CAMERON: Okay. Thank you, Mary.

19 MS. OLSON: I want to know about that
20 license amendment piece.

21 MR. CAMERON: Yeah, we're going to get
22 there.

23 And Larry wants to say something to you.

24 MR. CAMPER: Well, let me start with your
25 last point first, Mary. We hear your comment, your

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1 interest, and your points, and on the one hand, thanks
2 for the compliments with regards to the transparency
3 that we strive for here. We do understand your
4 concerns overall.

5 On your point about the license amendment,
6 the process is such that once the rule is final, and
7 if we assume that the applicability to the agreement
8 states for the existing operating facilities continues
9 and ends up that way in the final rule -- and I say that
10 because, remember, again, there will be comments about
11 this topic, and the Commission will have to weigh that
12 again; the staff will have to weigh that and then go
13 back to the Commission with a final rule, and the
14 Commission will make a policy deliberation.

15 But if we assume for sake of discussion
16 that it does survive or exist essentially as it is now,
17 what happens is it becomes a matter of compatibility
18 as assigned by the rulemaking.

19 Per the process for compatibility, the
20 states will then have three years to implement the rule.
21 They will change their regulations to align with the
22 new rule for the compatibility assigned.

23 How the state then goes about implementing
24 the rule, whether it be through license conditions or
25 some other process that is used in the state, will

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1 depend upon the state in question, whether that be South
2 Carolina, Utah, Washington, or Texas.

3 So we can't sit here and tell you that it
4 will necessarily result in a license amendment. That
5 will be up to the state. But licenses and license
6 conditions are the most practical tool that the states
7 use when they provide regulatory oversight of these
8 sites or other license activities, but that's up to the
9 state.

10 MR. CAMERON: Okay. Thanks for answering
11 that question, Larry.

12 And, Mary, I would just add, as a process
13 point, if you see a part of the rule that you don't feel
14 is justified with enough data, that's always fair game
15 for comment.

16 And with that, Jennifer, is there anybody
17 else on this issue?

18 THE OPERATOR: There are no further
19 questions in the queue at this time.

20 MR. CAMERON: Okay. Thank you.

21 Thank you all, and we're going to get to
22 Christopher Grossman now, and you'll see from your
23 slides that he has a number of topics there, and we're
24 going to go through them one by one, and after each
25 topic, we'll go out to you and the people on the phones,

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1 to see if there's questions and comments.

2 And this is Chris Grossman.

3 (General laughter.)

4 MR. GROSSMAN: For those of you on the
5 phone, I just set my glass in front of the projector,
6 unintentionally.

7 What we're going to cover tonight is we're
8 going to look at some of the significant changes to the
9 technical requirement in Part 61 that are addressed in
10 this proposed rule.

11 And the point of this, as Priya mentioned,
12 our goal was to get out early on these and give the
13 public a chance to see kind of a summary of the proposals
14 so that we could help the public formulate better
15 comments, more informed comments, which helps us then
16 do our job better. When we get comments back that have
17 a clear rationale and proposal for changes, that helps
18 us address those comments and to make a better final
19 rule.

20 With that being said, we want feedback; we
21 want all types: positive, negative. We'll take it
22 all, so bring it, because we try to do the best job that
23 we can when we're writing this rule, but it's a small
24 number of people that work on this, relatively
25 speaking, and sometimes it's useful to have external

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1 views brought to bear on this, because we're not
2 infallible, and we certainly want to incorporate
3 everyone's views to the extent we can.

4 So slide 3, please -- oh, sorry, slide 2.
5 This is kind of a summary of this first talk before we
6 take a break. I'll provide a little bit of background
7 for folks who maybe don't follow Part 61 every day as
8 part of their career. Not everyone is as involved as
9 the staff are in Part 61.

10 Then we'll spend some time on an overview
11 of the changes. We'll walk through the rule topics,
12 kind of point of point, and we'll give a chance between
13 each of those for folks to ask questions or provide
14 comments on each of these significant changes.

15 At the end you'll see there's an Other
16 category. I don't have anything to talk about at this
17 point, but as we've seen, there may be some things that
18 we hadn't planned to talk about tonight that folks have
19 had questions about. We've already gotten some of
20 those. And so this gives a chance for any of the
21 technical aspects that maybe we hadn't thought of for
22 folks to ask questions or provide comments.

23 And then I'll have a short little talk on
24 the guidance. As Priya mentioned, we have a two-hour
25 seminar specifically on the guidance. Tonight we're

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1 going to be focused more on the rule, although the
2 guidance will be sprinkled in at times, because for some
3 of the changes, the rule text is not necessarily
4 verbose, and so how you actually implement that is also
5 just as important to understand what that change means,
6 so we will sprinkle some of the guidance in as I go
7 through the rule changes.

8 Slide 3, please. So before we get
9 started, I'll provide a little overview in context.
10 We've taken this slide from NRC's public website, and
11 this is to help people kind of understand what we're
12 talking about when we talk about proposed dose limits
13 tonight and some of the goals for the different time
14 periods.

15 If you can't read those, we have -- the two
16 green bars -- there's one on the left, and the vertical
17 axis is an exposure dose, and the units there are in
18 millirems, which is a unit of exposure.

19 And then across the bottom we have typical
20 exposures that someone may receive in living their
21 lives, and the two green bars in particular are NRC dose
22 limits, and so the furthest to the left, the tallest
23 bar, is 5,000 millirem; that is the limit for a nuclear
24 worker, as allowed under Commission regulations, on a
25 yearly basis.

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1 And then the shorter green bar is the
2 annual public dose limit, so that's set at 100 millirem.
3 And then you'll see later when we talk about the time
4 periods and the dose limits that are proposed, how they
5 compare to some of these and give you a little context
6 for where we're at with low-level waste disposal and
7 exposures.

8 The two main performance objectives
9 related to this are sections 61.41 and 61.42; 41 deals
10 with protection of the general population from releases
11 from disposal facilities, and 61.42 deals with
12 exposures to an inadvertent intruder who might come on
13 to the site and potentially dig into the waste or be
14 exposed to radioactivity from the waste on site.

15 And the proposal for the compliance period
16 for releases to the general population would be 25
17 millirem per year, so about a quarter of the annual
18 public dose limit.

19 And then for the intruder who might come
20 on site, it's a higher dose limit; we're proposing a
21 500-millirem, and I'll talk a little about that when
22 I get to the intruder. That largely deals with the fact
23 that it's a hypothetical; there are controls that are
24 required for a site to limit the likelihood of an
25 intruder coming onto the site, and so there's some

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1 accounting for that when we set a limit for the analyses
2 to demonstrate.

3 The blue bars on this slide are other
4 natural -- are exposures that may occur from other
5 natural or manmade sources, such as taking a flight from
6 North America to Europe, for instance.

7 Slide 4, please. So what is in the
8 proposed rule? The four checks here are some of the
9 essential elements of the changes we're proposing as
10 part of the rule.

11 We're proposing to add new and revised
12 site-specific technical analyses to demonstrate that
13 the performance objectives are met. And in the rule
14 the performance objectives are kind of at the high level
15 of the standards that we want to achieve for protection
16 of the public health and safety. And then the analyses
17 are the work that's done to demonstrate that those
18 performance objectives would actually be met.

19 We'll talk about these analyses in greater
20 detail as we go through. There are a number of them,
21 as I think Mary alluded to in her comment.

22 The second change is to permit the
23 development of site-specific criteria for waste that
24 would be acceptable at a disposal site. This is new
25 to NRC's framework. Currently Part 61 has a table of

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1 waste concentrations, and it bins those -- the waste
2 based on where a package's concentration may fall on
3 that table, into one of three categories, A, B, or C.
4 And then there are certain requirements for how that
5 package is to be disposed, based on that waste
6 classification.

7 What this proposed amendment would do
8 would allow that system to continue, but it would also
9 allow sites to use these technical analyses to
10 demonstrate that other criteria could be used to define
11 what's acceptable for the disposal site, based on
12 site-specific conditions.

13 Though it's new to the NRC, other
14 organizations are using this approach. DOE uses it at
15 many of their sites, and it's also used
16 internationally.

17 The third tick, then, talks about
18 facilitating implementation and aligning the
19 requirements with current health and safety standards.

20 And what this really gets at is there are
21 international bodies that look at how a certain
22 concentration or a certain amount of radioactivity may
23 translate into an actual exposure when it's uptaken by
24 a human.

25 And so those bodies have revised their

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1 standards over the years, and the goal here is to bring
2 that in line with some of the current international
3 standards and approaches.

4 And then finally the changes are made to
5 ensure that licensing decisions are based on
6 defense-in-depth protections. And for waste, this is
7 new. Defense-in-depth is a longstanding Commission
8 policy to ensure that no single barrier or layer of
9 defense is relied upon solely for safety.

10 And so the Commission has proposed
11 bringing this to bear in the waste arena for low-level
12 waste, and it has spurred -- recently in the waste
13 arena, because of some of the events that happened, like
14 in Fukushima, the Commission has been focused on
15 increasing defense-in-depth protections at its
16 facilities because of some of those events.

17 Finally, the rule would apply -- would
18 affect directly low-level waste disposal licensees, so
19 the licensees who hold licenses to dispose of the waste,
20 or license applicants.

21 Slide 5, please. And specifically we have
22 four operating sites. I think this was alluded to
23 earlier. We have one here in South Carolina, in
24 Barnwell. There's also in Richland, Washington, at
25 the US Ecology site. There's a site in Utah, near

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1 Clive; that's an Energy Solutions site as well. And
2 then finally the newest member, the newest site, is in
3 Andrews, Texas, at the Waste Control Specialists site.

4 They're all in agreement states, so none
5 of these are in non-agreement states. And many of them
6 are subject to restrictions for their compact. So a
7 compact is a body that affects what kind of waste or
8 where that waste may come from for the disposal
9 facility, and so we've listed some of those
10 restrictions that occur. Often waste is not accepted
11 from all over the country at these sites, so there's
12 some limitation on that.

13 Slide 6, please. Now, this slide is to
14 give us a sense of the types of questions that one might
15 need to consider because of the changes that we're
16 proposing. A licensee may ask these kind of questions
17 in the sense of how are they going to demonstrate that
18 the rule and the proposed changes are going to be met?

19 A regulator might ask the licensee these
20 questions of how are you going to demonstrate that these
21 things are met? And the public also may ask the
22 licensees or their regulator in their area how these
23 things are being met.

24 And so it's just -- mostly here it's
25 conceptual, to spur thought about the rule, and many

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1 of these questions relate more to guidance in terms of,
2 okay, you have requirements; how do I show that those
3 requirements are met?

4 And as I mentioned, the webinar on May 20,
5 which we have the briefing materials available on the
6 website from that webinar, and we also plan to put
7 transcripts from that webinar up on the website as well.
8 We're in the process of getting those prepared.

9 Slide 7, please. So this diagram is
10 intended to give -- to be helpful, hopefully, to give
11 a little context of how all the pieces fit together.
12 Though it is a limited rulemaking, it can be quite
13 complex for someone to understand, especially if you
14 don't follow it every day, so I'll walk through this
15 a little bit and try and help you see how everything
16 fits together for the analyses.

17 At the top we have Assessment Context and
18 Scenario Development. And this really defines what
19 are the scope of my -- what is the scope of my analyses?
20 What do they need to consider and the significance of
21 those events or features.

