Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Yucca Mountain Review Plan
Public Information Meeting

Docket Number: WM-000011

Location: Las Vegas, Nevada

Date: Thursday, May 23, 2002

Work Order No.: NRC-387 Pages 1-159

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005

(202) 234-4433

1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

3 + + + + +

4 PUBLIC INFORMATION MEETING

5 + + + + +

6 YUCCA MOUNTAIN REVIEW PLAN

7 + + + + +

8 THURSDAY

9 MAY 23, 2002

10 + + + + +

11 LAS VEGAS, NEVADA

12 + + + + +

13 The Public Meeting was called to order at
14 the Conference Room of the Clark County Building
15 Department, 4701 West Russell Road, Las Vegas, Nevada,
16 at 6:37 p.m., by F.X. "Chip" Cameron, Facilitator,
17 presiding.

18

19

20

21

22

23

24

25

1 I-N-D-E-X

2 AGENDA ITEM	PAGE
3 Opening Remarks by Mr. Cameron	3
4 Presentation by Janet Schlueter on NRC's	9
5 Plan for Judging the Safety of a	
6 Proposed Repository	
7 Presentation by Jeff Ciocco on NRC's plan . . .	47
8 for Judging the Safety of a Proposed	
9 Repository	
10 Presentation by Pat Mackin on Safety in	56
11 Operations	
12 Presentation by Tim McCartin on Long	83
13 Term Safety	
14 Presentation by Jeff Ciocco on Security	127
15 Presentation by Pat Mackin on Adequacy of . . .	130
16 Monitoring	
17 Closing Remarks	158
18 Adjournment	159

19
20
21
22
23
24
25

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

2 (6:37 p.m.)

3 MR. CAMERON: All right. If we could get
4 started. Good evening. My name is Chip Cameron, and
5 I am the Special Counsel for Public Liaison at the
6 Nuclear Regulatory Commission. And I am pleased to
7 serve as your Facilitator for tonight.
8 I am going to try to help all of you have
9 a productive meeting tonight, and this is a meeting on
10 the NRC's draft Yucca Mountain Review Plan, and I just
11 wanted to cover three things briefly about the meeting
12 process before we get started tonight.
13 One, our objectives for format and ground
14 rules, and third, I want to tell you about the agenda
15 for tonight's meeting. In terms of objectives, the
16 NRC wants to make sure that you have a clear
17 understanding of what is in the draft Yucca Mountain
18 Review Plan, as well as what role the Yucca Mountain
19 Review Plan will play in the NRC's licensing
20 responsibilities for any proposed repository.
21 The second objective, and the most
22 important objective, is to hear your comments on that
23 review plan, and our ultimate goal is for the NRC to
24 take comments that we hear tonight, and that we have
25 heard over the last two days that we have been in

1 Nevada, and use those to help us finalize the Yucca
2 Mountain Review Plan.
3 We are asking for written comments on the
4 review plan, and you will hear about how to submit
5 comments and when the comment period closes, but we
6 are here tonight to talk to you personally.
7 And any comments that you make tonight
8 will carry the same weight as a paper comment. In
9 terms of the format for tonight's meeting, we have
10 some NRC presentations, and I will go through the
11 agenda in a minute, and you will see how we have
12 broken up those presentations.
13 And after every discussion block, we are
14 going to out to you for any questions that you have,
15 and also comments. It is not just -- the meeting is
16 not just for you to ask questions, but also to give us
17 any comments that you have.
18 In terms of ground rules, if you want to
19 say anything, or ask a question, or make a comment,
20 just make a signal and I will bring you this
21 microphone, and state your name, and affiliation if
22 appropriate for the transcript.
23 We are taking a transcript. Paul, our
24 stenographer, is back there, and that will be
25 available to whomever wants a copy of it.

1 The second ground rule is, please, just
2 one person speaking at a time, and we do need to
3 capture whatever is said on the microphones so we can
4 have it on the transcript.
5 And one person at a time will help us get
6 a clean transcript, but it also will allow us to give
7 our full attention to whomever has the floor at the
8 moment.
9 I want to make sure that everybody has a
10 chance to talk tonight, and so try to be as concise as
11 possible in your remarks. I don't want to make too
12 big a deal of that, because it is difficult sometimes
13 to be brief on complicated issues, and issues of
14 concern.
15 But we do want to try to hear everybody
16 tonight. If there is an issue that comes up after one
17 of the discussion blocks that doesn't fit within that
18 discussion block, we are going to put it up here in
19 the corral, and we will come back at the end of the
20 evening and make sure that we have discussed all of
21 those issues.
22 We know that there is a lot of issues of
23 concern here on the repository, and we know we will
24 have a lot of questions on that, and we do want to
25 make sure that we get out the information that we want

1 to give you on the review plan.

2 So that is going to be our priority, and

3 to the extent that we can come back later in the

4 evening and answer other questions, we will do that.

5 In terms of the agenda, we are going to start out

6 tonight with a presentation by Janet Schlueter, who is

7 the Chief of the High Level Waste Management Branch at

8 the NRC.

9 Janet is going to give us a presentation

10 on the NRC's licensing responsibilities generally for

11 high level waste, so that you will have a context in

12 which to look at the presentations on the review plan.

13 We are going to stop -- we are going to go

14 to you for questions after that, and comments, but at

15 7:30 though we are going to move to the first of the

16 presentations on the review plan.

17 And there are going to be two

18 presentations. One is going to be by Jeff Ciocco, who

19 is right over here. Jeff is part of Janet's high

20 level waste management staff, and he is the project

21 manager for this review plan.

22 He is going to talk about the methodology,

23 the role of the review plan, how it was put together.

24 And then we are going to go to the first substantive

25 portion that we are going to discuss of the review

1 plan.

2 And that is going to be safety of
3 operations, and that presentation is going to be done
4 by Pat Mackin, and Pat Mackin is with our Center for
5 Nuclear Waste Regulatory Analyses, and that is our
6 primary research contractor that assists the NRC, and
7 you will hear a little bit more about them.

8 Pat is a systems engineer, and his
9 presentation is going to talk about how the Yucca
10 Mountain Review Plan will address safety issues in
11 what is called the preclosure period on the
12 repository.

13 In other words, when it is being
14 constructed, and when waste is being put in place.
15 And I should mention Jeff Ciocco is a geologist and an
16 environmental engineer. And after those two
17 presentations, we will go on to questions and
18 comments.

19 We are then going to go to long term
20 safety of the repository. In other words, how does
21 the Yucca Mountain Review Plan address safety after
22 the repository is closed, and after waste has been in
23 place, and we have Tim McCartin from the NRC staff, a
24 physicist by training, and long time expert and
25 involvement in the field of repository performance and

1 assessment, and I think he is going to give us some
2 examples of how that works so that you can get a
3 better understanding of that.
4 We will then go on to questions and
5 comments, and then we have two short subjects,
6 security at the repository, in terms of sabotage or
7 theft of material, and Jeff Ciocco is going to do
8 that.
9 We will then have Pat Mackin then talk
10 about adequacy of monitoring of the repository after
11 it is closed, and we will go to you for questions, and
12 then we will come back and address any issues that we
13 have not covered so far, and give you a chance to
14 raise other issues.
15 And we will try to get you out of here at
16 the latest by 9:30. But right now I would just
17 encourage you to talk to the NRC staff, and maintain
18 some continuity with them.
19 And we are going to get right into the
20 first presentation, unless this is a question about
21 the meeting process. Is it, sir?
22 MR. MARKS: It is, yes.
23 MR. CAMERON: And tell us who you are?
24 MR. MARKS: (Off microphone) My name is
25 Herb Marks, and I am a resident here. How much time

1 will be devoted to the presentations from your
2 technical staff?
3 MR. CAMERON: That will be probably --
4 they are each about 10 or 15 minutes.
5 MR. MARKS: I am trying to get an idea of
6 how much time will be allowed for discussion, and
7 questions, and comments, minus the presentations?
8 MR. CAMERON: I think it is probably going
9 to be -- let's say it is 60 percent comments,
10 questions, or more, and 40 percent presentations. And
11 let's get on to it so that we can go out to you and
12 hear from you. Janet, please.
13 MS. SCHLUETER: Thank you, Chip. Good
14 evening, and thank you for coming out tonight and
15 joining us to talk about the Yucca Mountain Review
16 Plan.
17 As Chip mentioned, I am the branch chief
18 of the High Level Waste Program at Headquarters, and
19 that we are the focal point for all of the High Level
20 Waste Programs at the NRC.
21 I would like to provide you some context
22 as Chip mentioned for the technical presentations that
23 will follow me, and so I will spend just a few minutes
24 in discussing the NRC's role and the general process
25 associated with the potential licensing of the Yucca

1 Mountain site.

2 Who are we. The NRC is an independent
3 agency, and we are independent in the sense that we
4 are not part of the present administration, or the
5 executive, judicial, or legislative branches of the
6 Federal Government.

7 We are also not part of the Energy
8 Department. We have the responsibility to make an
9 independent safety decision as an independent
10 regulator.

11 We are also an experienced regulator, and
12 we have been an agency since 1975, and we have over 25
13 years of experience in regulating a wide variety of
14 nuclear facilities.

15 And in that sense, by nuclear I mean
16 medical, industrial, commercial, fuel cycle
17 facilities, as well as commercial and nuclear powered
18 reactors.

19 Our sole mission is to protect public
20 health and safety, as well as the environment, and
21 that includes the security and safeguards associated
22 with those facilities.

23 The NRC has also been charged with
24 regulating any potential repository that the Energy
25 Department would apply to us for a license.

1 What is our roe in Yucca Mountain? Well,
2 by law, we are required to set rules that would apply
3 to the site, and that would protect the public health
4 and safety, as well as the worker and the environment.
5 We have also set rules that are consistent
6 with those that have been issued by the U.S.
7 Environmental Protection Agency. By law, we are also
8 conducting public interactions with the members of the
9 public during this case prior to making a decision on
10 a license application.
11 We also are charged with making
12 independent decisions on whether or not a license
13 should be granted to construct, and to later operate
14 the facilities.
15 Our role as an independent regulator is to
16 assure that the applicant or the licensee, and in this
17 case, potentially the Energy Department, obeys all of
18 our rules, and we will do that through the rigorous
19 licensing, and inspection, and enforcement programs.
20 How do we carry out our goal as an
21 independent regulator? We would review all the
22 information that we receive objectively, and make a
23 thorough safety assessment based on that information.
24 We would also make all of our decisions
25 based on the facts and maintain an open public process

1 in doing so. As a part of our decision-making process
2 on safety decisions, the Yucca Mountain Review Plan is
3 part of that, in that it is our licensing guide, and
4 it is the internal staff guide that would be used to
5 make this decision.
6 How does the NRC carry out its role?
7 Well, we are charged with making licensing decisions
8 one step at a time based on the information that we
9 have available at that time, and what I mean by that
10 is there are three phases when the license application
11 would be submitted.
12 And the first phase would be to grant the
13 license to begin construction of a potential
14 repository, after which there would be a next phase to
15 authorize operation of the repository, and finally the
16 closing of a repository.
17 And as I mentioned, the NRC is the one
18 that must decide whether or not to allow to allow the
19 Energy Department to construct a repository, and if
20 the Energy Department submits an application, Congress
21 has directed that we must conduct our review within a
22 three year time period.
23 It also requires that we provide for a
24 full and fair public hearing, but before any of that
25 would take place, there are several steps which have

1 to be taken, some of which may have already occurred
2 as you know.
3 And they are the Energy Departments's
4 final environmental impact statement, the
5 recommendation by the Energy Department to the
6 President, and the President's recommendation to
7 Congress.
8 Nevada has issued its notice of
9 disapproval, and so now the action rests with the
10 Congress. If the Congress makes a decision that the
11 site recommendation should take place, the next
12 potential stage would be if the Energy Department
13 decides to get a license application to us.
14 At that point, we are obligated to make a
15 decision within 90 days of receiving that license
16 application as to whether or not we would docket it.
17 And that term would mean that the NRC has
18 made a determination that there is enough information
19 in the license application to commence our safety
20 review.
21 At that point if we make the decision that
22 the license was docketable, we would begin our safety
23 review, and that is when the three year clock would
24 begin.
25 There are three possible outcomes of the

1 licensing process, which is consistent with the
2 licensing process that we use at other facilities that
3 we license.
4 The burden of proof is on the applicant,
5 and in this case, the Energy Department. We could
6 deny the application outright if the Energy Department
7 has not provided or has not demonstrated that the
8 safety regulations could be met.
9 We could also issue the license with
10 conditions on the license, where the Energy Department
11 would have to take additional steps, or we could grant
12 the license as is.
13 How will the NRC decide whether to accept
14 the Energy Department's application for review? Well,
15 we have to ask ourselves whether or not it contained
16 all the required information, and again this is where
17 the Yucca Mountain Review Plan comes in.
18 Is there also enough documentation to
19 support the Energy Department's safety plan, and also
20 does it comply with the access requirements as far as
21 making the document publicly available in an
22 electronic form. Again, if all of these answers are
23 yes, then the three year process starts.
24 How would the NRC address safety issues?
25 We would reply on the independent experts at the NRC,

1 both at the headquarters in my program, and also from
2 the independent scientists and engineers that we have
3 at the Center for Nuclear Waste Regulatory Analysis in
4 San Antonio, Texas.
5 And we actually have two representatives
6 here from the center tonight. We have Pat Mackin, and
7 he has been introduced to you; and also Mike Smith,
8 who also works at the Center.
9 We could also require more information
10 from the Energy Department as needed based on our
11 review. The Center also conducts their own testing
12 for verification of the information, and we would also
13 document our conclusions and our findings in a
14 transparent way.
15 On what basis would the NRC adopt the
16 Energy Department's final environmental impact
17 statement? The Nuclear Regulatory Policy Act requires
18 that the NRC adopt the Energy Department's final
19 environmental impact statement to the extent
20 practical, We have interpreted that to mean under two
21 conditions. We would adopt it unless the action to be
22 taken differs from that described in the application
23 in a way that significantly affects the environment.
24 Or, if there is significant and
25 substantially new information, or considerations that

1 make the final environmental impact statement
2 inadequate.
3 The NRC will be ready to judge the safety
4 of the potential repository. We have protective
5 standards and regulations that are in place, and we
6 will continue to conduct our prelicensing interactions
7 with the Energy Department and to exchange
8 information.
9 And again, we have also issued our draft
10 Yucca Mountain Review Plan, which would provide a
11 sound basis for making a determination about safety.
12 With regard to our standards, the NRC issued our
13 proposed regulations back in February of 1999.
14 In response to public comment about
15 extending the comment period, we did extend it by a
16 period of about two months. In June of 2001, the
17 Environmental Protection Agency issued its final
18 standards with respect to Yucca Mountain, and we
19 followed five months later by issuing our final
20 standards last November.
21 In order to ensure that the citizens of
22 this State had an opportunity to provide their
23 comments to us on our proposed rules, we held six
24 public meetings in Nevada on those proposed
25 requirements.

1 And during that time we received more than
2 a thousand individual comments, many of which were
3 obtained at meetings much like the one we are having
4 here tonight.
5 As a result of those comments and after
6 considering the Environmental Protection Agency's
7 standards, we made changes to our final regulations.
8 For example, we did wait until the Environmental
9 Protection Agency had issued their final standards,
10 and we issued ours five months later, and made
11 conforming changes to our proposed rules.
12 We also adopted the Environmental
13 Protection Agency's limits for individual protection,
14 and also their separate limits for the ground water.
15 In addition, in response to your comments,
16 we have also retained the formal hearing process on
17 any potential repository sites.
18 For the time being the NRC does not take
19 any position on whether or not a repository should be
20 located at Yucca Mountain. Our views will be shaped
21 by much further analysis and much later during the
22 process.
23 In the meantime, we will continue to have
24 our public interaction with the Energy Department and
25 to exchange information. It is as a result of these

1 interactions that we have identified the nine key
2 technical issues which we have used to frame our
3 program.
4 This is a term that we originated to
5 categorize the technical areas that we have used to
6 guide our review of the Energy Department's site
7 characterization efforts to date, and there is a
8 handout on the table which describes these nine key
9 technical issues.
10 But they include such things as how would
11 water move above and below a potential repository; and
12 how would waste heat affect when and how water reaches
13 the waste; and how long will containers last, and what
14 becomes of the waste as the containers are breached.
15 These key technical issues are considered
16 very important to the staff to understand if a
17 repository will be safe. And because of their
18 importance, we have used them to frame both our rules
19 and also the Yucca Mountain Review Plan.
20 How will we determine whether or not we
21 have enough information about safety or a key
22 technical issue? We developed acceptance criteria
23 that are based on issues significant to safety, and
24 those criteria and the technical bases for them have
25 been documented in a series of publicly available

1 reports, and they are consolidated into the Yucca
2 Mountain Review Plan.
3 How will we use the plan? We will use
4 this plan as a guide for the NRC staff review as I
5 mentioned as we make our safety decision based on the
6 license application.
7 It also will help us determine whether or
8 not the Energy Department has provided enough
9 documentation for us to determine whether or not all
10 of our regulations will be met.
11 As is the case with the development of our
12 proposed and final rule, we appreciate and welcome
13 your input on this regulatory document. For this
14 reason, we are here today, and we have hard copies of
15 the document, and we also have it on CD-ROMs as well.
16 And we hope that all individuals that are
17 interested will provide a comment on the document
18 either here tonight, by using either one of the
19 microphones and giving us those comments directly, or
20 by completing a form that was left on the table that
21 you could provide to us after the meeting, as well as
22 sending a later comment in the future.
23 We did place the Yucca Mountain Review
24 Plan on our website in March, and there is a 90 day
25 comment period, which began on March 29th. We had two

1 other public meetings as Chip mentioned earlier this
2 week in order to receive comments on the plan.
3 And we also received a request for
4 extending that public comment period, which we will
5 take into consideration.
6 In summary, the NRC will be ready if the
7 Congress adopts Energy Department's request for a
8 repository at Yucca Mountain to take effect. We do
9 have protected standards and regulations in place, and
10 we do have our draft licensing guide, which will we
11 further define after this public comment period, and
12 we will use that again to conduct our safety review.
13 As the High Level Waste Branch Chief, it
14 is my job to see to it that the NRC staff, including
15 the staff from the Center, fulfills its obligations to
16 protect public health and safety by conducting a
17 thorough and very careful evaluation of the
18 information submitted to us from the Energy
19 Department.
20 We are here today to hear your concerns
21 and to address any comments that you may have. But
22 before we go to most of the more technical
23 presentations, I would be happy to answer any
24 questions.
25 MR. CAMERON: Okay. Thank you very much,

1 Janet. And that was a broad overview of the NRC
2 licensing responsibilities, and we have up to a half-
3 an-hour to spend with you on comments or questions on
4 that particular area. Andy. And I guess give your
5 first and last name.
6 MR. HERESZ: Andy Heresz, and I live here
7 in Las Vegas. A question if I may. First of all, how
8 many high level garbage dumps like the proposed one at
9 Yucca Mountain has the NRC licensed in the past?
10 And what is your track record and where
11 can we look at what you have been doing?
12 MS. SCHLUETER: There are no underground
13 geologic repositories for the permanent storage of
14 spent nuclear fuel. However, at over 70 different
15 locations in the United States, we have licensed the
16 storage of spent nuclear fuel above ground.
17 MR. HERESZ: So your answer is that you
18 have no experience at anything like the proposed Yucca
19 Mountain repository. The second question is that I
20 assume that you are familiar with the Nuclear Waste
21 Technical Review Board.
22 They have been operating since about 1987,
23 and they recently came out with their assessment of
24 the scientific evidence supporting Yucca Mountain.
25 But you know what they said in their

1 report about that scientific evidence and how did they
2 categorize it? Would you mind sharing it with us?
3 MS. SCHLUETER: I am assuming you are
4 referring to a phrase where they had characterized it
5 as weak to moderate.
6 MR. HERESZ: Thank you.
7 MR. CAMERON: Okay. Steve.
8 MR. FRISHMAN: (Off microphone) I am
9 Steve Frishman with the State of Nevada. The
10 Department of Energy has said that they would not a
11 issue a Record Decision on the EIS. Is that part of
12 the required information that you need?
13 MS. SCHLUETER: The Energy Department was
14 required to submit the final environmental impact
15 statement at the same time of the license application.
16 As part of that review the staff will make a decision
17 as to whether or not we should adopt the final
18 environmental impact statement.
19 In other words, if one of the two
20 conditions that I mentioned, we would adopt it unless
21 one of those two conditions existed. If neither of
22 those conditions exist, we would adopt it and that
23 would be the final --
24 MR. FRISHMAN: Well, this is a third
25 condition and should be there, because the Department

1 has created the issue, and that is, is the document
2 legally sufficient.
3 And my question to you is does the Nuclear
4 Regulatory Commission believe that a final
5 environmental impact statement is legally sufficient
6 (inaudible)?
7 MS. SCHLUETER: My answer to that would be
8 that again the staff would make a decision on whether
9 or not we should adopt the EIS, and that decision
10 would then be part of the hearing process.
11 The Commission would make the ultimate
12 decision as to whether or not the Agency would adopt
13 the final environmental impact statement.
14 And as they go through that process, that
15 would be the NRC's record on this matter.
16 MR. CAMERON: Do you have one final
17 follow-up on that?
18 MR. FRISHMAN: I would think that would go
19 into your 90 days of whether you can accept the
20 license application for docket, and I don't see where
21 the Commission enters into that one.
22 MS. SCHLUETER: We do make a decision on
23 whether to adopt the EIS at the same time that we make
24 a decision on whether or not the application is
25 docketable.

1 It is true that they are separate and
2 distinct actions, but it is the staff's decision, that
3 first 90 day decision on whether to docket the
4 license; and it is also the staff's decision on
5 whether or not to adopt the EIS, and then that
6 decision would then be part of the hearing process and
7 whether or not the legal obligations have been met.
8 MR. FRISHMAN: Well, I would like to leave
9 the question on the record whether the final EIS is
10 sufficient.
11 MR. CAMERON: Okay. It will be on the
12 record. Thank you, Steve. Let's go to Herb.
13 MR. MARKS: I just wanted the Chief to
14 amplify on requirement number two? Could you do that?
15 MS. SCHLUETER: I'm sorry, is what in
16 number two?
17 MR. MARKS: There are two requirements for
18 your recommendation on the EIS report. I understood
19 one.
20 MS. SCHLUETER: Oh, there are two
21 conditions on the list where we would not adopt the
22 EIS, and if either one of those is exists, we would
23 not adopt it.
24 The second one would be substantial and
25 significant new information of record on the EIS.

1 MR. MARKS: And what is in that one?

2 MS. SCHLUETER: The final environmental

3 impact statement. In other words, if there were

4 additional, and new, and substantial, and significant

5 information that would come to us, and since it was

6 issued this February, it was issued in final this past

7 February, that would render that document inadequate,

8 and was not within the bounds of the final

9 environmental impact statement, we would not allow it.

10 MR. CAMERON: Does that clear it up?

11 MR. MARKS: Well, how would you feel about

12 the current ones from the highest offices in the

13 Federal Government, the President, and the Secretary

14 of State, and the Secretary of Defense, that each day

15 over the past week with regard to the threat of

16 terrorism, and wherein specifically it has been more

17 than mentioned that a nuclear threat, whether it is in

18 the form of a bomb attack or a nuclear accident, or

19 attack on shipments, how would you feel about those

20 recent statements which have occupied the news as the

21 dominant news story in the past week will occupy the

22 concerns of every American for every day for many

23 years to come.

24 And how do you feel about that being

25 something new with regard to adequacy of the DOE's

1 EIS? Do you believe that they adequately considered
2 the effect of terrorism with regard to nuclear power
3 plants, and with regard to nuclear shipments, and
4 therefore implicitly with regard to the safety of the
5 operation and construction of the repository?
6 MR. CAMERON: Thanks, Herb, and we are
7 going to hold this mike pretty close so that the
8 stenographer can hear it. We will be having some
9 discussion of security issues later on in the program.
10 Janet, do you want to say -- well, Herb
11 sort of tied it into the new information. Do you have
12 something on that?
13 MS. SCHLUETER: Well, yes. Certainly
14 since September 11th security safeguards on sabotage
15 and terrorism have been a high priority for the
16 Federal Government and all of us at large.
17 As a result the NRC has taken several
18 steps to address that matter, and as part of that,
19 Herb, the NRC has done a top to bottom review of our
20 current status of security safeguards and related
21 requirements.
22 As a result of that, there have been
23 interim measures that have been put into place at
24 nuclear power plants and other nuclear facilities.
25 And also the current set of requirements

1 that are in the regulations with regard to security
2 and safeguards would then also apply to Yucca
3 Mountain.
4 However, as part of this top to bottom
5 review, and as part of the information that we have
6 gleaned to date, and continue to learn, plus any
7 additional studies that might take place, that that
8 resulted in the identification of new requirements
9 that need to be applied to Yucca Mountain and other
10 facilities.
11 And the rules would be changed, and those
12 same new rules would then be applied to Yucca
13 Mountain. I mean, I think we all have to keep in mind
14 that we have licensees now that are operating and that
15 is our first tier of concern if you will, and that
16 changes to the rules or requirements that would take
17 place that would apply to Yucca Mountain are much
18 further down that road.
19 But we would make changes to the ones that
20 would apply to Yucca Mountain, and that are contained
21 in the Yucca Mountain Review Plan now, and that it is
22 possible that they would or would not apply.
23 MR. FRISHMAN: Have you addressed the
24 issue of shipments --
25 MR. CAMERON: Herb, we need to get

1 everything on the transcript. There will be an
2 opportunity to address security considerations later,
3 but I want to give the rest of the audience a shot at
4 this overall issue. So we will be back to that.
5 And I am going to go to Kalynda now, and
6 then we are going to go to Commissioner Herrera, and
7 then Dennis Bechel. Kalynda.
8 MS. TILGES: Kalynda Tilges, Citizen
9 Alert. The question that I want to ask is that
10 according to the Nuclear Waste Policy Act, if the
11 Senate passes or upholds -- excuse me.
12 If the Senate overturns Nevada's veto,
13 according to the Nuclear Waste Policy Act, the
14 Department of Energy is required to file a license
15 application within 90 days.
16 According to the GAO and the Nuclear
17 Regulatory Commission, they will not be ready to do
18 that until 2004. So I guess this would kind of follow
19 on the heels of Steve's question, which is will you
20 still be accepting an application even though it is
21 beyond its legal deadline?
22 That is three questions and the second two
23 were very quick. Do you want to answer that first, or
24 --
25 MS. SCHLUETER: Yes. The December 2004 is

1 the Energy Department's date that they would be able
2 to go forward, and not the date that the NRC has
3 identified.
4 MS. TILGES: So are you willing to answer
5 the rest of the question as to whether you would still
6 accept a license application if it more than 3 years
7 past its legal deadline?
8 MS. SCHLUETER: Yes, we would.
9 MS. TILGES: Why?
10 MS. SCHLUETER: There would be nothing to
11 preclude us from accepting the license application.
12 We accept license applications all the time.
13 MS. TILGES: You don't have to follow the
14 rules of the Nuclear Waste Policy Act in this?
15 MS. SCHLUETER: They are the applicant and
16 we're not.
17 MS. TILGES: So I guess that means no, you
18 don't?
19 MS. SCHLUETER: Well, this 90 day rule
20 does not apply to us because we are the regulator. We
21 are the independent agency that has to decide whether
22 or not we should issue the license.
23 The 90 day statutory limit applies to the
24 applicant.
25 MS. TILGES: Anyway, I think you have