22 That applies to all the analyses, and it
23 really helps develop the analyses and ensure that
24 they're comprehensive and address the questions that
25 need to be answered in terms of demonstrating the

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1 requirements.

2 So you see the arrows kind of flow down to
3 the three analyses, which are the vertical blue bars.
4 We have a performance assessment, an intruder
5 assessment, and the stability analyses.

6 And there may be other analyses associated
7 with -- during operations, but we're focused tonight
8 on kind of the long term, and so mostly post-closure,
9 so that we focus on that in this diagram to keep it
10 simple.

11 And what we've got on an overlay, then, on
12 the horizontal or the timeframes that the rule talks
13 about -- and we have three timeframes, and we'll talk
14 about those shortly here in more detail.

15 We have a compliance period, which applies
16 for all three analyses, and then we have the second time
17 period, would be the protective assurance period. So
18 the compliance period would be out to 1,000 years after
19 the site is closed; the protective assurance period
20 would be a second period that starts at the end of the
21 compliance period and goes to 10,000 years, and then
22 finally the performance period would go from beyond
23 10,000 years.

24 The first two times periods, the
25 compliance period and the protective assurance period,

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1 would apply for all sites. The performance period
2 would apply to sites that take a significant amount of
3 long-lived waste, and I'll explain that a little bit
4 further in one of the future topics as we go through
5 it.

6 And then on the right you'll see arrows
7 that connect the analyses and the time period to
8 defense-in-depth, and so the idea here is that you
9 conduct your analyses to demonstrate that your
10 performance objectives are met, and you also use that
11 information to show that the facility is designed with
12 certain defense-in-depth protections, so that there
13 isn't just one piece of the facility design or the
14 facility site that is ensuring safety, that we have
15 multiple pieces, that there's independence and
16 redundancy in those layers of defense or
17 defense-in-depth protections. That's what we're
18 trying to illustrate with that.

19 Let's go to slide 8. In terms of the rule
20 topics, we'll go through each of these. We'll start
21 with the analyses timeframes, then we'll go to the PA,
22 the performance assessment, and then talk about the
23 inadvertent intruder assessment, and then we'll go into
24 the second and third timeframes: protective assurance
25 and the performance period. We'll talk about

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1 defense-in-depth and safety case and how those are
2 folded into the rule, and then the waste acceptance
3 criteria, and then after each of those we'll stop for
4 questions and comments.

5 MR. CAMERON: We'll going to go into
6 analyses timeframes. After Chris goes through these
7 and we have discussion, it might be useful to go back
8 to slide 7.

9 I think the discussion of these will
10 illustrate perhaps how that all ties together. So if
11 you did have questions about slide 7, we can get to that
12 later on, but let's start with the analyses timeframes.

13 MR. GROSSMAN: Okay. Thank you, Chip.

14 Slide 9, please. The timeframes for the
15 analyses is a complex issue. There are lots of
16 opinions, and I'm not sure personally if there's any
17 right answer to this question of how long do we need
18 to analyze to demonstrate the performance objectives.

19 We've had a variety of interactions on this
20 over many years now, and we've sought specifically,
21 because of that, the number of opinions on it, extensive
22 stakeholder input on this over the years.

23 We developed a white paper for an initial
24 recommendation, and you'll see this ML number is from
25 our document management system, which is known is

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1 ADAMS. I think Priya may have mentioned ADAMS earlier.

2 This is the accession number, so when
3 you're searching ADAMS, this would be the number you
4 would use. You can also find this in the background
5 on the webpage; it's available there as well, which
6 might be easier to find that way.

7 Subsequent to that initial
8 recommendation, then the Commission directed changes
9 to the staff recommendation in a staff requirements
10 memorandum; that's what the SRM stands for.

11 And so, as Larry mentioned, we communicate
12 with -- the staff communicates with the Commission
13 through Commission papers, known as SECYs; that's one
14 method we use.

15 The Commission then communicates back to
16 us with direction through these requirement
17 memorandums, directing the staff on how it wants to
18 proceed with the policy.

19 We've sought -- in this -- excuse me. In
20 the changes to the staff's recommendation, the
21 Commission specifically pointed out to seek
22 stakeholder input, especially on this issue of
23 compatibility designation.

24 In the proposed rule, as Larry mentioned,
25 for the significant provisions, the Commission

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1 directed the staff to specify compatibility B, which
2 essentially means that the agreement states would have
3 to have essentially identical regulations. But they
4 recognized that there would be a lot of input, and they
5 directed the staff to go out and seek that input to help
6 the Commission develop the final rule.

7 And the Commission directed the staff that
8 they wanted that compatibility B to apply to not just
9 the timeframes but also all the significant provisions
10 of the -- or all the significant requirements of the
11 proposed rule.

12 And I think what they're interested in is
13 to get a sense of a balance between flexibility for
14 agreement states to develop regulations with
15 consistency on a national standard in the sense of is
16 everyone on kind of a level playing field in having the
17 same requirements.

18 Slide 10, please. So when the staff
19 developed recommendations and the proposed language,
20 we considered a number of things, and this slide tries
21 to condense all that down into a short summary.

22 We considered waste characteristics, and
23 I know you can't -- some of these may be too small to
24 see. We have larger images in the backup of the slide
25 package, and they're also available in the documents

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1 that are on the website.

2 But I think from what we can see you'll get
3 a sense of kind of the patterns that we're talking about
4 here. So if you start in the upper right-hand corner
5 for waste characteristics, traditionally low-level
6 waste, after about a thousand years, is represented by
7 this dark blue line in the upper figure.

8 After about a thousand years you have
9 roughly less than 1 percent of the initial activity
10 remaining because of the decay of the radionuclides,
11 the short-lived radionuclides, whereas the top dashed
12 line gives you a sense for depleted uranium; it remains
13 relatively flat because of its long half-life.

14 And then in the end you have ingrowth of
15 some of its progeny that increase the activity at very
16 long times in the future.

17 We also considered uncertainties. There
18 are many uncertainties to consider, given the long
19 timeframes. You have uncertainties with the natural
20 characteristics of the site. You have uncertainties
21 with the engineered design.

22 You have uncertainties in what are people
23 doing in society in the future, because that is a key
24 component of these analyses -- or how are people
25 exposed to the waste in the future?

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1 And what you can see from this figure is
2 we've tried to artistically represent how some of these
3 uncertainties may change temporally, so in time how
4 they may evolve.

5 And I think one of the key things here, just
6 to point out is this green line goes vertical pretty
7 quickly, and that represents kind of what we view
8 schematically of the socioeconomic uncertainty, so
9 what are people doing in the future? That quickly
10 becomes uncertain in a relatively short timeframe,
11 compared to some of the uncertainties associates with
12 the engineering and the natural characteristics.

13 We considered domestic experience and
14 international experience, and that's what our table is
15 getting at here. We point to timeframes that are used
16 in other US regulations, by the EPA, by the Department
17 of Energy -- sorry; the Environmental Protection
18 Agency, by the Department of Energy, as well as other
19 NRC regulations, and so that gives you a sense of how
20 we fit in context with other regulations.

21 And many of these are discussed in the
22 white paper, which I mentioned in the previous slide,
23 if you need further information or would like further
24 information on how we came to the proposed timeframes.

25 Slide 11, please. So what are the

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1 timeframes and then the dose limits that correspond to
2 those timeframes?

3 We have a three-tier approach in the
4 proposed rule. As I mentioned, there's the compliance
5 period, so we'll start at the bottom and work our way
6 up in time. And then we have kind of two columns that
7 go -- one is for protection of the general population,
8 that performance objective at 61.41. And on the right
9 we have protection of an inadvertent intruder, which
10 is at 61.42.

11 So at site closure, then the compliance
12 period would go a thousand years beyond site closure,
13 and the dose -- there would be a dose limit for those
14 periods for each performance objective, and as I
15 mentioned earlier, it would be 25 millirem, and then
16 also as low as reasonably achievable as part of that,
17 for protection of the general population, and then 500
18 millirem for the dose limit for protection of an
19 inadvertent intruder.

20 When you get to the second time period,
21 then, after 1,000 years, in the protective assurance
22 period, we switch to an optimization goal objective,
23 and the goal -- the standard here is to minimize doses,
24 with a target of 500 millirem per year.

25 There can be other targets. This could

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1 vary. The Commission, in the proposed rule, has
2 specified that this could vary based on economic and
3 technical considerations. So licensees or the
4 regulator could propose other targets if there are
5 justifications for that.

6 And then finally the performance period,
7 the objective here is to minimize to the extent
8 reasonably achievable, so we remove the target, and
9 we're looking for minimizing to a level that's
10 reasonably achievable.

11 And as I mentioned earlier, the third
12 period only applies for sites that take a significant
13 amount of long-lived waste, and we'll talk about that,
14 where -- how licensing might determine that, or how a
15 regulator might determine that in the performance
16 period talk in a few minutes.

17 So let's go to slide 12, please. So here
18 are some of the definitions of the time periods from
19 the regulation. I won't read this, in the interest of
20 time. But I do want to spend a little bit of time on
21 the long-lived waste definition.

22 We've had some questions about this
23 definition, what it actually encompasses, in some of
24 our other meetings, and so the intent here is to capture
25 both radionuclides that are long-lived themselves or

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1 that may have ingrowth with long-lived daughters or
2 potentially long-lived risks. So we're trying to
3 capture those three things in this definition, which
4 explains its length.

5 Let's go to slide 13. We can take a break
6 now. The staff is looking for feedback and your
7 comments on the overall approach. Is it sufficiently
8 flexible? Is it overly complicated? That sort of
9 feedback would be very helpful.

10 We'll also looking for feedback on
11 compatibility. Is B the appropriate compatibility for
12 the timeframes? And then also on the long-lived waste
13 definition, if it's clear and if it's comprehensive
14 enough.

15 And with that I'll turn it over to Chip.

16 MR. CAMERON: Okay. Thank you, Chris.

17 Let's start out in the room here in
18 Columbia. Are there questions or comments for Chris
19 on the analyses timeframe issues?

20 Susan.

21 MS. JENKINS: Thank you. Susan Jenkins
22 with the South Carolina Department of Health and
23 Environmental Control.

24 I have a question about the timeframe for
25 the stability analysis. I noticed that in the concepts

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1 section of Part 61 and 61.7 there are multiple
2 references to a 500-year timeframe or intruder
3 barriers, you know, to continue to perform and to
4 characterize the radiological characteristics of the
5 waste.

6 However, in 61.44, on stability of the
7 disposal site after closure, it looks as though I guess
8 in this, the latest version of the proposed regulation
9 versus the preliminary proposed language, I guess it
10 was, that was out before this, if I'm correct about
11 that, it looks like you've added language that the
12 stability would be for the compliance and protective
13 assurance periods, which goes out to 10,000 years.

14 And I'm just kind of wondering, is that
15 something that you added since the last version of the
16 regulation, and if so, why did that change? And just
17 talk a little bit about the difference in the 10,000
18 for stability versus the 500 years for intruder
19 barriers and a lot of the other references that we see.