1 pretty well answered it. My other question is on
2 Slide 10, talking about whether to decide to accept
3 DOE's application, you talk about enough documentation
4 to support DOE's safety claims.
5 Considering that this is the first of its
6 kind experiment in the world, how would you know? You
7 have nothing to compare it to.
8 And the last question is what on earth
9 does "to the extent practical" mean? You use that
10 term all the time and I have never been able to
11 understand it. Thank you.
12 MS. SCHLUETER: Well, I think you will see
13 as we go into some of the technical discussions that
14 we have developed certain areas that are outlined in
15 the Yucca Mountain Review Plan which will guide our
16 review on our license decision.
17 And Pat and others will get into that. And your other
18 question?
19 MR. CAMERON: It was what does "to the
20 extent practical" mean, the source of which is the
21 Nuclear Waste Policy Act?
22 MR. MARKS: And I didn't understand the
23 answer to the first part of the question. Could you
24 explain that, please?
25 MR. CAMERON: Herb, we have until 7:30 to

1 deal with this, and we are going to try to be as clear
2 as possible. We will come back to that question,
3 okay?
4 MR. MARKS: I appreciate it.
5 MR. CAMERON: Now, I will put that in the
6 parking lot. Janet, do you want to talk about "to the
7 extent practical" that was asked about?
8 MS. SCHLUETER: Well, the NRC has placed
9 a determination into our rule and those are the two
10 conditions which are described on the earlier slide.
11 As far as identifying circumstances of
12 which the final environmental impact statement would
13 not be adequate, because either the actions being
14 taken are outside of the boundaries as they are
15 considered, and they significantly impact the
16 environment.
17 Or there is significant substantial new
18 information that makes it inadequate. So that is our
19 interpretation of those words.
20 MR. CAMERON: Mitzi, did you want to add
21 something to that? This is Mitzi, from our Office of
22 General Counsel.
23 MS. YOUNG: (Off Microphone) To the
24 extent practical, with legal terms, they use extra
25 syllables. But Janet was correct. The standards were

1 used to interpret that under the criteria that were on
2 the slides that she shared with you.
3 MR. CAMERON: Okay. We are going to go to
4 Commissioner Herrera now, and Herb, we will go back to
5 that question and try to give you an explanation later
6 on this evening. Commissioner.
7 COMMISSIONER HERRERA: Thank you, and good
8 evening everyone again. Thank you again for being
9 here. I have a couple of questions, and one is about
10 your ability to receive the application, and I think
11 it is a good point.
12 I mean, the Policy Act obviously
13 prescribes the period by which the DOE could submit an
14 application, but what you are telling us tonight is
15 that they submit the application despite what the
16 Federal law dictates the period of acceptance should
17 be.
18 MS. SCHLUETER: There is nothing that
19 prohibits or precludes us from accepting an
20 application after that 90 days.
21 COMMISSIONER HERRERA: So then what is the
22 purpose of that time clock? If there is no occasion
23 for someone to not comply with it, and it is a portion
24 of the Act itself, then why is that part of the Act
25 itself?

1 MR. CAMERON: Well, there are all sorts of
2 requirements in the Act, but some of them apply to one
3 agency, and some of them apply to another, and I think
4 that Janet is probably going to give us an explanation
5 of the reason, and how it works. Janet Kotra.
6 DR. KOTRA: (Off microphone) Just an
7 plification, it is actually a very long answer, and it
8 has a lot to do with the Department of Energy, but it
9 lays out obligations and deadlines for a number of
10 agencies.
11 The Environmental Protection Agency, for
12 example, was given direction to contract with the
13 National Academy of Sciences to develop new criteria.
14 Those standards were issued about five years after the
15 Act required them to promulgate them.
16 We were obligated to promulgate our
17 conforming -- or to make our requirements consistent
18 with the Environmental Protection Agency, and so we
19 were given one year to issue ours.
20 We were not precluded from adopting EPA
21 standards because they were five years later.
22 Likewise, I think that if someone wishes to challenge
23 the Environmental Protection Agency for its tardiness
24 on that, I think that might have be possible. That
25 might have affected our ability to adopt, but that did

1 not happen.

2 Likewise, our obligations under the Atomic
3 Energy Act are to review on the basis of safety the
4 applications that we receive, and as Janet indicated,
5 there is nothing legally as far as I know -- and I can
6 check with our Office of General Counsel to correct me
7 if I am wrong, but I don't believe there is any legal
8 restriction for our reviewing -- you know, our basis
9 for our determination has to be in compliance with --
10 MS. SCHLUETER: Commissioner, I am going
11 to bring this back, but I just want to see if there is
12 one -- do you have a clarification on the
13 Commissioner's question? Mitzi.
14 MS. YOUNG: (Off microphone) You were
15 correct that the Commission says that it shall submit
16 the application within 90 days, but they also set out
17 a additional provision that says the NRC shall
18 consider an application, and it doesn't say that it
19 must be submitted within 90 days, and so there is room
20 for any lawyer to argue about the deadline.
21 In addition, an NRC requirement in our
22 regulations includes a requirement that DOE certify
23 and make documents available on the licensing six
24 months before you intend to submit the application.
25 That to date has not happened, and so we have an

1 additional time period that is not even addressed in
2 the Act.
3 And so our current rules would allow DOE
4 to submit their application after 90 days.
5 MR. CAMERON: So then we are going back to
6 the Commissioner, Herb, and try to get back to you on
7 this. But what I think I hear the NRC saying is that
8 this is an obligation under the Act on the Department.
9 Commissioner Herrera.
10 COMMISSIONER HERRERA: I guess somewhere
11 in the Act it says to submit within 90 days and in
12 parentheses it says I am just kidding, or no, not
13 really.
14 But the second question pertains to new
15 information and obviously 9-11 is probable new
16 information, and the circumstances of that, but the
17 9-11 we would have to consider.
18 You mentioned that in the post-9/11
19 environment that there has been some modifications of
20 standards for -- I would say strict safety precautions
21 that existed would be taken for an existing licensee
22 for our nuclear power plants, and is that a statement
23 that is --
24 MS. SCHLUETER: (Off Microphone) There
25 have been security improvements in those that have

1 licensing ability, including nuclear power plants.

2 COMMISSIONER HERRERA: And can you just

3 briefly describe that? I know that we will talk about

4 security in greater detail later, but can you talk

5 about some of those additional measures that have been

6 adopted at nuclear waste sites?

7 MS. SCHLUETER: No. That is information.

8

9 COMMISSIONER HERRERA: Okay. Was that

10 pre-or-post 9/11 that Congressman Markey making the

11 comments about the adequacy of security at existing

12 licensee sites?

13 MS. SCHLUETER: Well, I am not --

14 COMMISSIONER HERRERA: Have you had new

15 standards in place before or after he made those

16 comments? Those comments are fairly recent, and did

17 you adopt the standards post-9/11, and the Congressman

18 has some significant area of expertise in that regard,

19 and I think it was the subject of some Congressional

20 hearings.

21 So I just want to find some context to the

22 time that the security measures had been adopted were

23 post-or-pre 9/11?

24 MS. SCHLUETER: There were enhancements to

25 security that were made relatively prompt after 9/11,

1 and there continues to be an evaluation for possible
2 enhancements beyond that.
3 Congressman Markey has communicated with
4 us on several occasions about security and as you are
5 aware he has had hearings and so forth.
6 COMMISSIONER HERRERA: Are you saying that
7 you all adopted increased security measures soon after
8 the 9/11? I believe Congressman Markey's comments
9 came less than a month ago.
10 So with the assertion that you have
11 adopted greater security measures since the post-9/11
12 environment, you still had a leading Congressional
13 Member who found your security measures that you
14 adopted to be insufficient.
15 And I ask that in the context of
16 information, because that is something that we
17 obviously now have to consider with respect to DOE's
18 application. I am not sure exactly when that would be
19 considered.
20 It would seem to me that as part of the
21 site process, that in order to determine whether or
22 not Yucca Mountain is suitable for a nuclear waste
23 repository, that you would make the assessment of
24 security, and the potential threat to homeland
25 security, a potential terrorist attack, your ability

1 to mitigate those issues, prior to a decision being
2 made, because it would seem to me that if you are
3 dealing with what we obviously know to be one of the
4 most dangerous substances known to man, you would take
5 the security issue before the site recommendation is
6 adopted.
7 Because what if there is a situation where
8 the President gives a recommendation, and the
9 Governor's veto is overturned by both the House and
10 the Senate, and we lose this battle in court, and then
11 those threats are still there.
12 How are we to be given assurance that the
13 Nuclear Regulatory Commission will adopt security
14 measures that will be adequate to protect the site in
15 perpetuity, because that is what we are talking about.
16 We are talking about perpetuity, at least
17 in my lifetime, and my son's lifetime, and his son's
18 lifetime. So I am just curious as to what assurance
19 do we have? There has been promises made in the past
20 that have been ignored time and time again.
21 MR. CAMERON: I think that we are going to
22 get into that in the security part of it, and so we
23 will come back to that, Commissioner, and there is
24 someone here if you wanted to talk. And then we are
25 going to go to you, and then we are going to go to the

1 next presentation, and then come back and revisit
2 these issues. Dennis.
3 MR. BECHTEL: (Off microphone) Dennis
4 Bechtel, Henderson, Nevada. A final environmental
5 impact statement was issued. However, as Secretary
6 Abraham noted today in the Energy and Natural
7 Resources Committee, there will be a supplemental EIS
8 that will hopefully cover the transportation issues.
9 And I am wondering is this supplemental
10 EIS to be considered part of the final EIS in your
11 eyes, and then again in talking about new information,
12 how does that or how will the NRC treat the new
13 information in this supplemental EIS, and would that
14 change the conclusions in the final EIS?
15 MS. SCHLUETER: (Off microphone) The Energy
16 Department may or may not choose to issue a supplement
17 to its final environmental impact statement. But as
18 I mentioned, the NRC is required to make a decision on
19 whether or not we will adopt it. We are under no
20 obligation.
21 And we are not to repeat that process, and
22 that's why are directed to adopt it when practical.
23 As part of that process though, we have to make a
24 determination as to whether or not it is practical to
25 adopt.

1 If the Energy Department had issued a
2 supplement, obviously that would be taken into
3 consideration, but if they did not issue a supplement,
4 or if they had issued a supplement and it still was
5 inadequate, the NRC might choose to issue a supplement
6 to its final environmental impact statement, in which
7 case we would conduct public meetings in which we
8 would lay out our plans for doing so.
9 And also we could issue it in draft form
10 for comment, and then go to a finalization phase. So
11 the DOE might issue a supplement, or we might choose
12 to issue a supplement.
13 MR. CAMERON: Okay. Thank you, Janet.
14 MR. HERESZ: Would that in fact have any
15 influence on, say, licensing? I guess that is sort of
16 the bottom line. If you felt that the SEIS did not
17 cover transportation issues adequately, would that
18 affect their licensing?
19 MS. SCHLUETER: We would not issue a
20 license until we could make a determination that not
21 only are safety requirements met, but also have all of
22 the obligations been met, and it could include a
23 supplement.
24 MR. CAMERON: Okay. Thank you. This is
25 our Office of General Counsel again, Mitzi Young. Do

1 you want to add something to that?

2 MS. YOUNG: I would just piggy-back what

3 Janet said. The standards that we have for adoption

4 of standards are those that are nationally recognized

5 when you supplement an environmental impact statement.

6 So that is what the NRC is going to look at when it

7 makes a decision on any license.

8 Any supplement you issue would be part of

9 the EIS, part of the environmental impact statement,

10 and it is all treated as one document, even though if

11 they have multiple supplements.

12 MR. CAMERON: Thank you, Mitzi, for that

13 clarification. This will be for this part of the

14 meeting, we will take one last comment/question, and

15 then we will come back, and if you could tell us your

16 name, please?

17 MS. ZOLKOVER: (Off microphone) Adrian

18 Zolkover. This is a little bit complex. If a

19 supplement to the draft environmental impact

20 statement, May 2001, the DOE states on page 2-8,

21 "Commercial spent nuclear fuel would be the major

22 contributor of heat in a repository. Commercial spent

23 nuclear fuel waste package loading could be buried by

24 placing younger fuel in a surface aging area to allow

25 heat output to dissipate so it could meet general

1 rules for later emplacement."

2 DOE would consider aging as much as 40,000

3 mthm -- and I think that is tons -- of commercial

4 spent nuclear fuel during a 50 year period. Aging

5 would require an extended emplacement period."

6 As reported in the Bulletin of the Atomic

7 Science, January/February 2002 by Robert Alvarez, "On

8 average, a spent fuel pond holds 5 to 10 times more

9 long lived radioactivity than a reactor core.

10 According to the NRC, as much as a hundred percent of

11 a pool of cesium 137 would be released into the

12 environment and fire."

13 The 40,000 tons of spent fuel that DOE

14 wants to put on top of the ground, at most 90 miles

15 away from Las Vegas as I estimate it, would be the

16 equivalent of 15,000 to 20,000 nuclear fuel ponds.

17 The Las Vegas Review Journal, February

18 16th, 2002, Steve Tetreault, reports that Spencer

19 Abraham stated that transportation routes and shipment

20 schedules would not be made public. The environmental

21 impact of this would begin possibly before today and

22 have a potentially far greater impact on the

23 environment than the plans on a repository.

24 Why isn't the NRC requiring an

25 environmental impact statement in this issue.

1 MR. CAMERON: Okay. It is linked to --
2 Adrian's question is linked to the environmental
3 impact statement again. Janet, do you have an answer
4 for that question?
5 MS. SCHLUETER: I am not sure what -- in
6 other words, the issue concerning fuel blending, waste
7 handling, above-ground storage facilities, and so
8 forth, are all part of -- or would be part of our
9 safety review.
10 In other words, that information is in the
11 environmental impact statement now, but those are the
12 type of issues that are encompassed by our nine key
13 technical issue areas.
14 MR. MARKS: This is okay with you then?
15 MR. CAMERON: Adrian, we would need to get
16 all of this on the transcript, and if you could just
17 give the NRC staff a chance to answer this, then you
18 may hear what you want to hear. Janet, were you
19 finished? And I think that Janet has something to
20 add.
21 MS. SCHLUETER: What I was trying to say
22 is that the issues that you mentioned, as far as the
23 fuel blending, waste handling, storage facilities
24 above-ground, and so forth, are matters which we would
25 be looking at as part of our safety review once the

1 license application came to us.