20 And can we expect a disposal facility to
21 be stable for 10,000 years? Thank you.

22 MR. GROSSMAN: Thank you, Susan. I
23 appreciate the comment.

24 And 61.7, for those who may not be
25 familiar, is the concept section of the regulation, and

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1 in general that section lays out kind of the philosophy
2 of the regulation, and it mentions -- and I don't
3 remember the specific numbers, but I think there's a
4 300-year period and a 500-year period in that section
5 in terms of the timeframe for, say, a barrier or for
6 stability.

7 The reason those were mentioned there is
8 when Part 61 was developed, there was an analysis done
9 to develop a waste classification system, and it was
10 sort of an inverse calculation, where if they had a dose
11 limit and that dose limit is related to what we're
12 proposing here, it was, for an inadvertent intruder,
13 500 millirem per year.

14 That dose limit didn't end up in the rule,
15 but it was used in the analyses to develop those tables,
16 and so they did an inverse calculation where they
17 back-calculated what concentrations would you need in
18 your disposal site to meet that classification system,
19 and as part of that analysis they also considered the
20 stability of the site and the waste forms that were
21 going into it and made certain assumptions about those.

22 And to align with that analysis then, some
23 of those assumptions were for some of these features
24 to last 3- or 500 years, whatever the case may be for
25 the specific assumption.

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1 That was -- my understanding is that was
2 brought forward to the concepts to help understand
3 that. I don't believe that the concept sections are
4 actual requirements in the sense that someone has to
5 meet that. They're more of philosophy that they should
6 be designed for that long, because the idea was that,
7 for instance, like your Class A waste -- excuse
8 me -- Class C waste, with appropriate intruder barriers
9 would be protective of public health and safety, so you
10 needed those to last for a certain amount of time to
11 be consistent with analyses that was done for the waste
12 classification system.

13 One of the reasons we're extending that
14 here -- and we are; we're proposing to extend that to
15 the 10,000-year period -- is when you start talking
16 about long-lived waste, then -- and if you're going to
17 be designing site-specific waste acceptance criteria
18 for long-lived waste, it's more to be consistent with
19 that approach. And so we felt that it was appropriate
20 to extend it out for that time.

21 Now, people are free to disagree with that,
22 and we certainly would appreciate comments on whether
23 they believe that that's an appropriate approach.

24 MS. JENKINS: The long-lived waste
25 timeframe -- you know, the table A that you have, where

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1 you determine whether or not you need to -- you have
2 long-lived waste and you need to look beyond the 10,000
3 years, I understand that.

4 But for a disposal facility that does not
5 have long-lived waste, it appears as though you're
6 still having to meet stability up to the 10,000 years.
7 So that's kind of the disconnect for me.

8 MR. GROSSMAN: Sorry. We get into this
9 word trap, I guess, with the long-lived waste is that
10 in that we define long-lived waste in the rule to
11 trigger when you might do the third tier of the
12 analyses.

13 What I was referring to there, I guess I
14 should have said longer-lived waste. So there
15 are -- all sites have some amount of long-lived waste;
16 it may not be a significant amount.

17 And so to ensure that the risks from that
18 longer-lived waste -- not necessarily that it trips you
19 into the third period -- are adequately captured and
20 accounted for. That was kind of the staff's rationale
21 for proposing -- going forward with the proposal to
22 extend that timeframe for the stability analysis.

23 And currently the rule is silent on how
24 long the analyses actually need to be done, for any of
25 the current analyses, and so it's not that we're

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1 extending it necessarily; we're just bringing clarity
2 to what that time period is.

3 MR. CAMERON: And, Susan, is there any
4 suggestions that you might have for the staff on this
5 subject? Does it need to explained more clearly or
6 anything?

7 MS. JENKINS: I was just trying to
8 understand -- the requirement for the stability out to
9 10,000 years, was that added between the preliminary
10 proposed language and the current proposed language?
11 I don't recall it being in there before, and I don't
12 know if there were comments on it or what prompted that
13 change, because it does seem like a significant
14 requirement to show stability for 10,000 years,
15 especially for a disposal site that, you know, is
16 existing, has already been sited, has already been
17 designed, has already been used.

18 So it just seems like it changed from the
19 last time, and I didn't know what prompted that I guess
20 was part of my question as well.

21 MR. GROSSMAN: Okay. I appreciate that.
22 The change was added when the Commission provided the
23 staff direction to go to this three-tier approach,
24 which I think was the last -- we've had a number of
25 directions on this, and I think it was the last

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1 direction that the Commission provided the staff.

2 That's when that language was added about
3 the protective assurance period. Currently the
4 performance objective for stability just says
5 essentially the site shall be stable. It doesn't say
6 for how long the performance objective, and so
7 technically we've added both the compliance period and
8 the protective assurance in the language, but in terms
9 of when was the protective assurance language added to
10 that performance objective, it would have been after
11 the Commission gave us the direction to do this
12 three-tier approach.

13 MR. CAMERON: Okay. Let's go over to
14 Roger.

15 MR. SEITZ: Thank you. My name is Roger
16 Seitz, with Savannah River National Laboratory. And
17 I want to express my appreciation. I understand
18 there's a lot of work that goes into this, and like you
19 said, there's going to be comments.

20 I wanted to touch on two similar points.
21 One point is I'm still struggling with the reason why
22 a new type of waste needs to be defined.

23 I don't see a need to define something
24 called long-lived waste. In my mind, if you meet the
25 performance objectives that have been established,

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1 that question answers itself. You demonstrate
2 protectiveness, regardless of what the waste is called.

3 It's all low-level waste, and meeting the
4 performance objectives -- it doesn't matter if it's
5 called long-lived waste, short-lived waste, what it's
6 called -- Class A, Class B, Class C. So that's one
7 question.

8 And the second one is related to a
9 stability analysis that goes out 10,000 years. At one
10 level you can say you're imposing requirements on
11 Mother Nature, in that case.

12 Along the same lines, if you do your
13 performance assessment and you demonstrate that you
14 meet the performance objectives, you're going to have
15 to consider potential changes in the future.

16 So by meeting the performance objectives,
17 once again, you demonstrate whether the site is safe
18 or not, with or without doing a separate stability
19 analysis.

20 MR. CAMERON: What do you think about
21 those points, Chris?

22 MR. GROSSMAN: I'll give a little
23 background on the long-lived waste first, and then we
24 can talk about the stability analysis.

25 Part of the rationale for defining

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1 long-lived waste was we -- in some of our earlier
2 interactions we got a lot of comments about, I'm just
3 a traditional low-level waste facility; why do I need
4 to do this long analyses. Some of our initial
5 recommendations for timeframes went out in excess of
6 10,000 years, and so there was some concern that there's
7 not a reason for me to do this if I don't have a
8 sufficient amount of material to justify it, and there
9 was concern that this would apply to me and create a
10 large burden for me as a licensee.

11 And so that was an attempt to kind of define
12 a trigger for when that third period would be required,
13 so that it's not a burden on all licensees, particularly
14 licensees who may not want to take large quantities of
15 long-lived waste. Just to give you a little background
16 so you understand why we're bringing that.

17 Is there a better way to do that? We're
18 certainly open to comments on that, and we'd appreciate
19 those if you think there is.

20 So the stability analysis question, I'll
21 go into a little bit of background on that. Part 61
22 was -- stability was kind of the genesis for Part 61
23 in some ways, because some of the early sites had issues
24 with stability and particularly infiltration then
25 resulting from some of that instability.

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1 And so it was a performance objective in
2 the original rule, and it's carried forward. We
3 haven't received any direction to change that. In our
4 guidance, though, we do talk about, for the long term
5 in particular, how that's demonstrated. It's largely
6 through the other two performance objectives, the 61.41
7 and 61.42.

8 Are there other ways to do that, maybe by
9 removing a performance objective or something. We're
10 certainly open to those kind of comments if there's a
11 better approach to that.

12 But that's kind of how we've come -- it was
13 a performance objective, and so how do we extend that,
14 then, to these timeframes. And maybe it's not
15 appropriate for the long timeframes because of the
16 uncertainties that are involved, but we're open to that
17 kind of feedback.

18 MR. SEITZ: I'll just follow. I agree
19 that stability has been part of the rule for a long time.
20 My concern would be the extension from what use to be,
21 I believe, a 500-year perspective to a 10,000-year
22 perspective.

23 MR. CAMERON: And thank you, Roger.

24 Anybody else in the room on this issue
25 before we go to the phones?

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1 (No response.)

2 MR. CAMERON: Okay. Jennifer or Josh, do
3 we have anybody who wants to question or comment?

4 THE OPERATOR: There are currently no
5 questions in the queue. If you would like to ask a
6 question on the phone, please press *1.

7 And it looks like we do have some questions
8 coming in. Please stand by.

9 (Pause.)

10 THE OPERATOR: The first question is from
11 Mary Olson. Go ahead. Your line is open.

12 MS. OLSON: Hi. This is Mary Olson from
13 NIRS. An extensive brief comment: I like that the NRC
14 is an optimist about natural system stability; that's
15 nice. But I would add that the energy office from North
16 Carolina once shared a set of projected coastlines,
17 given different amounts of glacial and other
18 water -- ice melting and going into our oceans and
19 projected ocean rises.

20 We don't know how soon or if at all, but
21 certainly by the 10,000-year mark we could be looking
22 at the highest tide levels that they projected, and it
23 is downtown Columbia, by the way.

24 I know you're not in downtown, but Columbia
25 would be a beachfront property under the most extreme

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1 scenario for climate-related ocean rise. I'm not
2 saying we need to start there.

3 But I am saying that we're a little naive
4 to not understand that uncertainties are changing at
5 the moment.

6 MR. CAMERON: Thank you very much, Mary.
7 Jennifer, anybody else?

8 THE OPERATOR: There are no further
9 questions at this time.

10 MR. CAMERON: Okay. Chris, let's move on
11 to the next topic.

12 MR. GROSSMAN: Okay. Thank you, Chip.

13 So we're on slide 15. The second topic
14 will focus on the performance assessment, one of the
15 analyses in Part 61. I want to start off a little bit
16 at a higher level than the rule itself and just what
17 is a performance assessment. Not everyone may be aware
18 of what this term means and how it's used in practice,
19 particularly in waste disposal.

20 So performance assessment, its intention
21 is to start off with a real system, kind of in the upper
22 left-hand corner. You may have a disposal facility or
23 some other sort of facility that's composed of -- at
24 a real site -- of real engineered features.

25 And the goal here is to understand how that

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1 system or that facility may perform when presented with
2 a series of challenges, essentially. And the way we
3 do that, then, in a performance assessment is we convert
4 that real system into a mathematical construct, and we
5 use the term abstraction, so we take a real physical
6 system and make an abstract system to represent that
7 real system in a model; we use a mathematical model to
8 do that.

9 That mathematical model then is used to
10 estimate the performance of that real system through
11 the abstract model to assess how it might perform when
12 faced with a series of challenges.

13 The idea with performance assessment is
14 not to predict the future. I often hear that thrown
15 out there. That's not the goal of a performance
16 assessment. The goal is to say, what do we think this
17 system could be challenged by in terms of future
18 features, events that may occur, or processes that just
19 occur naturally in the environment that we're aware of,
20 that we know of, and how will that system respond to
21 those challenges?

22 The performance assessment in the proposed
23 rule would be used to demonstrate that releases from
24 the site are protective of public health and safety so
25 that they aren't -- they don't result in an undue

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1 exposure to members of the public offsite.

2 When you build a model scientifically you
3 typically have to do a couple of things to make sure
4 the model's performing correctly. And those two
5 things, among others -- but we'll talk about
6 them -- are model verification and model validation.

7 Model verification means, okay, I have a
8 bunch of mathematical equations; let's go through them
9 and make sure that they're all taking inputs and
10 processing that to an output correctly.

11 That's something that we can do in
12 performance assessment; it's certainly feasible. The
13 second one's a little more challenging, given the
14 timeframes that we're involved in with performance
15 assessment, and that is validation of the model.

16 And in the scientific world, when you have
17 a model, you often will test your model over a range
18 of conditions, to show that your model does what you
19 think it does over that range.

20 Well, given that we're out hundreds,
21 thousands, tens of thousands of years for some of this
22 waste, it's not possible to validate these models over
23 those timeframes, and so we rely on a different approach
24 in performance assessment, and that's what we have in
25 the lower left corner, the model support, and I'll talk

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1 about that in a little bit more detail in the next slide.

2 So if you'll go to slide 16. Given that
3 we can't validate these models, the idea here is to rely
4 on a variety of sources of information to show that the
5 model is doing what we would expect it to do.

6 So we use information from the past, to the
7 extent that we have it available. We use information
8 from the present, and we try to project
9 information -- or collect information in the future to
10 address some of the uncertainties.

11 And so in the past we might look at analogs.
12 If we believe that this site will evolve to a different
13 climate, we may look at sites today that have that
14 climate to see how -- what sort of precipitation they
15 may have and so forth and then incorporate that into
16 our modeling.

17 We may look at historical site data that
18 is available, or it may historical data from the region
19 if specific site data isn't available.

20 In the present we may use experiments in
21 the laboratory or the field to look at corrosion, for
22 instance, of a waste package and certain environments.
23 And then we may identify that there are uncertainties
24 in our understanding today and develop future long-term
25 experiments or go out and collect monitoring data to

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1 try and address those uncertainties.

2 And it's a recognition that the world can
3 be a highly dynamic place, as we all know, and so the
4 intent here is to collect these disparate sources of
5 information to support and in some cases they may
6 refute, and that's always a good part of the process
7 to then make your model stronger. But you want to look
8 for that information over the range of expected future
9 conditions.

10 To slide 17. We'll get into more of what
11 the rule specifies in terms of performance assessment.
12 In terms of Part 61, performance assessment is not
13 really a new topic. The staff considers it more of a
14 renaming of the analysis. There currently is an
15 analysis that needs to be conducted to estimate doses
16 from the various environmental pathways.

17 What we're attempting to do with this rule
18 is to kind of bring it up into the modern practice of
19 what a PA is and to make some of the requirements more
20 explicit. In the past they were somewhat implicit,
21 might have been a guidance, and so we're proposing to
22 bring some of those things that we believe are kind of
23 essential elements of a performance assessment to
24 assure that the performance assessments have a
25 consistent level of rigor to them in the requirements.

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1 And those requirements focus on the scope,
2 so what does my analysis need to consider? And we
3 often -- use the terms features, events, and processes
4 there. These are the kind of things that one might need
5 to consider when they're developing their model.

6 A second component of the new requirements
7 are treatment of uncertainty and variability. When
8 you're projecting out the performance this far in the
9 future, there's going to be uncertainties, and there's
10 going to be variability, given the heterogeneity of the
11 natural environment. And so how do you account for
12 that in your modeling?

13 And then finally this issue of model
14 support: How do you ensure that your model is doing
15 what you think it's doing and is a robust model so that
16 you can have confidence in the decision that's made?

17 We've also added a requirement that the
18 performance assessment be updated at site closure so
19 that as information is learned from operations at the
20 site, that can be folded into the performance
21 assessment, because performance assessment, as I'll
22 show in the next slide, is an iterative process, and
23 it's a learning process. It's intended to be.

24 And then lastly we've proposed modifying
25 some of the siting characteristics to be consistent

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1 with disposal of long-lived waste. And what we found
2 as we went through the rule, as we were considering what
3 revisions to make, some of the siting characteristics
4 appeared to be kind of exclusionary; meaning, if you
5 had this condition, you should not put it there.

6 And when you go to long-lived waste, some
7 things maybe don't fit that very well. So an example
8 of like an exclusionary would be a 100-year flood plain.
9 If you're in a 100-year flood plain, you shouldn't put
10 it there.

11 Well, how do you know what your 100-year
12 flood plain is going for the next -- that 100-year flood
13 plain may move in the future as you go out in time, and
14 so we don't know.

15 And so we thought there were certain
16 things, particularly related to hydrologic
17 characteristics that should be considered exclusionary
18 over a time period that was more reasonable, so we
19 looked at a 500-year time period for that.

20 And then there were things that were more
21 what I'll call performance based. And so there were
22 characteristics that they could be there, but we wanted
23 to make sure that they weren't there in a magnitude that
24 would affect the ability of the facility to protect
25 public health and safety.

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1 And so we've kind of bifurcated the siting
2 characteristics to account for some of that -- disposal
3 of long-lived waste. So let's go to slide 18.

4 This is just another diagram to give you
5 what a sense of what performance assessment is, and we
6 also have kind of the major changes to the regulation
7 around it. The regulatory requirements on the bottom,
8 61.13s, are all related to what the performance
9 assessment should include. The ones on the top are
10 more kind of secondary relations to the performance
11 assessment: using the performance assessment to
12 develop your waste acceptance criteria, updating the
13 PA at closure, and then modifying 61.50 or the siting
14 characteristics to be consistent with the disposal of
15 long-lived waste.

16 And at the heart of this, as I mentioned,
17 is performance assessment should be a learning process,
18 and so it's iterative in nature, and we should learn
19 from the information we glean as we operate sites.

20 So slide 19, please. This is the
21 definition -- I won't read this, but essentially it's
22 a performance assessment should evaluate the scope,
23 determine which of those elements are significant,
24 carry those forward, and then analyze the results. And
25 I'll let you read that at your leisure.

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1 Slide 20, please. So in terms of defining
2 the scope, we've tried to provide in the guidance some
3 examples to help with siting or the scope, and this is
4 an example of a hazard map we've included.

5 It kind of gives a perspective -- this one
6 deals with the potential for flooding at various
7 locations in the United States. They're
8 not -- they're included to kind of be illustrative of
9 the types of things that should be considered. They're
10 not necessarily to be used as, say, like, My site's
11 here, and I don't see any shaded spots, so I'm okay.

12 The resolution just really isn't there for
13 that, but to kind of give an idea of some of the hazards
14 that may need to be considered in developing the scope,
15 and that can be found in the guidance.

16 So let's go to slide 21. So we'll stop
17 here, and we're looking for your feedback, one, on the
18 suitability of using an analysis to evaluate the
19 disposal of long-lived waste. There are other
20 approaches. For example, you could set limits and say
21 anything above this limit has to be disposed of using
22 a different approach than near-surface disposal. It
23 could be geologic disposal or something like that.

24 We're looking for feedback on the new
25 requirements for the technical analyses at 61.13 and

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1 then the modifications to the siting characteristics
2 I described, as well as the requirements to update the
3 PA at closure.

4 So with that, I'll turn it back over to
5 Chip.

6 MR. CAMERON: Okay. Let's go to the
7 phones first this time.

8 Jennifer, anybody on the phone want to ask
9 a question or comment on performance assessment?

10 THE OPERATOR: Absolutely. Our next
11 question comes from Mary Olson.

12 Ms. Olson, your line is open.

13 MS. OLSON: Thank you very much for coming
14 to me, and I have to say unfortunately I have to leave
15 early, but I want to return to the comment I made earlier
16 on in the context of this performance assessment
17 presentation.

18 If I am understanding the situation
19 correctly, it is the licensee who is going to do all
20 this work and then be evaluated by whatever regulator
21 applies. So I want to state again that I think the
22 federal regulator who's writing this rule has an
23 obligation to the public to allow us to have access
24 to -- in order words, to require that the licensee and
25 its regulator provide access to the public to

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1 sufficient information that goes into doing these
2 assessments, not just the assessment. And even the
3 assessment is often hard to get.

4 But, you know, the actual models and what
5 is being plugged into the models and the data that's
6 being used and all those things, because if we don't
7 have a table that gives us concentrations that are
8 enforceable by somebody -- right? -- in theory
9 sometime, this all turns to mud. It all just turns to
10 something that slips completely through your fingers
11 and there is no ability for the public to trust but
12 verify.

13 And very few members of the public have the
14 ability to that verify step, but it's the important step
15 that's built into our current system, and I think that
16 this undercuts that, unless you make a regulatory
17 requirement that access to the basic information is
18 available in some way; maybe it's not sitting out there
19 on a website all the time but that it is available.

20 And I think it's incumbent upon the NRC to
21 do that, because otherwise it's litigation, and nobody
22 wants to spend their days that way, except for the guys
23 who are paid way too much money.

24 So my real strong comment on going to
25 performance assessment is not necessarily that I oppose

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1 it, but I oppose it if it becomes a black box to the
2 public.

3 MR. CAMERON: Thanks, Mary. Point well
4 taken. Thank you.

5 MS. OLSON: And I apologize that I will
6 have to hang up now. I will look at the transcript,
7 and I encourage others to stay there, because it's an
8 important topic; I just can't stay myself.

9 MR. CAMERON: Okay. Well, thank you for
10 being with us up unto this point, Mary.

11 MS. OLSON: Yeah. Thank you.

12 MR. CAMERON: And, Josh, anybody else on
13 the phone?

14 THE OPERATOR: I have no further
15 questions.

16 MR. CAMERON: Okay. Thank you.

17 In the room, performance assessment?

18 (No response.)

19 MR. CAMERON: Okay. Let's go to the next
20 topic, and I just -- we got about 50 minutes, and we
21 have about --

22 MR. GROSSMAN: Quite a few.

23 MR. CAMERON: -- five topics, plus you
24 want to say something about the reg guide.

25 So if there are things that you don't think

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1 need detailed coverage, I think people can read it and
2 they can ask their questions. Thanks.

3 MR. GROSSMAN: Okay. Thank you, Chip.

4 The next topic we'll talk about is the
5 intruder assessment. We're on slide 23.

6 Currently the intruder assessment -- the
7 protection of the intruder is handled through the waste
8 classification tables. What we're proposing is to add
9 a specific requirement for an assessment of the
10 intruder to be conducted, to demonstrate that the
11 exposures are maintained at a sufficient level.

12 This is intended to be depicted as kind of
13 a diagram of what an intruder might be. One
14 clarification I want to make is when we're talking about
15 an intruder, I often just slip to intruder, but we
16 actually mean an inadvertent intruder, and this would
17 be someone who doesn't know that they're exposed to
18 radiation from the waste or digging into the waste in
19 some cases.

20 And this is someone who is onsite; they're
21 not being exposed necessarily to releases offsite.
22 They've come onto the site after some of the controls
23 have failed and occupy the site for some amount of time;
24 maybe build a house or do some other activity and then
25 gain exposures.

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1 And so this is a representation of what was
2 done to develop the waste classification tables as a
3 schematic in terms of building a house onsite and then
4 living on that -- in that residence.

5 So that will go to slide 24. This is a new
6 analysis, as I indicated. It's similar to the PA, but
7 it's a stylized analysis in the sense that we are
8 looking -- we're very interested in what the person is
9 doing onsite, and so we use a set of stylized kind of
10 scenarios to help bound what that might be, because what
11 a person does can be somewhat limitless.