2 The issue of transportation is one in

3 which the Energy Department would make a decision as

4 to whether or not a supplement needs to be issued to

5 the EIS to address these matters.

6 We would look when we received the license

7 application the degree to which the Energy Department

8 had supplemented.

9 MR. CAMERON: Janet Kotra.

10 DR. KOTRA: The issue that you have

11 raised, which was that it first came to light as one

12 of the alternatives --

13 MS. SCHLUETER: Could you speak up, Janet?

14 DR. KOTRA: The supplement EIS was the

15 first time that the DOE explored that option. As far

16 as I am aware under the Nuclear Waste Policy Act that

17 would not currently be permitted, but that is an issue

18 that our Office of General Counsel would have to

19 examine because that would constitute surface

20 monitoring and retrievable storage.

21 And I don't believe that on our own, or on

22 DOE's own without a change to that law that that could

23 be in effect. And that would have to be examined by

24 attorneys.

25 As Janet indicated, all of the DOE's

1 activities for a repository and its plans, which would
2 not be spelled out and will not be spelled out until
3 we receive a license application, would be examined
4 very closely for compliance on existing standards.
5 And so I think there is an additional
6 problem to what the scenario that you have discussed,
7 in the sense that it would have to be examined against
8 the prescriptions that exist in the current nuclear
9 responses.
10 MR. CAMERON: Okay. Thank you.
11 MR. MARKS: I have one question.
12 MR. CAMERON: We have to move on.
13 MR. MARKS: This is critical.
14 MR. CAMERON: We will come back to that.
15 We need to get the information --
16 MR. MARKS: I think this should be
17 discussed.
18 MR. CAMERON: We will discuss it.
19 MR. MARKS: The lady said something that
20 is incorrect.
21 MR. CAMERON: Okay.
22 MR. MARKS: She said --
23 MR. CAMERON: Herb, we will discuss it,
24 okay? We will get back to it.
25 MR. CAMERON: We are going to go to two

1 presentations on the Yucca Mountain Review Plan, and
2 we will come back. We will stay as long as you want,
3 okay? And we will talk about these questions.
4 MR. MARKS: I think we should complete
5 that question now.
6 MR. CAMERON: Herb, I'm sorry, but to
7 complete that question may not be just you, but it may
8 be a bunch of other people. We want to hear the
9 public, and the information on the review plan, and so
10 we are going to put that information out for you, and
11 then we are going to come back, and you can ask the
12 question, and we will discuss it.
13 MR. MARKS: What time will we come back to
14 my question?
15 MR. CAMERON: When we are done with these
16 presentations, okay?
17 MR. MARKS: How long?
18 MR. CAMERON: Towards the end of the
19 meeting, and it depends on how many questions there
20 are on these presentations.
21 MR. MARKS: How long will these
22 presentations take?
23 MR. CAMERON: They are not going to take
24 long, Herb, okay? But we are going to get started on
25 them so that we can get done with them, and see if

1 there are questions on them, and then come back to
2 questions that are outside --
3 MR. MARKS: I don't see why you refuse to
4 follow up on the --
5 MR. CAMERON: Okay. Jeff, please go
6 ahead.
7 MR. CIOCCO: Okay. Thank you. And good
8 evening. My name is Jeff Ciocco, and I am with the
9 Nuclear Regulatory Commission. I am going to provide
10 you with an introduction to the draft Yucca Mountain
11 Review Plan.
12 It is a plan that the NRC would use to
13 assess the safety of the site if there was an
14 application submitted, and this is what he plan looks
15 like, and there are copies of it over there, and it is
16 also on the internet, and it is on Cds as well.
17 In general, I am going to start this
18 evening where I will go through the purpose of this
19 public meeting, and I will cover the purpose and scope
20 of the review plan. I will tell you what is covered
21 in the plan, and what isn't covered in the plan.
22 I will go through some performance-based
23 and what that means, and I will go through the main
24 chapters of the review plan, and individual structures
25 for each section.

1 I will tell you how you can comment on the
2 plan, and I will give you a brief introduction into
3 the following presentation.
4 The purpose of this public meeting is to
5 describe the scope and content of the Yucca Mountain
6 Review Plan. If you are not familiar with the plan,
7 you can go back to my presentation and you will have
8 a good understanding of what is in the plan.
9 If you are familiar, you will get a better
10 understanding, and you need to ask questions in either
11 case.
12 We also seek your views on how well the
13 draft Yucca Mountain Review Plan will assess the
14 safety of the site. It is the NRC's decision-making
15 program for this site, and openness is one of our five
16 principles of good regulation, and so we want to make
17 this publicly available to you.
18 The purpose of the plan is that it
19 instructs the NRC staff on how to assess the safety of
20 the site. It ensures the quality and uniformity of
21 the staff review.
22 It ensures the quality of the staff review
23 because each individual section, particularly in
24 Chapters 3 and 4, are correlated to site-specific
25 regulations for Yucca Mountain.

1 It ensures the uniformity of the reviews
2 because each section is structured very similarly to
3 the concluding statement about the safety evaluation
4 in that particular area.
5 We want to make the NRC's review strategy
6 public to you, and we also provide guidance on the
7 information that DOE's must submit in the license
8 application.
9 So really there is two purposes for the
10 Yucca Mountain Review Plan. It lists the information
11 required in the license application, and it describes
12 what is acceptable to the NRC, and it provides review
13 guidance, step-by-step procedures to the NRC staff on
14 how to evaluate a license application if one is
15 submitted to us.
16 The scope of the Yucca Mountain Review
17 Plan. The Yucca Mountain Review Plan would be used
18 for the three phases of licensing that Janet described
19 to you.
20 The first phase is the construction
21 authorization or the building permit, where we would
22 review all sections of the Yucca Mountain Review Plan.
23 The second phase is the license to receive
24 and possess fuel, spent fuel. The third phase is
25 amendment for permanent closure. Now, what is not

1 included in the Yucca Mountain Review Plan is in the
2 scope and the site recommendation process, and that is
3 a process that is currently under way in Congress.
4 This review plan would be used down the
5 road when and if a license application is submitted to
6 the U.S. Nuclear Regulatory Commission. The
7 environmental impact statement, the NRC has separate
8 regulations and processes for reviewing the
9 environmental impact statement, and the Yucca Mountain
10 Review Plan addresses the safety of the site. The
11 environmental issues are addressed separately.
12 And finally transportation issues will be
13 regulated by the NRC and several sister agencies of
14 the U.S. Department of Transportation. Those issues
15 are regulated separately from the Yucca Mountain
16 Review Plan. We are assessing the safety of the site
17 once nuclear material is received on site, and that is
18 the scope of the Yucca Mountain Review Plan.
19 How is the Yucca Mountain Review Plan
20 risk-informed and performance-based, and what does
21 that mean. First, the Yucca Mountain Review Plan
22 implements and provides guidance on site-specific
23 regulations for Yucca Mountain.
24 Those regulations use the risk of health
25 effects as a basis for the Yucca Mountain safety

1 criteria. The regulations call those the performance
2 objectives, such as the EPA standards, the individual
3 protection standards,a nd the ground water protection
4 standards, and human intrusion standards.
5 Next the review plan applies these safety
6 criteria, the performance objectives, and the EPA
7 standards, and uses them as a basis for the acceptance
8 criteria. That is how we say that the Yucca Mountain
9 Review Plan is performance-based.
10 And finally the Yucca Mountain Review Plan
11 is performance based or is risk-informed because while
12 doing a comprehensive safety review of all of the
13 information the staff can also focus on those areas
14 that are most important to safety.
15 Next is the main chapters of the plan.
16 There are five chapters of the Yucca Mountain Review
17 Plan. The first chapter is the introduction, which
18 really provides an overview of a lot of different
19 information.
20 What is the licensing review philosophy,
21 such as the NRC does not select sites, nor do we pick
22 designs. The NRC's reviews are comprehensive, and
23 focus on issues most important to safety.
24 And the NRC will defend its licensing
25 decisions, while the Department of Energy, the

1 applicant, or potential applicant, must defend its
2 safety case in its license application.
3 It also includes a general licensing
4 review procedures, and it has a brief description of
5 how each individual section is risk-informed and
6 performance-based.
7 Chapter 2 is the acceptance review. It
8 describes and provides guidance and it is really the
9 first screening of the license application using an
10 acceptance checklist based on the regulations.
11 It determines the completeness of
12 information of the engineering design concepts, and it
13 also determines if sufficient information is available
14 to begin conducting a detailed technical review.
15 And next is Chapter 3, and it is general
16 information, and now we are getting into the specific
17 contents of what must be in a license application in
18 Chapter 3.
19 Its intent is two-fold. First, it is to
20 provide an overview of the engineering design
21 concepts, and secondly, it allows the U.S. Department
22 of Energy to demonstrate the influence of the site
23 characteristics on the engineering design in the
24 overall performance of the site.
25 It also includes in Chapter 3, Section

1 3.3, the physical protection plan, and that is the
2 security of the site; and Section 3.4, is the material
3 control and accounting programs.
4 Chapter 4 is the review plan for the
5 safety evaluation. This is about three-fourths of
6 what the plan is. It is how we would evaluate the
7 safety analysis report in both the operational area
8 and also in pre-closure in Section 4.1, and Section
9 4.2 is the evaluation of the post-closure case for
10 long term safety.
11 And Section 4.3 is the research and
12 development program for developing safety. It
13 resolves safety questions and it would assess the
14 performance confirmation program, and then the quality
15 assurance program, and the administrative
16 requirements.
17 There is also a glossary and there is
18 about 300 terms defined in the back of the review
19 plan.
20 The structure of each section. Each
21 section is drafted similarly like I said earlier to
22 provide for a uniform review. It talks about the
23 areas of review, which is the scope of each section,
24 such as the physical protection plan.
25 Next are the review methods, and the plan

1 provides step-by-step procedures that the staff would
2 follow to determine if compliance with the regulations
3 has been met.
4 Then we have the acceptance criteria. It
5 defines what an acceptable compliance demonstration is
6 with the regulations, and we have then the evaluation
7 of findings.
8 It documents inclusions of the staff
9 evaluation after all of the information has been
10 reviewed. It would include a listing of all of the
11 information reviewed, the basis for the staff's
12 conclusions, and a concluding statement, a finding, of
13 that evaluation.
14 And finally we have the references, which
15 is really a list of everything included in that
16 section; and often rather than describing detailed
17 procedures included in another NRC document, we will
18 provide a reference to it rather than reproducing that
19 information.
20 How to comment on the plan. At this
21 meeting tonight, we have forms over here, or you can
22 do it electronically and submit the form, and you can
23 also submit comments in writing. And the comment
24 period ends on June 27th of this year.
25 Finally, the NRC seeks your views on the

1 Yucca Mountain Review Plan. The following
2 presentations will include Pat Mackin talking about
3 safety during operations, and that is Section 4.1, and
4 Tim McCartin is going to talk about the long term
5 safety at the post-closure in Section 4.2.
6 And I am going to come back to you and
7 talk about security from theft and sabotage, and that
8 is the physical protection plan and material control
9 and accounting program in Chapter 3.
10 And then finally we will get a
11 presentation on the adequacy of monitoring of the
12 site. And that concludes my presentation, and I will
13 be happy to take your questions.
14 MR. CAMERON: Okay. Pat Mackin is going
15 to give us the first substantive part of this review
16 plan. This is what happens before the repository is
17 closed, safety of operations, and then we will go on
18 to you for questions and comments after this one.
19 MS. TILGES: And we will be able to ask
20 questions about Jeff's presentation?
21 MR. CAMERON: Absolutely. Again,
22 questions about both of these presentations. We are
23 just trying to get them both in together to give you
24 more time. Okay. Thanks, Kalynda. Pat.
25 MR. MACKIN: My name is Pat Mackin, and I

1 am an employee of the Center for Nuclear Waste
2 Regulatory Analyses. And just for clarification, as
3 Janet mentioned earlier, that is an agency established
4 with the specific purpose of assisting the NRC with an
5 independent safety assessment for a repository at
6 Yucca Mountain.
7 The NRC regulations for a repository
8 address two major time periods in the lifetime of a
9 repository. The first of those is during construction
10 and operations; and the second of those is after a
11 repository would be closed.
12 I am going to talk about the period during
13 construction and operation, and as I start out, I want
14 to mention that the Yucca Mountain Review Plan
15 includes information that has been learned over the
16 years from operating nuclear facilities that do many
17 of the same things that would be done at a repository.
18 And those would include handling spent
19 fuel, packaging spent fuel, and protecting workers and
20 the public from radiation doses.
21 There are a number of aspects that the
22 Department of Energy must present in the license
23 application dealing with pre-closure operations, and
24 that the Yucca Mountain Review Plan can turn to
25 establish its criteria for the review.

1 First of all, it is a pre-closure safety
2 analysis. That is the primary means by which the
3 Department of Energy must show that its repository
4 would comply with the health and safety standards.
5 Second, I am going to talk about
6 requirements for who can operate such a repository,
7 and what the training and qualifications would be.
8 Third, I am going to talk about how such
9 a repository would be operated. Next, I am going to
10 talk about a requirement in the regulations that DOE
11 provide a plan for retrieval and alternate storage of
12 waste should that be necessary up to the time that the
13 repository would be closed.
14 And lastly the regulations require that
15 DOE look ahead for long term, and if a repository is
16 licensed, and it would eventually be closed, and
17 surface facilities would be decontaminated and
18 dismantled.
19 And the DOE must provide in its plans for
20 how that would be done and in a way that it would
21 protect workers and the public.
22 First is the pre-closure safety analysis
23 that is required by the regulations, and what it is.
24 A pre-closure safety analysis is a way of assessing
25 the safety of a complex facility such as a repository,

1 and it asks three questions.

2 Let me put that a different way. DOE must

3 ask and answer three questions, and the NRC would

4 independently assess whether they had done so

5 adequately.

6 It must ask what could go wrong, and how

7 likely those things are, and what the consequences of

8 those things would be, and for a repository the

9 consequences would be radiation exposures to workers

10 or the public.