12 And so we're looking at, in general,
13 certain scenarios to understand what an intruder might
14 be exposed to. The requirements in 61.13 are similar
15 to the performance assessment, defining the scope of
16 your intruder assessment, making sure that intruder
17 barriers are represented, and treating uncertainty and
18 variability.

19 The performance objective that the
20 intruder assessment would demonstrate then is in 61.42,
21 and that's the 500 millirem for the 1000 years, and the
22 other objectives for the protective assurance and the
23 performance period. And then there's also a
24 requirement to update the intruder assessment at
25 closure.

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1 Slide 25, please. This diagram is taken
2 from the guidance. I believe it's figure 4-2 in the
3 guidance, and chapter 4 deals with approaches for
4 conducting the intruder assessment.

5 The rule does require specific assessment,
6 and it also specifies that the scenarios should be based
7 on scenarios that are realistic and consistent with
8 expected activities in and around the site at the time
9 of closure.

10 And then it should demonstrate that a dose
11 limit of 500 millirem is met for the compliance period.
12 So we'll move to slide 26.

13 We're seeking your feedback on a number of
14 items in the inadvertent intruder assessment; on the
15 definitions for an inadvertent intruder and for the
16 assessment in section 61.2.

17 And the concepts again, we have kind of a
18 philosophy of the intruder assessment. Though these
19 aren't requirements, they kind of give some of the
20 background on why we do this and how we might do it;
21 the requirements of the analysis in 61.13, and then also
22 the update at closure, and then the revised performance
23 objective for the intruder assessment.

24 Currently the rule only requires that the
25 intruder be protected in the way that an intruder is

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1 shown to be protected, by meeting the waste
2 classification tables. So that will be a change to the
3 performance objective as well; we'll have a dose limit
4 in there.

5 MR. CAMERON: Okay. Great. Any
6 comments, questions on inadvertent intruder assessment
7 requirements in the rule?

8 (No response.)

9 MR. CAMERON: Okay. We'll go to the
10 phones, and then we'll come back and see if anybody has
11 anything on that.

12 Josh, anybody on the phone on intruder
13 assessment?

14 THE OPERATOR: I have no questions in the
15 queue.

16 MR. CAMERON: Okay. Anybody?

17 (No response.)

18 MR. CAMERON: Okay. Let's move on to the
19 next topic.

20 MR. GROSSMAN: Okay. Now we're going to
21 deal with the other time periods, the second and third
22 time periods, so we'll talk first about the second time
23 period, the protective assurance period and a little
24 bit about the analysis to conduct to demonstrate those
25 performance objectives for that time period.

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1 It is the second tier of the analysis
2 timeframe; it is required for all types of low-level
3 waste in the proposed rule. The proposal is really as
4 an optimization-type process, rather than comparison
5 to a dose limit like during the compliance period.

6 And the goal here is to minimize doses.
7 It's similar to what's done for as low as reasonably
8 achievable in our regulations and in the nuclear
9 industry, but it's not the same, because ALARA is
10 typically you're looking at it compared to a dose limit,
11 and we don't have a dose limit in this case; we have
12 the goal to minimize doses.

13 The language that the Commission is
14 proposing is minimize doses with a goal of hitting 500
15 millirem per year or a level based on economic and
16 technical considerations, and so it may vary from the
17 500-millirem target, depending on the site and so
18 forth.

19 The approach and guidance that we kind of
20 lay out on how to conduct this analyses is largely what
21 I'll call a risk-based discounting, and so if your
22 facility is a high-risk facility, then you need to put
23 more effort into demonstrating that than if you have
24 a lower risk.

25 And so if we could go to slide 29, we'll

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1 illustrate some of that in a figure. This comes from
2 our guidance document, and so if you are extending your
3 analyses into the protective assurance period and
4 you're only at a few millirem, then you're at a low level
5 of risk, and so the amount of effort you need to put
6 into that analyses to demonstrate you're meeting the
7 objectives would be less than if you're approaching,
8 say, 500 or somewhere higher on this triangle.

9 Let's go to the next slide, then, and we'll
10 talk about what we're seeking feedback: on the
11 analysis requirements, and in general the approach that
12 we talk about in the guidance is to extend your other
13 analyses from the compliance period into the protective
14 assurance period.

15 This isn't necessarily a separate
16 analysis; it's more you're taking those models that
17 you've built and then going out further in time and
18 looking at the second time period.

19 Now, we're also seeking feedback on this
20 optimization approach. There may be other approaches
21 that you feel we should consider, and we would certainly
22 like to hear comments and feedback on that.

23 And then the minimization target, whether
24 that's appropriate or not, and then our risk-based
25 discounting kind of guidance, and that was illustrated

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1 in our last slide, which I touched on briefly.

2 MR. CAMERON: Okay. Good. Is this
3 clear? Anybody have questions or comments about this?

4 Larry.

5 MR. CAMPER: Just a quick insight. As you
6 look at this issue, the staff's proposed rule proposed
7 a period of compliance at 10,000 years. And the reason
8 that we did that in the final analysis had a lot to do
9 with a NUREG document, NUREG-1573, which was developed
10 years ago by a performance assessment group, a PAG, that
11 recommended that was a reasonable or an appropriate
12 period of compliance for a low-level waste facility.
13 And so the staff did recommend a period of compliance
14 at 10,000 years.

15 The Commission changed that. The
16 Commission changed it to 1,000 years, but also added
17 the second tier, the performance assurance period, to
18 10,000 years.

19 And I think the Commission did that
20 because, on the one hand, it was concerned about a
21 period of compliance in a reasonably foreseeable period
22 of time. One could argue whether 1,000 years is
23 reasonably foreseeable or not, but it's a concept
24 that's established -- the Department of Energy uses it,
25 for example.

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1 And so out of that staff proposal and
2 Commission interest in trying to recognize what the
3 staff was getting at a result of NUREG-1573, the
4 Commission directed the staff to use this methodology,
5 performance assurance period up to 10,000 years.

6 So as you look at it and think about it,
7 I think it's useful to know sort of the history behind
8 it and how it came to be and why. So you can factor
9 that into your consideration.

10 MR. CAMERON: Okay. Josh, anybody on the
11 phone on this subject?

12 THE OPERATOR: I don't have any questions
13 in the queue.

14 MR. CAMERON: Okay. Let's go out to Mike.

15 MR. BENJAMIN: Just a general comment on
16 PAs in general. Having been a licensee for many, many
17 years, I find it enjoyable to work in an environment
18 where I'm either right or I'm wrong, pretty black and
19 white; both 10 CFR and the applicable state
20 regulations.

21 Now it appears that you have added a great
22 deal of subjectivity to your regulations -- or want to
23 propose a lot of subjectivity to your regulations. And
24 it's really, really tough to comply with subjective
25 languages.

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1 MR. CAMERON: Okay. Thanks, Mike, for
2 that comment.

3 And, Chris, you look like you understand
4 the subjectivity issue.

5 MR. GROSSMAN: Yeah. I appreciate the
6 comment, and we certainly would love to hear feedback
7 on that from the licensee's perspective; from anyone's
8 perspective, actually.

9 MR. CAMERON: Okay. Let's go back here,
10 and if you could just please introduce yourself.

11 MR. THOMAS: Steve Thomas with Savannah
12 River Remediation.

13 Chris, you said -- several times you
14 talked about a 500-millirem threshold, then you talked
15 about -- going back to the subjective part -- that it
16 could be affected by technical and economical factors.

17 Do you see that in driving that threshold
18 higher or lower or both?

19 MR. GROSSMAN: I think the way it's
20 written in the rule, I think it could go either way,
21 depending on the considerations. In the guidance we
22 talk about that, so I encourage you to look at the
23 guidance a little bit.

24 If it were to be driven up or if you're
25 exceeding the 500-millirem, then there might need to

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1 be some considerations like is there another
2 alternative for disposal than this site.

3 But that's in guidance; it's not in the
4 regulations, and so the way the rule's written, as I
5 understand it, it could go either way, based on those
6 considerations.

7 MR. CAMERON: I guess that's an
8 interesting thought, is that there may be -- people may
9 see things that are the guidance that they think --

10 MR. GROSSMAN: Should be in the rule
11 versus --

12 MR. CAMERON: -- should be in the rule.

13 MR. GROSSMAN: Yeah. Or the other way
14 around, things in the rule that folks may think should
15 be in guidance.

16 MR. CAMERON: Okay. Do you have another
17 comment, sir?

18 MR. THOMAS: A follow-up to that: How
19 does that compare, then, to ALARA? I mean, you talk
20 about the ALARA considerations as well, and I
21 understand that part, but then when you -- you know,
22 when you're saying the threshold that could be
23 determined to be lower -- so how do those compare?

24 MR. GROSSMAN: Well, I think -- I don't
25 want to get into too long a discussion on it, but I think

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1 ALARA is tend to viewed in the context of a limit, and
2 so you're required to meet the limit, but then you're
3 trying to drive it lower to make sure that you
4 have -- what I'll say, like some defense-in-depth, so
5 to speak, you know, you're below your limit so that you
6 can show you have some safety margin.

7 But if you're wrong about some of your
8 assumptions or your approaches, then you have some
9 margin that will offer additional protection.

10 So I think traditionally ALARA is viewed
11 as driving kind of one direction, and this may be viewed
12 as a slightly different approach in that it could go
13 either way, depending on those two -- the economic and
14 the technical considerations.

15 MR. CAMERON: Okay.

16 MS. YADAV: Chris, can I just add one more
17 thing?

18 A lot of this subjectivity was kind of
19 introduced to us or given to us by the Commission in
20 this recent round of SRMs, so, you know, we had a
21 compliance period in the preliminary rule language that
22 was 10,000 years that got split into a compliance period
23 of 1,000 years and then a protective assurance period,
24 with a different sort of dose target.

25 So we would be interested in hearing your

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1 specific comments, if you think it's a lot of
2 subjectivity, hard to meet those regulations, hard to
3 deal with that 500 millirems.

4 If you could submit, you know, detailed
5 comments on that, then the Commission could give us
6 different direction.

7 MR. CAMERON: Lisa.

8 MS. LONDON: Yeah. This is Lisa London
9 from the NRC Office of General Counsel. One additional
10 note to consider when you're formulating your comments
11 on subjective regulations -- requirements, is that as
12 an overarching theme, the agency really is moving more
13 towards risk-informed performance-based regulations,
14 as opposed to prescriptive.

15 And so that may actually constitute a part
16 of what you're looking at and saying, well, this doesn't
17 look like a clear if-A-then-B. But the intent behind
18 that movement on the Commission's part and the agency's
19 part is really to build in a little bit more flexibility
20 to allow people to demonstrate how in fact they meet
21 the regulations.

22 MR. CAMERON: Thanks, Lisa. Good.

23 Mike?

24 MR. BENJAMIN: This is Mike Benjamin with
25 Energy Solutions again.

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1 I think Ms. Olson brought up a key item with
2 the subjectivity. If I spend the time and the effort
3 and the dollars to create a performance assessment and
4 I select a series of features, events, and processes,
5 you may have a different set of features, events, and
6 processes; the gentleman behind me may have a different
7 set. So it does nothing more than present a lot of
8 litigation costs over a period of time that no one's
9 doing anything but making lawyers richer.

10 MR. CAMERON: Is there anything?

11 (No response.)

12 MR. CAMERON: Okay. Let's go to
13 performance period analysis.

14 MR. GROSSMAN: Okay. So we've covered
15 the first -- the compliance period, the first period,
16 and the second period, the protective assurance period.
17 Let's talk a little bit about the third tier of our time
18 framework here.

19 This one is applicable to times after
20 10,000 years, as we've mentioned. It's not
21 necessarily a requirement for all facilities; it
22 depends on whether you take significant amounts of
23 long-lived waste. And we've defined that in table A,
24 which is introduced to the regulation in these proposed
25 rules.

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1 The concentrations, whether you trip this
2 third period, are based on a disposal site average,
3 using the sum-of-fractions approach. The
4 sum-of-fractions approach can be found in section 61.55
5 of the regulation; when you have multiple
6 radionuclides, how you consider that in comparing it
7 to the tables.

8 The real goal here of this analysis is to
9 understand how the disposal site will limit long-term
10 impacts. There's a lot of uncertainty that we're
11 dealing with at these long timeframes, but we want to
12 get a sense of how is the system going to perform to
13 these challenges, and then what might we expect at these
14 timeframes out in the future?

15 And then how -- do the features that we've
16 incorporated into the site design and that are inherent
17 in the site characteristics help us to reduce risk?
18 The proposed rules are not proposing any sort of dose
19 limit for this.

20 The goal, the objective here is to
21 minimize. to the extent reasonably achievable, which
22 really is to take a look and see how robust is our system
23 for some of these challenges that may occur at long time
24 periods, if we're willing to take these long-lived
25 wastes in significant quantities.

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1 Let's go to slide 33. One thing I want to
2 step back -- Larry mentioned kind of the protective
3 assurance period and about the Commission kind of going
4 in a different direction than the staff's initial
5 recommendation.

6 This was kind of a holdover from our
7 initial recommendation and hasn't change significantly
8 as part of the Commission redirection. So this is
9 something staff had initially proposed for the post
10 10,000 years.

11 So this is table A. And essentially what
12 we're looking at here is we've derived this from waste
13 classification system, and these are the Class A
14 limits, Class A being the kind of lowest class of waste,
15 the least radioactive, so to speak -- or, sorry, the
16 shorter-lived things; not necessarily the less
17 radioactive.

18 So the values you see here will correspond
19 to those Class A limits. Now, there have been some
20 changes to that. 61.55 limits did not include uranium;
21 they were for transuranic radionuclides, so we've
22 incorporated uranium here with the alpha-emitting
23 nuclides, along with alpha-emitting nuclides, to cover
24 both of those.

25 And so to give you a sense of what the trips

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1 are for that, let's go on to slide 34. The table,
2 though, isn't necessarily everything, and I wanted to
3 highlight -- there's a lot of words here, and I didn't
4 bring a pointer; I apologize.

5 But about halfway down on the right side
6 of this paragraph we have "the values listed in table
7 A of this paragraph, or if necessitated by
8 site-specific conditions."

9 So even though you may not trip it by the
10 table, there may be some conditions -- and we talk about
11 this in our guidance in more detail; I won't spend a
12 lot of time elaborating on those here -- but that might
13 necessitate a look at the third period, even though you
14 don't trip the table A values.

15 And so the performance period chapter in
16 the guidance talks about that in more detail. I refer
17 you there.

18 Slide 35 -- I won't spend long on this
19 slide, but this is taken from the guidance; it kind of
20 gives a listing of the types of isotopes that might be
21 considered long lived in a low-level waste facility.

22 So we'll move on to slide 36 and go out for
23 your comments and questions on the performance period
24 analyses: the approach to this time period that we
25 proposed; the use of the Class A values as kind of the

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1 trigger for when you need to conduct the analyses for
2 this time period; the averaging approach to
3 concentrations -- the rule language is not very
4 specific on this; in guidance, though, we talk about
5 how you average in more detail, and so that's something
6 you might want to check out too; and the question of
7 whether you believe that should be a rule versus
8 guidance. That's always a good question or a good
9 comment that we like to receive.

10 Feedback on whether minimization to the
11 extent reasonably achievable is an appropriate
12 objection for this time period, and then also to
13 identify features that contribute to limiting the
14 long-term impacts, is another requirement of this time
15 period; whether that's appropriate.

16 So with that, Chip?

17 MR. CAMERON: Performance period
18 comments, questions?

19 Let's go to Roger, and then we'll to the
20 phones. Roger.

21 MR. SEITZ: Just a quick comment. I guess
22 my comment would be I'm not sure that it's appropriate
23 to have that table in the rule.

24 Part of it is related to what you were just
25 saying. My understanding from your statement before

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1 is the reason you want to define long-lived nuclides
2 is to tell people when they need to go to that extended
3 time.

4 And now you're saying that just because you
5 meet the table doesn't mean you may not need to go to
6 that longer time, and that goes back to my original
7 argument that, won't your PA make that decision for you?

8 Won't your results indicate that things
9 may still be going up at 10,000 years, so we need to
10 think about that timeframe, without having a definition
11 of that.

12 MR. GROSSMAN: Roger, I appreciate the
13 comment, and I would ask when you submit your comment,
14 if you have proposed, you know, language changes or what
15 should be moved to guidance and so forth, we would very
16 much appreciate that for our consideration.

17 Thank you.

18 MR. CAMERON: Okay. Thanks, Roger

19 Josh, anybody on the phone on this
20 particular subject?

21 THE OPERATOR: Not currently, but as a
22 reminder, in order to ask a question, you can press *1
23 and record your name at the prompt.

24 MR. CAMERON: Okay. And I think what
25 we'll do is move on to safety case, defense-in-depth,

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1 and we'll catch up with anybody who does have a comment
2 on the phone.

3 Go ahead.

4 MR. GROSSMAN: Okay. So we're on slide
5 38.

6 I want to give just -- I'll do this quickly
7 in the interest of time, since we're pushing up against
8 the nine o'clock hour here.

9 The Commission directed the staff to
10 introduce the concept of a safety case to Part 61 and
11 provided the staff with some direction on how to do
12 that. The safety case comes from an international kind
13 of concept.

14 The International Atomic Energy Agency,
15 the IAEA, has developed this approach for the safety
16 case, and it's a very comprehensive approach. We
17 believe that the NRC regulations, as exist, are
18 functionally similar, although they're not identical;
19 they don't match one to one necessarily.

20 But we include many of the areas that the
21 IAEA's definition of safety case includes. In the
22 middle here, in D, you'll see that the safety assessment
23 is a component of their safety case; it's an important
24 component, but it's one of many components.

25 And we would equate essentially our

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1 analyses to that safety assessment, or at least a
2 portion of what the IAEA defines as safety assessment.
3 I'll talk a little bit about that on the next slide.

4 You can find more details on IAEA's safety
5 case and how they define that and structure it
6 in -- they have a series of guidance documents that they
7 publish, and this specific one is called Specific
8 Safety Guide; it's SSG-23. And all theirs are fairly
9 easy to find on their website.

10 So the Commission directed the staff to,
11 in the proposal, to include-- to more clearly
12 elucidate the safety case as part of the licensing
13 decision.

14 Let's go to slide 39 and talk a little about
15 the safety assessment. What you see here is that in
16 some cases it might be handled differently at the NRC.
17 For instance, the IAEA's version of safety assessment
18 includes non-radiological environmental impacts.

19 NRC does an approach similar to that; it's
20 just in a different part of our regulations than maybe
21 Part 61. And so we believe -- that's why we believe
22 functionally we're very similar, even though we don't
23 match necessarily one to one with their version.

24 But specifically on slide 40 the proposed
25 rule includes a discussion of the safety case and

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1 defense-in-depth protections, and the Commission
2 directed the staff to say that the safety case includes
3 two primary components, as well as other components;
4 the two primary components being the technical analyses
5 and then your defense-in-depth, and those two primary
6 components would make the safety case, which would be
7 used to support the licensing decision.

8 And so we try to explain how the
9 combination of the defense-in-depth and the technical
10 analyses really would be used to support that.

11 I've included here in the lower left the
12 definition for defense-in-depth, and I just want to
13 highlight three words from that defense-in-depth. We
14 borrowed this from kind of the agency definition; we
15 haven't tried to create a new definition that's waste
16 specific in this case.

17 And the three words I want to highlight
18 here are the "use of multiple, independent, and
19 redundant layers." Multiple is somewhat obvious, I
20 think, in that you don't want to rely on just a single
21 layer of protection to ensure safety.

22 The "independent" and
23 "redundant" -- independent is to try and avoid
24 common-cause failures, where a single event or process
25 might cause several barriers to fail simultaneously,

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1 which would defeat kind of the purpose of having them.
2 And the redundancy, what we mean here in the context
3 of waste is not necessarily that you have two pumps,
4 as you might in an engineering facility, but that the
5 safety attributes of your site or your design have some
6 redundancy.

7 And so the functions that those site
8 features or site characteristics perform, there's
9 redundancy in that, and so that might be provided by
10 an engineered feature or might be provided by a natural
11 feature of the site.

12 And we talk about that in the guidance a
13 great deal. We talk a lot about the approaches of how
14 to use the results of your other analyses to demonstrate
15 that defense-in-depth is there and make your argument
16 in the safety case.

17 So slide 41, this is the definition of the
18 safety case, and it's essentially a collection of all
19 the information that demonstrates that the site will
20 perform safely.

21 And the approach that we've used in the
22 rules is basically to say that the information that a
23 licensee previously submitted as part of their license
24 application is the safety case. That's why we believe
25 functionally we're similar, is a lot of the information

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1 that was provided there is what we would expect in the
2 safety case, and so we were already doing that, but now
3 we're making it explicit through the proposals.

4 Slide 42. So we're looking for feedback
5 on the definitions for safety case and
6 defense-in-depth; you'll find those in 61.2. We talk
7 in the concepts kind of the philosophy of safety case
8 and defense-in-depth and what that means for low-level
9 waste in 61.7, so we'd appreciate comments on that.

10 The requirements for a safety case you'll
11 find in 61.10, which is the information that a licensee
12 would need to provide as part of its application. And
13 then the requirements for the defense-in-depth
14 analysis in 61.13.

15 And there you'll find a requirement to do
16 an analysis; a lot of the meat is really in the guidance
17 document on how you use -- and we really emphasize using
18 the results from your other analyses to make the
19 argument that there are multiple independent,
20 redundant layers of defense in the system. And then
21 a requirement for all the analyses, basically to update
22 them at closure.

23 MR. CAMERON: Okay. Josh, anybody on the
24 phone on the safety case, defense-in-depth issue?

25 THE OPERATOR: Not at this time.

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1 MR. CAMERON: Okay. Thanks, Josh.

2 How about here in the room?

3 Mike?

4 MR. BENJAMIN: Thank you. This is Mike
5 Benjamin again, with Energy Solutions.

6 If, during the performance you're
7 conducting the PA, you find a FEP, a feature, event,
8 or process, that occurs 5,000 years post closure that
9 may result in a hypothetical dose greater than your
10 target -- 500 millirem for your target, will the waste
11 disposal facility need to provide an additional
12 defense-in-depth at the point of closure -- the date
13 of closure, or sometime closer to when that FEP would
14 occur or is predicted to occur?