11 The techniques for a pre-closure safety

12 analysis are similar to techniques that are used by

13 the chemical industry in designing and operating

14 chemical plants, and by the petroleum industry for

15 refining facilities, and by the NRC for other kinds of

16 nuclear facilities, and the NRC staff are trained in

17 these techniques.

18 Okay. The pre-closure safety analysis

19 will do a number of things. First, it must identify

20 hazards, the events, the sequence of events that could

21 go wrong at a repository. Next, it has to look at the

22 likelihood of those events and sequence of events.

23 Next, it has got to look at and examine

24 the consequences. And again consequences might be

25 radiation exposures to the workers or the public. In

1 assessing consequences the DOE would have to identify
2 whether there are any machines, equipment, components,
3 that are necessary to be operated to ensure that
4 workers or the public do not exceed their exposure
5 levels. Those kinds of things are defined as items
6 important to the safety.
7 The consequences of things that could go
8 wrong in a repository then have to be compared to the
9 public health and safety standards. The NRC will not
10 license a repository for construction unless the
11 Department of Energy can demonstrate that it would be
12 operated such that those standards would be met.
13 And finally the pre-closure safety
14 analysis for those items that are important to safety
15 would have to be contained in a detailed design review
16 and analysis.
17 I talked about the pre-closure safety
18 analysis, and now I am going to talk about who would
19 operate such a repository, and what their
20 qualifications are, and there are several pieces to
21 this.
22 First, with the DOE organization structure
23 itself, the DOE would have to demonstrate that it has
24 an adequate chain-of-command that reports who is
25 responsible to who, and how authority is delegated.

1 Secondly, I mentioned earlier that there
2 are going to be likely items important to safety, and
3 that the DOE license application must demonstrate that
4 each of those items is managed by someone, and that
5 the job requirements for those positions are well-
6 defined and adequate.
7 Third, a lot has been learned around the
8 country and around the world about what is required to
9 train operators for a nuclear facility, and that
10 information has been incorporated in the Yucca
11 Mountain Review Plan.
12 And it covers such things as what are the
13 criteria for hiring people, and how are they qualified
14 and how are they trained, and how are they re-
15 qualified as time goes on.
16 And finally any worker in any nuclear
17 facility has to be trained in the hazards and proper
18 handling of radioactive materials. The DOE must
19 present such a program in their license application,
20 and the NRC will independently assess it.
21 I have talked about how you evaluate the
22 people that have been operating a repository, and now
23 I am going to talk about how a repository would be
24 operated.
25 The first part of that is that if the NRC

1 grants a construction authorization, over time
2 equipment, components, and machinery will be built at
3 the site.
4 As those facilities are built, they have
5 to be tested to ensure that they operate properly.
6 There has to be a well-established program for how to
7 do that.
8 Secondly, just like for our automobiles,
9 it is not an option to install a piece of equipment
10 and let it run. You have to periodically test it and
11 maintain it.
12 The DOE must present a plan that shows
13 that the items important for safety are routinely
14 tested, and those plans have to show who those people
15 are that would be qualified to run those tests, and
16 what the satisfactory testing would be,
17 and what to do if something is not right.
18 Anything that is important to safety at
19 any nuclear facility has to be conducted with a
20 procedure, a formal written procedure, and DOE must
21 present its plans for developing and providing these
22 procedures, and these procedures include things such
23 as what are the operating steps, and what are the
24 requirements for equipment and tools, what are the
25 qualifications to do the operations, and what are the

1 expected results, and what do you do if something does
2 not work out right.
3 I mentioned earlier in the pre-closure
4 safety analysis that the Department of Energy has to
5 identify those things that could go wrong at a
6 repository. Well, if things can go wrong, there must
7 be plans about what to do if they do go wrong, and
8 that is where emergency planning comes into play.
9 There are very specific requirements in
10 the Yucca Mountain Review Plan and in the NRC
11 regulations for what acceptable emergency plans are,
12 and that DOE has to submit such a plan in its license
13 application.
14 The Department of Energy must show that it
15 can adequately control the land around Yucca Mountain,
16 and this is for two purposes. One is to protect the
17 waste from disturbance by people, and the other is to
18 protect the people from the waste, and they must have
19 an adequate plan for doing that. And finally
20 construction of a repository is a complex undertaking,
21 and it requires good scheduling to show that things
22 happen in the proper sequence.
23 The DOE must present such schedules and
24 the NRC will assess them. Regulations require that
25 DOE have a plan, a capability, to retrieve the waste

1 from the repository and store it in alternate ways up
2 until the repository is closed.
3 The Yucca Mountain Review Plan provides
4 criteria for how we evaluate such a plan. And it will
5 look at the processes, and the plans, and how such
6 plans would protect worker development safety and the
7 public.
8 Finally, the DOE has to describe how it
9 would design a repository to make it so that it can be
10 disassembled, the surface facilities can be
11 disassembled at the end of operation in a way to
12 protect workers and the public.
13 All these things I have discussed are
14 aspects of safety during operations that the
15 Department of Energy must demonstrate in its license
16 application, and that the NRC will evaluate using the
17 Yucca Mountain Review Plan. And Jeff and I will take
18 your questions.
19 MR. CAMERON: Okay. I am going to go to
20 Kalynda first, because I believe she had a question
21 for Jeff. Kalynda.
22 MS. TILGES: Kalynda Tilges, Citizen
23 Alert. Jeff, on Slide Number 27, you said that the
24 scope of the review plan does not include
25 transportation issues. Why?

1 MR. CIOCCO: (Off microphone) Why isn't
2 it? Because the Yucca Mountain Review Plan applies tp
3 the safety of the Yucca Mountain site, and
4 specifically to Part 63, 10 CFR Part 63, the site-
5 specific Yucca Mountain regulation.
6 We do have separate regulations for the
7 transportation package design, and the quality
8 assurance, and physical protection of transportation,
9 and the Department of Energy also regulates shippers
10 and carriers.
11 However, this plan is specific guidance
12 for that regulation, or that site specific regulation,
13 once material is received on-site, and for the
14 operations, and for safety, and for the disposal, and
15 other administrative requirements, as well as the
16 physical protection.
17 So it applies to evaluating the safety of
18 the Yucca Mountain site.
19 MS. TILGES: Well, DOE for years has been
20 telling us that they are not responsible for
21 transportation and the NRC is responsible for
22 transportation.
23 MR. CIOCCO: Well, there is a joint
24 responsibility for the transportation, and the Nuclear
25 Regulatory Commission and several sister agencies --

1 the U.S. Department of Transportation, and -- well,
2 did you want to add something, Chet?
3 MR. CAMERON: This is Chet Poslusny who
4 will address that transportation issue.
5 MS. TILGES: Hi, Chet.
6 MR. POSLUSNY: Okay. Briefly, you asked
7 why the transportation is not part of the Yucca
8 Mountain Review Plan. Transportation regulations
9 under Part 71 for the NRC and under 49 CFR for the
10 Department of Transportation.
11 Those regulations support shipments of
12 spent nuclear fuel train loads, and also would support
13 shipments of spent nuclear fuel and for larger
14 shipping campaigns, if there was one, in the future.
15 That is the first answer.
16 Secondly, the impacts of transportation
17 are part of the evaluation of an EIS that exists on
18 the record. Again, we told you what our job is
19 relative to the final EIS and the NRC process.
20 So the review of transportation impacts
21 exists in the final EIS, and the regulations already
22 exist for transportation, safe transportation in the
23 United States.
24 The NRC would have to review the package
25 if DOE intends to use one for transportation or

1 several; or the DOE could choose and use existing cast
2 designs that the NRC currently has approved for
3 shipments to a repository.
4 MR. CAMERON: Is there anything else on
5 that?
6 MS. TILGES: Just a comment, that just for
7 the past 20 years now the DOE says that the NRC is in
8 charge of transportation, and the NRC says the DOT is
9 in charge of transportation.
10 And the DOT says it is DOE, and so maybe
11 one day we will find out.
12 MR. CAMERON: Okay. Thank you, Kalynda.
13 We will now go to Commissioner Herrera now.
14 Commissioner.
15 COMMISSIONER HERRERA: (Off microphone)
16 Thank you. Yesterday, I asked about the nature of the
17 repository itself and how the Act, I thought, dictated
18 that it would be a geological repository, and I think
19 in the answer it was mentioned that it had to be
20 substantially a geologic repository (inaudible), and
21 that the repository be of a geologic nature; is that
22 correct?
23 Well, I was informed yesterday by one of
24 our staff members as a result of communications with
25 the Technical Review Board, apparently the Technical

1 Review Board, the day that Congress was voting to
2 override the Governor's veto, was (inaudible), and
3 came to the conclusion that as it stands now with the
4 science currently in place, 98 percent of the
5 repository would actually be engineered, and 2 percent
6 of it would be a natural geologic repository.
7 Now, I am not a mathematician, but it
8 doesn't seem that a 2 percent geologic repository
9 meets the substantial portion requirement. Does
10 someone want to comment on that?
11 MR. CAMERON: Commissioner, that is an
12 important question and our next presentation, our next
13 presenter, Tim McCartin, is going to deal with that.
14 So if you could just wait until that time and directly
15 address that. I know that you have another comment.
16 COMMISSIONER HERRERA: I just want to make
17 sure that the question gets answered directly, and not
18 just through the presentation, because I appreciate
19 the presentation, because they are very informative,
20 I guess, but I think that --
21 MR. CAMERON: Well, Tim -- well, why don't
22 we answer your question.
23 COMMISSIONER HERRERA: Well, we can wait.
24 I don't want to mess with the order. That's fine.
25 MR. CAMERON: All right.

1 COMMISSIONER HERRERA: The second issue,
2 and I think Kalynda makes a good point regarding
3 transportation, the gentleman said that there were
4 existing regulations that would dictate transportation
5 issues.
6 The ones that are currently in place for
7 the existing shipment campaign, correct? Is that an
8 accurate assessment of what you said, sir?
9 MR. POSLUSNY: Chet Poslusny. They would
10 cover existing shipments which occur on a yearly
11 basis, and they would also cover any future large
12 shipping campaigns to a repository.
13 COMMISSIONER HERRERA: Okay. And how many
14 shipments would you say in total has the Department of
15 Energy actually undergone in its history of
16 transporting nuclear waste?
17 MR. POSLUSNY: I am not familiar with that
18 number, but --
19 COMMISSIONER HERRERA: Would the number be
20 about 1,030?
21 MR. POSLUSNY: It was about 1,300 NRC-
22 approved shipments of spent nuclear fuel. I am not
23 familiar with DOE's, because we don't regulate their
24 shipments currently.
25 COMMISSIONER HERRERA: Okay. So for the

1 NRC it is about 1,300?

2 MR. POSLUSNY: Over the past 20 years.

3 COMMISSIONER HERRERA: Over the past 20

4 years?

5 MR. POSLUSNY: Yes.

6 COMMISSIONER HERRERA: Do you know how

7 many shipments would come as a result of 77,000 tons

8 of nuclear waste being transported to Yucca Mountain?

9 Is it safe to say that it is substantially more than

10 1,300 or the 3,000 that Ms. Navis mentioned?

11 MR. POSLUSNY: Yes, substantially more in

12 mileage and the number of shipments. Yes.

13 COMMISSIONER HERRERA: So wouldn't it

14 stand to reason that if you have add substantially

15 more shipments, and you had additional security

16 concerns, and additional concerns for transportation

17 associated risks, and therefore the regulations should

18 be at least looked at, and perhaps updated to comply

19 with this new environment and the fact that the amount

20 of shipments -- excuse me, but to compare the DOE with

21 NRC's history of shipping nuclear waste to the

22 proposal by the DOE to ship 77,000 tons is like

23 comparing an ant to an elephant.

24 I mean, it just seems to me that we would

25 have to at least look at those regulations before we

1 move forward with our recommendation process, because
2 those are substantially different issues that we are
3 talking about there.
4 MR. POSLUSNY: We agree totally, and we
5 are doing exactly that on two fronts. On the first
6 front, we are doing vulnerability studies for both
7 transportation and storage casks, and looking at
8 potential threats and potential attacks beyond those
9 which have been considered in our current regulations.
10 And also others, which I don't have the
11 details, and I can't tell you what they are, but those
12 studies would be finished this coming December, well
13 before any large major campaign would occur.
14 COMMISSIONER HERRERA: I'm sorry to
15 interrupt, but I imagine -- and let's say for the sake
16 of argument that you go to adopt new regulations with
17 respect to the issues that we just discussed.
18 Now, I would guess that DOE would have to
19 substantially comply with those new regulations; is
20 that correct?
21 MR. POSLUSNY: Shipments made in NRC-
22 approved casks would have to be done that way with new
23 regulations. We would modify Part 71 of our
24 regulations, and DOT would modify their sister
25 regulations, and DOE would follow.

1 And the safeguard cask test would be
2 modified as well if we decide to do that.
3 COMMISSIONER HERRERA: I asked those
4 questions in that order because there is still a
5 tremendous feeling among residents of Clark County
6 quite frankly that the scientific community, including
7 the Technical Review Board, that when the Department
8 of Energy could not meet its standard for a geological
9 repository, you relaxed the standard.
10 I know that was disputed yesterday, but
11 that still is the perception, or that is not just my
12 perception, but those of the Technical Review Board
13 members, who are much more highly qualified than
14 myself to speak to those matters.
15 Now, if the same thing were to happen with
16 respect to transportation concerns, you could see that
17 there would be a recipe for disaster, and that's why
18 I have been supporting that we address that question.
19 MR. POSLUSNY: It would not be a separate
20 standard for just the DOE. It would be the same
21 standard for anyone who would ship spent nuclear fuel.
22 Now, I talked about security regulations
23 that may be changed, and that is based on an analysis
24 we are doing. We are also looking at the safety
25 aspects of a review of the casks.