15 MR. GROSSMAN: That's a good question. I
16 don't know if I have an answer for that for you tonight,
17 Mike. I'll have to think about that a little more.
18 I want to go back and look at our guidance and see what
19 we've said.

20 MR. CAMERON: Okay.

21 Anybody else?

22 But, Chris and Larry, you understand
23 Mike's question.

24 MR. CAMPER: Yeah, we do.

25 MR. CAMERON: Okay.

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1 MR. CAMPER: Just a context thing, again.
2 I think I certainly would argue, and I think most of
3 you would, that safety case has been embodied in Part
4 61 forever.

5 What is distinctly different here, though,
6 is a move by our Commission to articulate the use of
7 the term "safety case" and in fact to define it: DID,
8 defense-in-depth, plus performance assessment equals
9 safety case.

10 Now, that does align, as Chris pointed out,
11 with what is used at the International Atomic Energy
12 Agency, so it is a movement, if you will, although not
13 necessarily profound necessarily, but certainly a
14 movement in terms of regulatory philosophy to align
15 with what happens internationally.

16 So as you look at this, think about that
17 and ask yourself what do you think about that
18 philosophically.

19 MR. CAMERON: Okay. I think we're at
20 waste acceptance criteria.

21 MR. GROSSMAN: All right. Slide 44. The
22 proposed rule adds new requirements for developing
23 waste acceptance criteria. These are specified at
24 section 61.58, which is actually in the rule today.
25 We're proposing to modify that to remove what's

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1 currently there and replace it with this waste
2 acceptance -- these waste acceptance requirements,
3 because we believe the waste acceptance requirement
4 would functionally replace what's currently there and
5 there wouldn't be a need for it necessarily.

6 The requirements allow licensees to
7 develop what's acceptable for disposal based on the
8 current waste classification system or develop
9 site-specific criteria based on the technical
10 analyses.

11 And if you look closely at 61.58, you'll
12 see that the overarching goal is to make sure that the
13 performance objectives are demonstrated. So a
14 licensee may elect to use the tables, but if that
15 conflicts with demonstrating performance objectives,
16 there's an issue there, and so the performance
17 objective are kind of -- that's why I said that at the
18 high level there, they're the important piece of the
19 regulation, and they need to be demonstrated. So the
20 flexibility is there, but it still needs to demonstrate
21 that the performance objectives are met.

22 The new requirements focus in three areas:
23 developing your criteria and then how to characterize
24 the waste once you've developed criteria to show that
25 it's acceptable, and then how to certify that the waste

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1 that's being disposed is acceptable for disposal. So
2 there are some requirements there.

3 Let's go to slide 45. This is from the
4 concept section of the rule, and it's a little bit of
5 a philosophy of waste acceptance. I'll let you read
6 that. This is emphasizing the "or" pathway, for the
7 waste classification or the site-specific.

8 So we'll move on to slide 46. So we're
9 looking feedback on the concepts regarding waste
10 acceptance and the approach that we're proposing,
11 whether it's enough flexibility, too much flexibility,
12 not enough, whatever that may be; whether there's a
13 better approach, and then the requirements in 61.58 for
14 how one would demonstrate the waste is acceptable.

15 So with that, I'll turn it back over to
16 Chip.

17 MR. CAMERON: Okay. Anybody have any
18 questions or comments on waste acceptance criteria?

19 Yes?

20 MR. LEWIS: Thanks, Chip. This is Mark
21 Lewis, Energy Solutions.

22 I applaud the NRC for specifying an option
23 there for site-specific waste acceptance criteria.
24 Obviously if you're going to go to all the trouble to
25 do a performance assessment and all the other analyses

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1 that are in here, that ought to be able to drive what
2 you can dispose of and what you can't.

3 But as Mike said earlier, it's very
4 difficult to deviate from black and white. I mean,
5 that's what people want; that's what you can hang your
6 hat on.

7 So I think it becomes very difficult to use
8 a site-specific waste acceptance criteria to come up
9 with higher concentrations of waste that you can
10 dispose of and that kind of stuff.

11 So what my question really is is if you look
12 at the current waste classification tables, they were
13 really developed for a very conservative scenario;
14 maybe a, you know, humid environment versus an arid
15 environment.

16 Maybe an approach would be, so that you
17 have some of this black-and-white waste
18 classification, is to have a waste classification table
19 for a humid environment and one for an arid environment,
20 rather than having to use a site-specific waste
21 acceptance criteria through your performance objective
22 for the material

23 MR. CAMERON: Thank you for that.

24 And, Larry?

25 MR. CAMPER: Thank you, Mark. You've

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1 raised an extremely interesting issue. This came up
2 in Austin as well, and I think, again, some context:
3 I recall discussing this issue specifically with, you
4 know, several of the Commissioners in the course of us
5 working on developing the rule.

6 And there was a desire by the Commission
7 to have an "or" pathway, but the practical matter is
8 we have grown up in regulatory space for many years now
9 in the waste classification scheme, and if you go look
10 at the licenses that exist today, you'll find that the
11 authorization for disposal is built around Class A,
12 Class AB, C, you know, and each of them; Class A in Utah;
13 A, B, and C in the others.

14 So the ultimate utility of the WAC, the
15 waste acceptance criteria, as a disposal tool remains
16 to be seen. Certainly the staff agrees that having the
17 option makes sense, and we felt if the option was going
18 to exist in the proposed rule, you need to require a
19 WAC and do all the things that are necessary to make
20 it work in a functional way.

21 But I think that your comments could be
22 well served by addressing this question of the utility
23 of it and what does it mean as a practical matter, which
24 is what you're really getting at, given our structure.

25 And who knows? Maybe a new course: The

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1 states that operate these sites and/or the criteria
2 that goes in the license might change, but that would
3 take some time and I think some focused effort.

4 MR. CAMERON: Okay. Josh, anybody on the
5 phone that has a comment or a question?

6 THE OPERATOR: Not at this time.

7 MS. YADAV: Chip, can I go back to --

8 MR. CAMERON: Yeah. Go ahead, Priya.

9 MS. YADAV: I just wanted to address the
10 comment that -- the question that, Mike, you had, just
11 because I have the guidance in front of me on that.

12 Brandon, can you go back to slide 29?

13 (Pause.)

14 MS. YADAV: So in section 6 of the guidance
15 we talk about the protective assurance analysis, so up
16 to 10,000 years.

17 So your question is at 5,000 years, if you
18 see something that will put you over the 500-millirem
19 target, are you required to do anything now. That's
20 the question; right?

21 So I just wanted to say what we have in
22 guidance right now -- it's in section 6, on page 6.4,
23 but we're saying if you are above level 3, if you have
24 above 500 millirems per year, if you have something that
25 puts you above the 500 millirems per year, changes to

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1 design process, waste acceptance, or other areas are
2 expected of the licensee unless they are shown to be
3 impractical based on technical and economic
4 considerations.

5 So that's kind of our starting point, is
6 if you do an analysis within that 10,000-year
7 timeframe -- and, Chris, correct me if I'm wrong -- and
8 you are over that 500-millirem per year, we are
9 recommending that, you know, you work with your
10 regulator and, you know, prove that another site is not
11 more suitable for that waste disposal.

12 MR. CAMERON: Okay. Thanks, Priya.

13 Is there anything that we didn't address
14 specifically that someone has a comment or question on?

15 Okay. We're going to go to Mike, and then
16 we're going to see if Josh has anybody on the phone on
17 this open-ended subject.

18 MR. BENJAMIN: Thank you. This is Mike
19 Benjamin with Energy Solutions.

20 This is posed as a question, but it's
21 really a comment: If the original intent of the
22 rulemaking was to provide improved health and safety
23 for the long-term protection of the public and the
24 environment from the disposal of large quantities of
25 DU, why not add subpart (h) to Part 61, which would

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1 provide the requirements for a disposal facility that
2 desired to dispose of large quantities of DU?

3 As a subpart of Part 61, waste disposal
4 facilities that disposed of short-lived radionuclides
5 and limited quantities of long-lived radionuclides
6 would not need to comply with the requirements that only
7 have an impact on long-lived radionuclide disposal.

8 MR. CAMERON: Okay. There's a specific
9 recommendation.

10 And do you want to say anything about that,
11 Larry?

12 MR. CAMPER: Yeah. Very good comment.

13 When we were doing this, we actually
14 pondered a number of different ways to try to go with
15 this. I mean, one of the, for example, early on was
16 we looked at 61.58, which allows alternate
17 classification on a case-by-case basis.

18 But that's a by-exception provision, so
19 it's not a regulatory tool that you would use to,
20 presumably, provide regulatory oversight for in excess
21 of a million tons of disposal of depleted uranium, if
22 that becomes a reality.

23 But in the final analysis, what we were
24 directed to do was a limited specific rulemaking, and
25 so we tried to do that by requiring a site-specific

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1 performance assessment, but it gets a little
2 complicated going beyond DU when you realize the other
3 reasons that we determine we need to do the rule.

4 So it is beyond depleted uranium, so
5 creating some subsection for depleted uranium only
6 would not have addressed the other problems that we
7 identified in my slides early on as a basis for the need
8 to do the rulemaking.

9 MR. CAMERON: So that may be helpful in
10 writing your comment on that.

11 Josh, anybody on the phone?

12 THE OPERATOR: Yes, one moment. It looks
13 like we have a couple queuing up.

14 (Pause.)

15 THE OPERATOR: I believe the name is Don
16 Reed.

17 MR. GREEVES: Yeah. This is John
18 Greeves. I'd like to ask NRC staff if they see any
19 implications for waste incidental to reprocessing.
20 The legislation for WIR, waste incidental to
21 reprocessing, specifically points at performance
22 objectives in Part 61.

23 If those performance objectives change,
24 what are the implications for implementation? Do you
25 understand the question?

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1 MR. CAMERON: I think the NRC staff does.
2 Do we have any comments in response to
3 John?

4 MR. GROSSMAN: I don't know specifically
5 for each site. I don't know if I have the time or want
6 to make a comment on that at this point.

7 But I think the legislation points to the
8 Part 61 performance objectives for that process, and --

9 MR. GREEVES: Correct.

10 MR. GROSSMAN: So as they change, how that
11 affects the process, I'm not entirely sure yet what that
12 will mean for that process.

13 MR. CAMERON: I guess --

14 MR. CAMPER: The objectives don't change.

15 MR. GROSSMAN: The performance objectives
16 do change, Larry, in the rule. We're adding
17 the -- we've basically taken 61.43 and broken it into
18 three subparts.

19 MR. CAMPER: Okay. I see what you mean.

20 MR. GROSSMAN: So the timeframes now are
21 specified.

22 MR. CAMPER: But the number doesn't --

23 MR. GROSSMAN: Now, functionally, for a
24 site like SRS, they're already doing long-term
25 analyses; it may not be a big implication, but I don't

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1 want to get into the details right here.

2 MR. CAMERON: Okay. And I guess the
3 comment would be, if it was phrased in terms of a comment
4 rather than a question, is that the NRC should look at
5 the implications for WIR from changing Part 61. Would
6 that be correct, John?

7 MR. GREEVES: The question is,
8 prospectively, which applies, the old performance
9 objectives or the new performance objectives? And the
10 NRC is saying everything applies to the agreement
11 states. Well, maybe everything applies to the WIR
12 process. So I think it's knotty question, and it
13 should be addressed, because it's got [phone cuts out]
14 attached to it.

15 MR. GROSSMAN: It's a good question, John.
16 Not being a lawyer, I don't know the answer to that,
17 but, you know, the legislation does call out the
18 performance objectives.

19 MR. CAMERON: Okay. Josh, anybody else
20 on the phone?

21 THE OPERATOR: Yes. I would remind
22 everyone to please record your name clearly. I have
23 Mr. URENCO on the phone.

24 MR. CAMERON: Mr. URENCO?

25 MR. MUTH: This is Joe Muse from URENCO.

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1 MR. CAMERON: Okay. Hi, Joe.

2 MR. MUTH: It's more of a clarification.
3 When Larry spoke before about the future possibility
4 of rulemaking to satisfy the Commission action item,
5 I didn't clarify when a comment period would be opened
6 up.

7 Is -- were you intending to have comments
8 accepted from the public when the rulemaking is final
9 in 2017, or was that going to wait until the agreement
10 states had formulated their responses to the
11 rulemaking?

12 MS. LONDON: Hi. This is Lisa London from
13 the Office of General Counsel. I assume you're talking
14 about the specific direction that staff received from
15 the Commission to go out and seek comments on the need
16 for a future rulemaking. Correct?

17 MR. MUTH: That is correct.

18 MS. LONDON: Okay. So we were -- and
19 Larry might want to chime in, but my understanding is
20 what Larry said earlier was we were tasked with doing
21 that now, but the issue that may arise is that people
22 may not want to comment until they've actually gone
23 ahead and seen the final rule, so that once they get
24 a look at what results from this current rulemaking,
25 once they get a look at the final product, then they'd

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1 be able to pontificate on whether they believe there's
2 a necessary basis for a further --

3 MR. MUTH: And, again, for clarity, has
4 the NRC formulated how they're going to do that? Is
5 it going to be through the *Federal Register* or will it
6 be through some other method.

7 MR. CAMPER: This is Larry. Thank you for
8 your question, by the way. Let me explain that we do
9 have this task now, as Lisa points out, to address this
10 question and to go back to the Commission and
11 communicate.

12 And we were -- we are reviewing and
13 analyzing these comments that we get on this question,
14 but then in a staff meeting probably about a month ago,
15 we had an Aha moment, in which we said, You know, we
16 can do that, and we will do that, but it would be
17 unreasonable, in the final analysis, to expect members
18 of the public and, in particular, certain members of
19 the public, who have very strong concerns about this
20 question, to be able to provide their final comments
21 in the absence of a final rule.

22 And so I said this in Austin; we're going
23 to say this to the Commission when we provide the final
24 rule, and we're going to point out at that time that
25 more needs to be done.

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1 When we do that, we'll probably have some
2 suggestions for Commission consideration. I mean,
3 amongst the tools we might use would be an FRN that would
4 ask some questions, or we might have one or more public
5 meetings to discuss the matter.

6 But in the final analysis, the Commission
7 will direct the staff as to what it wants to do about
8 that outstanding question and how to collect
9 information.

10 MS. LONDON: What if they got comments
11 now?

12 MR. CAMPER: Yeah, we want the comments
13 now, by all means.

14 MS. LONDON: If you have initial thoughts
15 now, we're not telling you, wait until the final rule
16 and then we'll figure out an avenue for you to provide
17 comments.

18 If you have thoughts now on whether there's
19 a need for a future rulemaking, do go ahead and provide
20 those comments.

21 MR. CAMPER: Yeah. Absolutely, please do
22 that. We want those comments now, because it will help
23 us formulate what we're able to say to the Commission
24 around the topic that we've heard thus far, so very
25 important to comment now, and then there is that

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1 outstanding issue that we have to address and discuss
2 with the Commission.

3 MR. CAMERON: Okay. Joe, does that
4 answer your question?

5 MR. MUTH: Yeah, it does. And I think I
6 got on the record, in fact, in Austin that I didn't think
7 that reclassification of the waste acceptance tables
8 was necessary. Chip, that's my own opinion.

9 MR. CAMERON: Okay. Thanks, Joe.

10 And, Josh, anybody else?

11 THE OPERATOR: I show no further questions
12 in the queue.

13 MR. CAMERON: Okay. Thanks, Josh.

14 Do you want to quickly just go over the reg
15 guide? You've talked a lot about it already, but Priya
16 held it up by its ears.

17 MR. GROSSMAN: Just one final plug. If
18 you want more information, at least at a high level,
19 you can go to the website. In the coming days we'll
20 have transcripts from our webinar that'll be available.
21 The slides are there; they go into much more detail in
22 the guidance if or as you sit down to review it.

23 But it provides basically approaches for
24 addressing the requirements, and it is a rather lengthy
25 document, but we hope its very useful to licensees and

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1 the public and regulators, and with that I'll be quiet.

2 MR. CAMERON: Okay. Thank you. Very,
3 very good job, Chris.

4 Just before -- we always go to our senior
5 official -- and that's Larry Camper -- to sum up for
6 us, and before he does that, I just want to point out
7 that out on the table there's something called a NRC
8 public meeting feedback form.

9 And it helps the NRC to try to improve
10 public meetings. You don't have to fill it out tonight
11 and leave it with us. It's already franked, so if you
12 can just put it in a post office box, it gets to the
13 NRC. So I just wanted to point that out to you.

14 And, Larry?

15 MR. CAMPER: Okay. Thank you, Chip.

16 Well, first of all, thank everybody for
17 coming out tonight, and thank all those on the line for
18 listening in, and thanks to the staff for the hard work.
19 This is -- we're now several meetings into this, and
20 a lot goes into it. And, Lisa, with OGC, thank you,
21 of course.

22 So a lot of interest and a lot of care, and
23 we appreciate that.

24 What I try to do is sort of share with you
25 Aha moments or key observations that I wrote down that,

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1 when we go back and have our staff meetings, I'll ask
2 the staff to look at as we look at the comments and so
3 forth, and there were several.

4 First of all, the question, was highly
5 contaminated depleted uranium considered when we did
6 SECY-08_0147? That had not come up before tonight.
7 And the answer was yes, but we'll take a good look at
8 that.

9 Again, the applicability of the new
10 requirements to the existing sites: We heard this in
11 the first meeting in April in Washington. We heard it
12 in Austin. We heard it here tonight. And I bet we'll
13 hear it in Utah and Washington as well, and that's okay.
14 That's a key issue.

15 The importance of reviewing the guidance
16 document as well as you read the proposed rule was
17 pointed out by Chris tonight, and Priya. So please do
18 that, because there's a great symbiotic relationship
19 that exists there, and we're looking for comments on
20 both.

21 The issue of the role of a regulatory
22 analysis and the fact that it's not required, but then
23 how might that relate to a backfit analysis? Is that
24 something the staff would consider doing?

25 Certainly, Susan, please comment to that

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1 effect. We look forward to that. I provided at least
2 some preliminary staff thinking about that particular
3 question, but we welcome a comment. And that was a
4 great comment, by the way. Thanks for raising it.
5 It's a very challenging, interesting issue, and we
6 appreciate that.

7 Transparency and implementation of the
8 rule came into play. I think Mary Olson raised that
9 question. You know, I dare say I'm not as familiar with
10 all the agreement states' administrative procedures
11 and processes as I am ours, but I'd be willing to bet
12 that all the states have processes that are not terribly
13 dissimilar in terms of public availability of license
14 submissions and RAIs and the like.

15 But certainly we heard that, and I'm sure
16 the states heard that as well, and as we go through this
17 rule process, we'll continue to keep that in mind.

18 The timeframe for the stability analysis
19 and the role of the period of compliance and performance
20 assurance and this question of 500 years that's been
21 a working tenet in the rule for sometime now, versus
22 1,000 years or 10,000 years, and what does that
23 relationship mean with these potential changes?

24 Why define a new type of waste? -- came up.
25 I think Chris provided an explanation as to the fact

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1 that it's really designed to provide a relief if you
2 don't have those particular long-lived radionuclides
3 at your site.

4 But that is a good point, and we appreciate
5 comments on that.

6 Public transparency again in the PA
7 process. I mean, clearly someone commented -- it may
8 have been Chris commented, or Lisa -- the more you move
9 toward a risk-informed, performance-based regulatory
10 process, as compared to a prescriptive process, there's
11 more effort that goes into it by the applicant or the
12 licensee, and then by the regulator in reviewing it.

13 And so the commensurate need to make sure
14 that all that information is publicly available so that
15 concerned stakeholders can look at the parameters that
16 went into making the decisions is important.

17 The notion of the imposition of
18 subjectivity and, again, we commented that, yes, when
19 you are using a risk-informed, performance-based
20 approach, subjectivity does come into that, and that
21 requires more work.

22 But of course, in contrast, another way to
23 do it is to be very prescriptive, but then of course
24 that generates concerns as well, so which is the lesser
25 of two evils, so to speak? -- a prescriptive approach

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1 that the regulator dictates with comment, of course,
2 or a more risk-informed, performance-based approach.
3 And so comments on that would be welcome as well.

4 The issue of were there other ways to
5 address the disposal of depleted uranium. And this is
6 something that we as a staff asked ourselves a lot in
7 the beginning, and I shared, Mike, that we had pondered
8 a couple of different ways, and there were other
9 discussions that the staff had as well, but your
10 comment's a smart comment, and it's a well-thought-out
11 comment.

12 There may be other ways, but this is the
13 way that we have proposed to the Commission and the
14 Commission in turn has directed staff to proceed with
15 the rulemaking, but any insights as to a different way
16 or a simpler way or more easily understood way is
17 welcome in comments as well.

18 The role of the performance objective.
19 John Greeves raised this question in the context of WIR.
20 I don't think as a staff -- I don't recall us ever
21 contemplating this would have any impact upon the WIR
22 process, the waste incidental to reprocessing process.

23 And the question of whether -- the good
24 news is that the waste determinations for WIR have been
25 completed; now it's all about monitoring. But we will

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1 go back, as a staff, and look at the implications of
2 that question, and need be, we'll communicate with the
3 Commission or identify adjustments or what have you.
4 That was an excellent question. Thank you.

5 Then this notion of the need for a second
6 rule; this has come up in every one of our meetings.
7 And as I said, we have direction from the Commission
8 to explore that question and to get back to the
9 Commission with specific communication.

10 But along the way, the staff has had an Aha
11 moment, this notion that one has to have a final rule
12 to really be able to completely comment as to the need
13 for another rule, and so we have some more work to do.

14 This is an issue that we're clearly going
15 to have to communicate with the Commission about, and
16 I know the Commission will have a lot of interest in
17 this. I've already had some discussions with
18 Commissioners and their staff about this question, and
19 so it is something that the staff will make it a point
20 to communicate very thoroughly with the Commission when
21 we go back over the proposed rule. And we'll
22 direction; I'm certain we'll get direction, and then
23 we'll carry out that direction.

24 So let me conclude again by thanking all
25 of you for being here -- Chip, thank you again for doing

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1 a great job -- and to all the staff for the hard work
2 that you put into this and all the other meetings and,
3 again, for the public being here and taking part. It
4 helps us make hopefully a better regulation, so thank
5 you.

6 (Whereupon, at 9:10 p.m., the public
7 meeting was concluded.)
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