1 We are doing a package performance risk
2 study currently, which would include full-scale
3 testing for the cask, both for impact studies, and
4 also for fire.
5 And currently we have a planning meeting
6 scheduled for August, and also in Vegas, looking for
7 comments, and suggestions, and technical, and any kind
8 of comments we could receive on that as well. And
9 that would affect the safety regulations on the cask.
10 MR. CAMERON: I think we are going to put
11 transportation in the parking lot and come back to
12 that so we can address that. There is a whole lot of
13 important issues to be discussed with respect to that.
14 COMMISSIONER HERRERA: Well, you mentioned
15 full-scale exercises. Is that full-scale physical
16 modeling?
17 MR. POSLUSNY: Yes, real testing.
18 MR. CAMERON: There are a lot of important
19 questions here, transportation being one of them. We
20 need to make sure that you hear what is in this
21 important document, and get a chance to ask questions
22 about that.
23 And then we can come back and we can talk
24 about other issues of concern. So it is just a
25 question of sequencing. Herb, do you have a question

1 on this?

2 MR. MARKS: Yes, I do.

3 MR. CAMERON: Okay. Great. Go ahead.

4 MR. MARKS: First of all, I don't want to

5 give you the wrong impression. We are concerned

6 citizens, and we don't harbor hostility towards any

7 members of the NRC.

8 MS. TILGES: Could you speak up, please?

9 MR. MARKS: I said that I don't want any

10 mistaken impression being conveyed by this meeting.

11 I am sure that none of the citizens of Las Vegas have

12 deep down animosity directed toward the members of the

13 staff and the employees of the NRC.

14 We are expressing our deep concerns over

15 issues, over all the issues pertaining to the safety

16 and impact of the proposed Yucca Mountain repository

17 on our lives, our health, the environment, and

18 probably for future generations, the economy, the

19 stability, life in this region.

20 So that our expression reflects that deep

21 concern and I hope that you can understand that. This

22 is not a personal attack. But with regard to Mr. Pat

23 Mackin's presentation, you have indicated that you

24 would consider, or that the DOE is required to

25 consider, about issues pertaining to what could go

1 wrong.

2 And how likely is it that what could go

3 wrong will go wrong, and what would be the

4 consequences if it went wrong?

5 And this format that you follow is similar

6 to what is followed in chemical and refinery

7 industries, and also by the NRC with regard to other

8 facilities.

9 I would like to make an observation that

10 there is a major difference -- in fact, several major

11 differences -- with regard to Yucca Mountain than the

12 matters that were used as an analogy for a model.

13 In the case of Yucca Mountain, we are

14 dealing with a project that is utterly unprecedented

15 on the face of the planet as was alluded to. You have

16 admitted that you have no experience whatever in the

17 construction of a spent nuclear fuel repository, and

18 apparently no other country has.

19 Secondly, not only is this unprecedented,

20 but with regard to (inaudible), these industries do

21 not deal with the same materials that have the same

22 characteristics as radiation.

23 So we are dealing with something as

24 someone has expressed, with something that is the

25 worst and most deadly material on the face of the

1 earth. This quality of difference creates enormous
2 challenges and enormous obligations for any agency
3 that assumes responsibility for its safety.
4 Secondly, not only is this the most
5 deadliest material created by man, but it also is a
6 project that cannot be reversed. It has a life span
7 that is beyond our imagination.
8 In other words, when you ask what are the
9 consequences in normal industry, or normal public
10 policy, if something goes wrong, it can be stopped,
11 and the process can be reversed, and the environment
12 can be cleaned up.
13 These are not possible with radiation
14 processes with respect to Yucca Mountain. It is those
15 characteristics and the inter-generational impact that
16 makes this unique.
17 Lastly, there is another characteristic
18 with regard to Yucca Mountain that is unique amongst
19 any licensing procedure you have ever been engaged in,
20 and that pertains to the public policy, wherein the
21 Federal Government is coercing Las Vegas, Clark
22 County, the southern Nevada region, to be exposed to
23 the risks or the processes that I have just described.
24 That is a policy without precedent in our
25 nation, and certainly without precedent in the

1 regulatory processes of the NRC, and it is those
2 unique characteristics with regard to the coercion,
3 the shifting of risk, the deadliness of the material,
4 the risk of permanent environmental damage that will
5 be irreversible, the impact on the economy that will
6 be irreversible, the impact on generations that will
7 be irreversible.
8 It is those differences that make your
9 modeling statements -- to cast them in very serious
10 doubt.
11 MR. CAMERON: Thank you, Herb, and thank
12 for your opening statement about animosity. We
13 realize that these are issues of deep concern here.
14 MR. MARKS: Absolutely.
15 MR. CAMERON: Pat, I think that -- is
16 there something that you would like to respond to in
17 terms of what Herb said? I think he was addressing
18 your part of the presentation?
19 Is there anything that you want to say on
20 that, in terms of the first of a kind, et cetera, et
21 cetera?
22 MR. MACKIN: I believe that we would all
23 agree with that, that this is a first of a kind
24 endeavor, but has very serious matters to consider,
25 and complex issues.

1 MR. CAMERON: Okay. Thank you. We are
2 going to go Steve Frishman now.
3 MR. FRISHMAN: Steve Frishman, for the
4 State of Nevada. Pat, for your pre-closure safety
5 analysis, you talk about the elements of that
6 analysis, and at some point in the probability of
7 events, there is a cutoff.
8 And if you could say what that cutoff is,
9 and then maybe relate it to something like the
10 possible event of either a military or commercial
11 aircraft crash on the surface of the repository.
12 MR. MACKIN: The Department of Energy is
13 required to consider events that could occur with up
14 to one chance in a million for the operating period of
15 the repository.
16 MR. FRISHMAN: And that is one chance in
17 a million per year?
18 MR. MACKIN: Yes. Now, that is a very
19 difficult number to understand. In fact, some people
20 say that that it is almost certain not to occur, but
21 they are -- the Department of Energy will have to
22 demonstrate, one, that it has considered all those
23 events using the kinds of techniques that are accepted
24 for that purpose.
25 And the NRC will independently assess

1 whether they can so operate before we would concur in
2 their safety analysis.
3 MR. CAMERON: Steve.
4 MR. FRISHMAN: Well, just for information.
5 I raise that partly because of a global concern
6 relative to both commercial aircraft and of course the
7 Nellis training area.
8 And I also raise it because in licensing
9 procedures for a private fuel service facility in Utah
10 is going on right now, and they have the military
11 aircraft traffic that is very similar to the numbers
12 and in configurations to Nellis.
13 And the battle is not over yet whether the
14 probability of a crash is high enough to even be
15 considered.
16 MR. MACKIN: Right.
17 MR. FRISHMAN: And so I just bring that up
18 and that people here should understand that and help
19 you to facilitate and get that issue out.
20 MR. CAMERON: Thanks, Steve. We are going
21 to go to Irene. And you do have to hold this pretty
22 close.
23 MS. NAVIS: Irene Navis, with Clark
24 County. A couple of comments. One is that in the
25 safety during operations section, we would like to see

1 the NRC go into just a little bit further on that.

2 I am looking at organizational structure,

3 and moving into looking at perhaps organizational

4 culture, and the history of the proposed licensee, and

5 not just the organization structures. That is one

6 recommendation we would like to make for the final

7 document.

8 And also the Yucca Mountain Review Plan

9 seems to be focused on the evaluation of the license

10 to construct a repository, and in the final plan we

11 would like to see go a little bit further and place

12 more emphasis on the license amendments with regard to

13 receipt of waste and permanent closure, and be a

14 little more focused in those areas.

15 And in particular that provision of

16 construction being substantially complete, we would

17 like to see a little bit more definition added to that

18 as a quantification.

19 A couple of other terms that we found kind

20 of confusing and need to be quantified and perhaps

21 clarified, you seem to mix the term reasonable

22 assurance in the review plan and reasonable

23 expectations listed in Part 63, and we don't know if

24 those are interchangeable, or if they have different

25 definitions. So we just want that clarified. Thank

1 you.

2 MR. MACKIN: Thank you.

3 MR. CAMERON: Thanks, Irene. Let's take

4 one more on this issue, and if there are other

5 questions on this issue, we will come back to it. But

6 I want to get Tim McCartin up here to talk about long

7 term performance.

8 And, Tim, I want you to think about if

9 there is any mention to your presentation with the

10 issue that came up before this long term safety. If

11 there isn't, we will just wait and pick it up.

12 But I thought there might be so that we

13 could try to get that out, okay? But I will leave

14 that to your discretion. Kalynda.

15 MS. TILGES: I wasn't going to ask this

16 all at once because I thought we were separating the

17 two presentations, and so I apologize. Just to kind

18 of follow up on what Irene said, that question was

19 brought up at the Pahrump meeting as well about taking

20 into consideration the Department of Energy's abysmal

21 track record in contamination when it is under their

22 control.

23 And at the Pahrump meeting, I believe the

24 answer to that question was that you weren't required

25 to take their past track record into account, and that

1 they would start with a completely new slate.

2 That is just a comment and I was going to

3 bring it up, but Irene already did. And on Slide

4 Number 38, on operating and maintenance procedures,

5 you talk about restricting access and land use.

6 I am a little confused as to how that

7 could happen seeing that Yucca Mountain is actually

8 less than five miles from the Highway Number 95.

9 MR. CAMERON: Pat.

10 MR. MACKIN: If I understand your

11 question, it really boils down to would it be safe to

12 continue transportation on Highway 95 with a

13 repository in place.

14 MS. TILGES: Well, I hope I haven't opened

15 up a full can of worms here. This whole meeting of

16 the draft Yucca Mountain Review Plan seems a little

17 premature considering there is a premature EIS,

18 because they don't even have a final plan yet.

19 But the last of the new flexible plans

20 that have been introduced call for an extremely large

21 surface facility, such as Adrian mentioned, and huge

22 pool repositories having to do with fuel, and we are

23 talking about this type of structure and this type of

24 surface facilities less than five miles from the main

25 highway, the only highway that connects the State from

1 one part to the other.

2 And it seems to me that this is just one

3 of the issues, and not to mention the Nellis flyovers

4 and planes have crashed, and bombs have gone awry, and

5 so the likelihood of that happening is that it has

6 already happened.

7 But we are talking about this kind of

8 facility with surface cooling ponds less than five

9 miles from the major public access way. And I fail to

10 understand how that can ever be made safe, and how you

11 could ever consider that could be made safe.

12 MR. MACKIN: If I could provide an answer

13 to that, and perhaps Tim would like to add to it, but

14 we don't have the Department of Energy license

15 application with its design, and that if the design

16 had those facilities, they would be evaluated if they

17 met the safety criteria, and if they didn't the NRC

18 would not grant the license. We don't have a design

19 that shows those facilities.

20 MR. CAMERON: Kalynda, did you want to add

21 anything?

22 MS. TILGES: I guess I don't understand

23 what you mean by safety requirements.

24 MR. MACKIN: Safety requirements of the

25 health and safety standards of the EPA, and the ones

1 that are in the NRC regulations.

2 MR. CAMERON: Okay. Thank you, guys.

3 Let's go to Tim McCartin.

4 MR. MCCARTIN: I am Tim McCartin, and I am

5 an employee with the Nuclear Regulatory Commission.

6 I would like to say one thing to Herb, in terms of his

7 previous statement.

8 When we first started doing public

9 meetings in Nevada in 1999, I still remember one of

10 the first meetings where somebody came up and said

11 very simply that we are counting on you to protect us.

12 And let me say that we understand that it

13 is a very serious burden, and it is a important

14 burden. I don't think we were ever offended by anyone

15 in Nevada.

16 I think we are here to hear you, and I

17 think it is always appropriate for you to remind us of

18 that heavy burden that we have. We take it very

19 seriously.

20 I will never forgEt those words, and I

21 appreciate what you said also, and sometimes people

22 get emotional and say things in a loud voice. And I

23 grew up in a large family where the person who spoke

24 the loudest and the last was supposed to be right, but

25 I appreciate what you said, and I think it is always

1 appropriate for a citizen to remind us of the
2 important job that we have got.
3 MR. MARKS: I appreciate your
4 interpretation and I appreciate your sincere devotion
5 to the idea of protecting Southern Nevada.
6 My own concern, and my own conviction, is that the
7 people of Southern Nevada should be the ones making
8 the determination.
9 So that while I appreciate your expression
10 and your devotion, that is not something with you that
11 I share.
12 MR. CAMERON: Thank you, Herb. Tim.
13 MR. MCCARTIN: I am going to be addressing
14 long term safety, in terms of long term, I am
15 referring to that time period after waste is taken or
16 placed in a potential repository.
17 In terms of safety, we are talking about
18 the behavior or future behavior of the potential
19 repository, and would be within the safety
20 requirements set by both the U.S. Environmental
21 Protection Agency and the NRC regulations.
22 And tonight I will talk about three
23 specific aspects of this. One is that I will describe
24 the safety requirements, and I will then describe how
25 the Department of Energy is required to evaluate

1 safety.

2 And finally I will finish up with how the

3 NRC will review this safety evaluation. In terms of

4 the requirements for the repository, there are three

5 numerical requirements.

6 One, for individual protection, and a

7 separate one for ground water protection, and a third

8 requirement that is a way to judge the safety of a

9 repository if there was an inadvertent drilling

10 through the repository, and what is referred to as

11 human intrusion.

12 These three requirements were propagated

13 by the Environmental Protection Agency, and they have

14 been incorporated into our regulations. There is a

15 fourth requirement, and that is a requirement for

16 multiple barriers.

17 This is a requirement that says that there

18 has to be safety functions associated with the

19 repository that are both natural and engineered. And

20 I would like to talk about that in a little more

21 detail.

22 When we talk about engineered barriers, we

23 are talking about safety functions that come from man-

24 made materials. This would be -- an example would be

25 the waste package and the drip shield. A waste

1 package is a relatively straight-forward concept.

2 The drip shield -- and some of you may be

3 new to that term, but it is sort of a tent that

4 surrounds the waste package, and what it is designed

5 to do is prevent drip from falling directly on the

6 waste package, and it is sort of like a tent if you

7 will.

8 And hence the name drip shield, and it is

9 shielding the waste package from drips hitting

10 directly on the waste package. And it is a man-made

11 feature, an engineered feature.

12 And also they are required to have safety

13 features that are associated with the site, the

14 geology if you will. The waste is buried

15 approximately a thousand feet below the surface, and

16 that thousand feet of rock prevents anyone from coming

17 in direct contact with the waste. That is a safety

18 feature.

19 Additionally, potential releases from the

20 waste package will have to seep through these same

21 rock layers, and possibly going thousands of feet

22 before there is the potential that these releases

23 could come in contact with human beings. That is also

24 a safety feature of the geology.

25 I would now like to address Commissioner

1 Herrera's question in terms of this is the repository
2 in our regulation, and also the Nuclear Waste Policy
3 Act also requires that the repository be comprised of
4 multiple barriers.
5 There has to be barriers associated with
6 the engineering, and there has to be barriers
7 associated with the geology. Now, that does not mean
8 that in terms of -- and I would like to draw an
9 analogy to fire protection, and it is the easiest way
10 I can think of drawing this analogy.
11 Buildings are designed so that they don't
12 have fires. There is electrical codes, et cetera, so
13 you don't have a fire. However, on the ceilings,
14 there are smoke detectors, and there are sprinklers.
15 So there are other things there. Now, we
16 don't have a fire here today, and so the sprinkler
17 system, and the smoke detectors, aren't working. They
18 have a capability that is there.
19 Maybe there is never a fire in this
20 building ever, but that capability is still there.
21 Likewise for the repository. If the waste package
22 never leaks, is the geology providing you something.
23 Our regulations require that the geology
24 needs to provide some capability, and whether that
25 capability is actually called upon is a different

1 issue.

2 But in our regulations the Department of

3 Energy would have to show that the geology, these rock

4 layers, provide a capability to reduce and limit the

5 releases of radionuclide to potential exposures. So

6 that capability will be evaluated.

7 Now, I know that you have referred to a

8 NWTRB publication that I believe was referring to some

9 Department of Energy calculation, 98 percent, versus

10 2 percent.

11 One of the problems that the Department of

12 Energy has struggled with that NWTRB also, that if

13 nothing gets out of the waste package, that means the

14 geology does nothing.

15 Well, likewise, I once again want to go

16 back to this. If we don't have a fire, that doesn't

17 mean that there isn't a capability to the sprinkler

18 system and smoke detectors.

19 That capability is still there. Somehow

20 people are trying to do calculations to show what this

21 capability is, and that is the calculation 98 percent

22 versus the 2 percent.

23 And what the Department of Energy did as

24 I understand it, because they found a number of

25 calculations where they artificially failed some of

1 the containers, and let's assume all the waste
2 packages failed today, and let's assume some other
3 things failed.
4 And they get different results, and in
5 comparing these different results, they come up with
6 percentages of what percentage they relate to. It is
7 often difficult to interpret those numbers.
8 I am aware of the 98 percent versus the 2
9 percent. My understanding is that those calculations
10 are related to a very small aspect of the repository
11 inventory.
12 Most of the contaminantion doesn't get
13 out, but they look at a very small part of that. It
14 is a way to try to explain it, and I don't know if it
15 does a very good job.
16 The NRC regulations, what it is called
17 upon, they need to talk to the capability of the
18 natural and engineered barriers. That capability
19 would look at how long does it take the waste to
20 migrate, and how much would be held up, and these
21 kinds of things that would give a better
22 representation I think of the capability of the
23 barriers.
24 However, there is this problem of how best
25 to describe barriers when the waste package doesn't

1 fail. Would you like me to stop and --

2 MR. CAMERON: Why don't you finish your

3 presentation and then we are going to go back to the

4 Commissioner and see if that is a good explanation for

5 him, okay?

6 MR. MCCARTIN: Okay. That is a little

7 more detail than I usually give about the barriers,

8 but that is the regulation part of the requirements

9 for the repository.

10 I would now like to try to address how

11 will the Department of Energy evaluate the safety, and

12 in that the regulations require a systematic and

13 thorough analysis of the repository.

14 And in the regulations we use the term

15 performance assessment to describe that systematic and

16 thorough analysis that the Department will have to

17 conduct.

18 We have three questions that describe this

19 type of analysis; what could go wrong; how likely it

20 is; and what are the consequences. And if you

21 remember, those are the exact same questions that Pat

22 Mackin had for the pre-closure safety analysis.

23 And you are right. When you are looking

24 at safety, there is a lot of things that you do

25 similarly. These questions are asked in the same way.

1 However, I would like to now go into how does this
2 apply to the repository long term safety.
3 It is slightly different in that regard
4 how he answered these questions, because it is the
5 long term behavior than the operational behavior. In
6 terms of what can go wrong, as I said, we require that
7 the Department of Energy have a very thorough
8 analysis.
9 In looking at what could go wrong with the
10 repository, we have three categories that we have
11 identified, both in the regulations and in the review
12 plan, to make sure that this analysis is systematic
13 and complete.
14 The three categories are features, events,
15 and processes. Features are the kinds of things that
16 you can see and measure; a fault, or a large crack in
17 the rock, and you can see how wide is the fault, and
18 how long is it. These are features, things that you
19 can see and measure.
20 Events are the kinds of things --
21 something that happens at a particular instant in
22 time; an earthquake, a volcano, is something that
23 could happen at a particular time period.
24 In contrast to events, there are
25 processes. These are things that -- and not

1 necessarily something that happen at a particular
2 instant in time, but happen gradually over very long
3 time periods.
4 For example, dripping of the water into
5 the repository, and corrosion of the waste packages,
6 and something that happens gradually over a very long
7 time period.
8 So, you have features, events, and
9 processes, and DOE is required to identify all these
10 types of things, and how they might affect the
11 repository, and get into how they will affect the
12 performance of the barriers.
13 DOE has to identify what was engineered
14 and geologic barriers. And these features, events,
15 and processes as you can see, could cause some
16 disruption, some effect on these barriers or the
17 repository.
18 After having analyzed what could go wrong,
19 the next question is how likely is it. First, one
20 must consider the probability, how often something
21 occurs. Also associated with the probability is how
22 big it is, and the extent.
23 For example, earthquakes. Small
24 earthquakes occur more frequently than large
25 earthquakes. So when you look at the frequency or the

1 probability, it is also related to how big it is.

2 And secondly is the location. Where does

3 it happen. I will go back to my dripping into the

4 repository example. Is it dripping over all of the

5 waste packages, or is it dripping in a particular

6 location, and how likely is that to occur.

7 Finally, having done how likely it is, and

8 what could happen, the next thing is what are the

9 consequences if these things occur. And there are a

10 couple of things that the Department of Energy is

11 required to look at.

12 First, they have to look at safety during

13 normal conditions. What do I mean by normal

14 conditions? When barriers are performing as expected.

15 But also if you noticed, with the

16 features, events, and processes, and we are looking

17 at what can go wrong, safety needs also to be

18 evaluated during what we would call during disruptive

19 conditions, when things that could go wrong, if they

20 occur, such as large increases in rainfall, volcanoes,

21 et cetera.

22 All these would also be related to the

23 functioning of each of the barriers. This also gets

24 back to looking at how the barrier is performing, and

25 once again I will go back to the 98 percent, and the

1 2 percent, and look at a very narrow part, and look at
2 the dose and nothing more.
3 We will be looking at the functioning of
4 each of the barriers, and what is the barrier doing,
5 and how has its function changed, and by that possibly
6 let's say that after releases occur from the waste
7 package, maybe it takes thousands of years to travel
8 from there to some potential location where it could
9 be intercepted by humans.
10 Well, that thousands of years, we would
11 expect the Department to look at how that barrier
12 functioned. Is that travel time significantly reduced
13 by some of these features, events, and processes? How
14 does it change?
15 And each barrier has its own function, and
16 we would require the Department to look at the
17 function of the barrier; the 98 percent, and the 2
18 percent, yearly related to the dose.
19 And ours is a more general, I think,
20 comprehensible look, and we are not just interested in
21 that final answer. How is this barrier performing,
22 and how is the geology doing, and how does it change
23 with time?
24 Okay. That covers the requirements for
25 the Department of Energy, and that is the performance

1 assessment that they are required to do. As I said,
2 I would go through the requirements for the
3 repository, and how DOE needs to evaluate safety and
4 performance assessment.
5 Now I would like to go to that third part,
6 how is the NRC going to review this safety evaluation
7 that the Department is required to conduct. First, we
8 want to look at the purpose for the barriers.
9 What are the barriers doing, and how they
10 have performed over time, and what can go wrong with
11 them. We will review -- and it is up to the
12 department to identify or what is the function of the
13 barriers, and how they change with time.
14 Next, we will look in the performance
15 assessment in those three questions that I identified;
16 features, events, and processes. The Department is
17 required to have a thorough comprehensive list of what
18 can go wrong, and we will review that list to see if
19 we agree.
20 We will consider it. The NWTRB has raised
21 comments, and our own advisory committee have raised
22 comments. There have been other groups in Nevada that
23 have raised questions.
24 We certainly have heard all of those
25 things, and when we look at the Department, we are

1 aware of all of these questions that have been raised
2 in looking at what can go wrong. And then the
3 likelihood and then certainly the consequences.
4 There is ultimately estimating that future
5 behavior on the repository, and it is a very complex
6 problem. It is the future behavior. The Department
7 has scientific models, and the NRC has also developed
8 some of our own scientific models to estimate this
9 future behavior.
10 That reliance on scientific models
11 requires that there is scientific information that is
12 supporting those features, events, and processes
13 likelihood and consequences, and that calculation
14 needs to be supported by scientific information.
15 And clearly with a problem as complex as
16 the Yucca Mountain facility, there is going to be
17 differences of opinion in the scientific information.
18 You probably read the newspapers over time on some of
19 these differences.
20 The NWTRB, the ACW, our advisory
21 committee, also raised differences of opinion between
22 scientists on what the information is saying.
23 That information we will evaluate, and the
24 department is also required to evaluate and consider
25 these differences of opinion. We have alternative

1 conceptual models is the words that we use in the
2 regulation, and that is, looking at alternative
3 conceptual models is really scientific differences of
4 opinion of what can happen and that needs to be
5 evaluated.
6 And I remember -- and I don't remember if
7 it was Andy, but someone raised the question of we
8 have never done this before, and can we be sure, et
9 cetera. And that is a very important question.
10 There are things that our regulation also
11 requires. We heard from the NWTRB, and they refer to
12 it as multiple lines of evidence. And by that they
13 mean you are not relying on a single piece of
14 scientific information to make your decision.
15 And you have multiple ways to get at this
16 information. You have laboratory tests, and you can
17 conduct tests in the lab to give you some information.
18 You also can conduct tests in the field,
19 and certainly the Department of Energy is conducting
20 experiments at the Yucca Mountain site, and Nye County
21 has some wells that they have put in. There is
22 information from the field that is in investigations.
23 And most importantly, another phrase
24 referred to was what is natural analogs, and once
25 again, yes, these scientific models have to estimate

1 things far into the future.

2 Natural analogs. There are certain

3 geologic processes that you can observe in nature and

4 take measurements to get an understanding of how a

5 future repository might behave.

6 And the natural analogs are a very

7 important part of that. One example is that in a rock

8 formation the same type of rock formation as Yucca

9 Mountain, there is a uranium deposit in between the

10 rock formations, and that has been studied by the NRC,

11 and it has also been studied by the Department of

12 Energy, to look at -- it has been there for tens of

13 thousands, hundreds of thousands of years, and how has

14 the uranium migrated through this same kind of rock

15 that is at Yucca Mountain, and that is a way to give

16 you a little more confidence.

17 And that part is multiple lines of

18 evidence. You don't rely on one piece of evidence.

19 You use multiple lines of evidence, and in that way we

20 can try to get more confidence in our estimate of the

21 future behavior.

22 Having done that for our review, I want to

23 give an example here of the types of things that we

24 would be looking at for a particular example, and I

25 used dripping water as one example.

1 Clearly, there is present-day testing
2 going on, and measurements going on by the Department
3 of Energy to determine where dripping might occur, and
4 how much dripping could occur, and we will be looking
5 at those tests also.
6 Future climate changes. The present day
7 testing doesn't necessarily tell you if the climate
8 5,000 years from now is cooler and wetter, and what
9 will happen, and how many waste packages might get
10 dripped in that time.
11 We would be looking at future climate
12 changes, and some of that is certainly done with --
13 once again these scientific models. Thirdly, waste
14 effects on the rock and water.
15 As was mentioned the fuel does generate a
16 deep heat, and this heat will affect the properties of
17 the rock, and it will affect the water, and how is
18 that going to affect dripping.
19 That needs to be evaluated, and you need
20 to do some tests, and they are currently doing some
21 tests like that at the test site with respect to the
22 heat, but that needs to be evaluated also.
23 In terms of the -- and I guess that Chip
24 wanted me to mention the long term surface aging. I
25 think that the NWTRB has recommended at times to the

1 Department that they go with what is called a pool
2 repository, and keep the temperature down.
3 Part of the strategy for the Department of
4 Energy could be if they take the recommendation of the
5 NWTRB that they might keep some of the materials in
6 the pool at the surface prior to putting it into the
7 repository.
8 And that is a way to thermally manage how
9 much heat goes into the repository. And lastly the
10 long term changes in the drips. As I said, you can
11 look at the drips today, and you can do experiments in
12 there, and look at the dripping in there.
13 But relatively speaking the drips of the
14 tunnel are smooth. With time, you would expect what
15 they call drip lap. Some of the rocks from the
16 ceiling would fall and it would no longer be smooth,
17 and the fact that it will no longer be smooth could
18 effect that dripping.
19 We expect that the Department can evaluate
20 how that future behavior will evaluate in time, and we
21 will also be looking at that. So when you look at the
22 review plan, there is a lot of mention of different
23 components of the science, and you will see these
24 kinds of things mentioned, and that we are trying to
25 look at all of the different aspects, and how will the

1 repository evolve over time.

2 And with that I would like to conclude by

3 saying the long term safety depends on both the site

4 and the man-made barriers, and it requires both.

5 It requires a thorough performance

6 assessment, and lastly, it requires some scientific

7 information that would support the performance

8 assessment, and with that, I will be happy to answer

9 any questions you may have.

10 MR. CAMERON: Thank you very much, Tim.

11 Let's as the first order check in with Commissioner

12 Herrera about the natural barriers. Commissioner.

13 COMMISSIONER HERRERA: (Off microphone)

14 Thank you. I appreciate your answer, although I have

15 to admit that I don't have the scientific expertise to

16 know whether it was a good one or not.

17 My only question is -- and I understand

18 your explanation and I understand the analogy to the

19 fire, but if this is that simple, then why is it

20 making the review board so concerned about that issue?

21 They have made it plainly clear that there

22 is substantial concern about that issue, and what is

23 the root of their concerns?

24 MR. MCCARTIN: Right. And I agree that --

25 and therein lies the problem, that the analyses that

1 are presented, and have been presented to date, do not
2 give a good understanding of what the different
3 barriers of the repository are doing.
4 That is at the heart of it, and there
5 isn't a very simple answer to that, and I think that
6 everybody is scratching their heads to try to come up
7 with what is a better way of understanding what the
8 barriers and their contribution are.
9 And I think it is incumbent upon the NRC
10 and the Department to have a better way to describe
11 it. I hope right now that in the regulation we define
12 the barrier as something that had the ability to have
13 an effect on the movement of water, or the movement of
14 waste.
15 And I think that is the way that I would
16 like to see it, and how is it going to affect the
17 movement of waste or the movement of water. I think
18 that needs to be described.
19 And unlike -- well, the results that we
20 have seen today -- oh, if I fail all the containers,
21 I get a dose of X, and if I failed all this, I get a
22 dose of this. Well, what does that mean? Well, I
23 mean, the difference between these two.
24 And it doesn't really tell you what is
25 happening and why, and our own ANCW has been critical

1 of that. That it seems to be that you fail all these
2 waste containers, and something that can happen at T-
3 zero, at the very beginning.
4 There are other barriers that might mask
5 the behavior, and cover the behavior of another
6 barrier, and it is a complex problem. But to me when
7 you describe the capability of barriers, in terms of
8 how they affect water, rain, and waste.
9 MR. CAMERON: Commissioner.
10 COMMISSIONER HERRERA: This is my final
11 question, because I promised my wife three hours ago
12 I would take her to dinner, and she is getting
13 inpatient with me.
14 Obviously the NRC's role in this is post-
15 site approval, and you will accept the DOE's
16 application, and identify deficiencies, and ask them
17 to remedy these deficiencies, et cetera, et cetera.
18 Well, shouldn't that be resolved to an
19 almost absolute certainly before the site process is
20 completed?
21 I mean, in an ideal environment, shouldn't
22 a question of that degree, of that substance, be one
23 that -- for example, the movement of water in the
24 repository, the movement of waste in the repository,
25 shouldn't that be addressed before the application

1 gets to you, because those seem to be the heart of the
2 site suitability concerns.
3 MR. MCCARTIN: Well, the NRC's role is for
4 the license application --
5 COMMISSIONER HERRERA: I mean, ideally,
6 shouldn't -- I mean, if I put the cart before the
7 horse, making the site itself final before addressing
8 one of the most important critical questions of the
9 site itself?
10 I mean, I understand that your role as the
11 NRC is to identify the deficiencies, and ask for them
12 to do remedies to the degree possible. But let's say
13 for the sake of argument that Yucca Mountain has a
14 geologic repository isn't suitable because of the
15 movement of water, or the movement of waste
16 potentially.
17 Then we have lost our opportunity because
18 we made a decision based on incomplete information,
19 and now we are forwarding you an application that
20 doesn't address that.
21 MR. MCCARTIN: Well, what we are working
22 towards is ensuring that the Department of Energy
23 gives in the license application, gives us the
24 information so that we can review that very issue, and
25 we can evaluate the role of engineered and geologic

1 barriers.

2 We make no decision of whether they

3 comply. We want them to give us enough information so

4 that we can do our technical review, and it is our

5 technical review at the licensing hearing that will

6 decide whether they have complied.

7 But we need the information, enough

8 information to make -- to be able to do our technical

9 review.

10 MR. CAMERON: Okay. Thank you. And I

11 guess we should thank Mrs. Herrera and everyone else.

12 There is a number of people who want to ask questions

13 here.

14 MR. MARKS: I had just a follow-up.

15 MR. CAMERON: We will get to you, Herb.

16 We will get to you. We are going to go to Adrian,

17 Irene, Steve, and Herb.

18 MS. ZOLKOVER: I think underneath all of

19 this there is an assignment of responsibility. The

20 NRC has a job to do, and you have nuclear power plants

21 with maybe three guards, retired people who don't know

22 how to weld a gun.

23 And the NRC says, well, if it is more than

24 one truckload, or three people, one inside or two

25 outside, they don't need to know how to do anything

1 more than that, because the government has to do it.
2 And the NRC is like, who? Me worry? It is
3 not being done. There are terrorists out there.
4 Something has fallen through. One reason I say this
5 is that I think the simpler it is, maybe the better it
6 is.
7 Gary Tubbs and his article, "Whose Nuclear
8 Waste," observes in MIT Magazine of Innovation and
9 Technology Review, January/February of 2002, "The more
10 geologists have learned about Yucca Mountain, the less
11 viable that model has become. In the past year, both
12 the National Research Council and the Harvard
13 University of Tokyo Collaboration, advanced an idea
14 that seems to be gathering support among experts in
15 the nuclear waste debate."
16 "The gist of it is to slow down, rethink,
17 and do it right. The industry has learned to store
18 spent nuclear fuel on site in dry storage casks.
19 These concrete or steel casks are easy to use, easy to
20 license, and according to the Nuclear Regulatory
21 Commission, will keep the spent fuel safe for a
22 century."
23 "Indeed, says DOE Williams, everyone
24 agrees that dry cask storage, known technically as
25 monitored surface storage, is an adequate temporary

1 solution to the problem of spent fuel, at least from
2 the safety and security points of view."
3 The Science Magazine, January 13th, '95,
4 at four articles from a symposium at Cal-Tech on L.A.
5 earthquakes in L.A.
6 And they postulate that from measuring all
7 the stress, Southern California would have had to have
8 had in the L.A. area basis, a 6.7 earthquake every 11
9 years for the past 200 years to have released the
10 energy that is stored. There is so much energy.
11 And when there is that much tension it
12 generally releases a big moment, and which would be a
13 7. something going over 15 no-faults for a hundred
14 miles around. And then you read in the footnote that
15 they have underestimated the probabilities and
16 dangers in every case.
17 And another footnote says that they have
18 not included the San Andreas in their scenario. Then
19 I guess -- and I read someplace where an expert said
20 that the Las Vegas area would probably suffer from
21 that, either one of those or both of them, the
22 equivalent of what L.A. had in '94.
23 When I went to the Yucca Mountain site, I
24 asked a USGS scientist what happened in earthquakes.
25 He said, well, what happens is that it goes around the

1 tunnel.

2 Now, in L.A. in 1994, one reason that a
3 moderate 6.7 earthquake, where 80 percent of it was
4 dissipated in the Suzanne Mountains didn't knock out
5 the whole city, and this moderate 6.7 -- and there was
6 a problem that there was a complex configuration. It
7 wasn't just one thing.

8 It wasn't a hole in one. It was two
9 angles, and that means that things wash kind of. That
10 ain't so simple. And another minor detail that I am
11 concerned with is if water gets to those things, and
12 they are hotter than boiling, steam takes up 600 times
13 the space of the water.

14 You could have explosions. You can't take
15 an average rainfall. You can have a cloud burst, and
16 it is a mountain, and it all goes down like a swimming
17 pool down into one place, and then starts up.

18 I am really not very convinced at all, and
19 I think the safest thing to do would be to put those
20 things into steel containers, and have maybe 20 places
21 monitoring in the U.S. Put them on 12 foot pads thick
22 of concrete, and put 12 feet all around so that they
23 could unplant them if they need to moderate something,
24 and give up on this repository.

25 MR. CAMERON: Thank you, Adrian. I am

1 going to ask Tim to talk to Adrian's points on the
2 earthquake and how that fits in to long term. And I
3 am going to put the alternatives issue up here. But
4 could you speak to that?
5 MR. MCCARTIN: Sure. Earthquakes are one
6 of those events that needs to be evaluated. It is one
7 of those issues where there is some scientific
8 differences of views that the Department will have to
9 consider.
10 There are differences in views in
11 evaluating the extent and the number of earthquakes
12 that could occur, and that might occur at the site.
13 It will be evaluated. Regarding this steam explosion,
14 the Yucca Mountain rocks are fractured, and there are
15 a lot of fractures there.
16 And the Department has even conducted some
17 thermal tests, and people will say that the mountain
18 breathes, and that there is a flow of air. So it is
19 not in a confined environment where this steam would
20 build up.
21 It would be vented, and so the steam
22 explosion shouldn't occur.
23 MR. CAMERON: Okay. Thanks, Tim, and we
24 are going to go to Irene, and then to Steve, Herb, and
25 Dennis has a question, and I think Kalynda. Irene.

1 MS. NAVIS: Thank you. I was at the TRB
2 meeting a couple of weeks ago and their focus was
3 really performance confirmation, and I know that is in
4 your next section. But they did talk a lot about
5 ongoing testing through the licensing process.
6 So my question is how is the DOD's plan to
7 continue testing through licensing on these safe
8 barrier safety issues impact the licensing process?
9 How will the NRC evaluate that future testing?
10 For example, as they are testing the drip
11 shields, and they realize the drip shields aren't such
12 a good idea, or they maybe need to be made out of a
13 different material, or something, at what point does
14 somebody say time out, and you either have to go back
15 and readdress this, or this is a big enough problem
16 where we have got to stop your license clock right
17 now? How do you address that?
18 MR. MCCARTIN: There are a couple of
19 points that you have raised that are all very
20 important. First, in making the initial
21 determination, the NRC has to have sufficient
22 information to know that the repository will be safe.
23 However, that isn't good enough. There is
24 what in the regulation is called a performance
25 confirmation program. That program is designed to

1 say, okay, what is the -- if you look at the barriers
2 that are important to performance, and the key safety
3 functions that you have, this performance confirmation
4 program is directed to we want you to conduct tests to
5 confirm what you have told us in the license
6 application, called the safety function of the
7 barrier.
8 This performance confirmation program
9 would continue, and is required to continue from the
10 start and all the way to the time of the permanent
11 closure.
12 And at key decision points, the DOE is
13 required to use that information to update the
14 performance assessment. First, there is the
15 construction authorization as Janet mentioned, and
16 then there is a license to actually receive waste at
17 the site.
18 It would be updated at that time, and then
19 at the time of closure, it would be updated again.
20 However, the regulations require that if DOE learns
21 anything that has a significant effect on the decision
22 that we make, they are required to let us know, and
23 let all the affected parties know we have found this
24 information, and here is the safety implication.
25 So regardless of these scheduled updates,

1 they are required, and the NRC -- and as part of our
2 inspection and enforcement, we go out and look at this
3 thing. We are looking over their shoulders.
4 And so the information would be evaluated
5 at those scheduled times, but if there is something
6 that is found out that is important, they have to
7 report it to us, and it would be determined at that
8 time if any changes were necessary.
9 And clearly the ability to retrieve the
10 waste is affected by that. If they learn at some
11 future date that this is not going to be safe, that's
12 why we --
13 MR. CAMERON: Thanks, Tim. We have just
14 these two little short subjects to go. One of them is
15 the performance confirmation program. Okay. Herb,
16 and then we will go to Dennis. Herb, you need to hold
17 that close.
18 MR. MARKS: Tim, in addressing
19 Commissioner Herrera's question, are you saying that
20 the DOE has not yet provided the necessary information
21 to make this assessment or determination with regard
22 to the barriers?
23 MR. MCCARTIN: Well, right now people have
24 alluded to the 293 agreements that we have with the
25 Department of Energy. Part of that is based on

1 additional information that they have to give us. We
2 had a technical exchange with the Department I'll say
3 6 to 9 months ago regarding barriers.
4 And we did tell them that while they have
5 done these dose calculations, and done what they call
6 neutralization analyses, they fail a barrier and see
7 what the dose is.
8 And we pointed out to them that the
9 regulation requires you to describe the capabilities,
10 and that does not describe the capabilities. So they
11 are aware that they have to give us additional
12 information.
13 MR. MARKS: So how could they recommend
14 this to the President without that very basic
15 determination with regard to suitability of the site?
16 MR. MCCARTIN: Well, remember that the
17 recommendation is not saying that they had all the
18 information today for a license application.
19 Obviously the 293 agreements say they need more
20 information.
21 They have a lot of information of the
22 site, and that they have provided.
23 MR. MARKS: The DOE said that those
24 additional 293 were minor, and that they were not
25 substantive, and they were not show stoppers to use

1 the Secretary's statement of words.

2 MR. MCCARTIN: I would agree that the --

3 and I would have to go back and look at what he said,

4 and it could be that they are not show stoppers, but

5 in terms of if they are all minor, there was some

6 significant information that was not provided.

7 MR. MARKS: Well, how could you say they

8 are not show stoppers if they address the very basic

9 critical issue of barriers to radiation, and what

10 constitutes the barriers, and the relationship between

11 the barriers.

12 This is fundamental to the suitability of

13 the site.

14 MR. MCCARTIN: They have to show that

15 there are multiple barriers, that is correct. The

16 Department is saying that they have the information

17 that they believe they will be able to show in a

18 license application.

19 MR. MARKS: Well, they cannot yet present

20 that to you.

21 MR. MCCARTIN: Correct.

22 MR. MARKS: And yet at the same time they

23 have recommended a site to the President and the

24 Congress. To me that seems to be beyond belief and

25 responsibility for something as serious as nuclear

1 waste.

2 On the same vain, I think it is

3 appropriate to go back to Janet Kotra. You stated

4 that in response to a question from Adrian in which

5 she quoted that the current proposal of the Department

6 may include 400 or more cooling ponds sitting out in

7 the open at Yucca Mountain.

8 And you observed that this was not part of

9 the basic initial proposal made by the DOE, and that

10 therefore they might not be in compliance with their

11 own -- with the requirements.

12 DR. KOTRA: Well, let me clarify what I

13 was saying.

14 MR. MARKS: I would appreciate that.

15 DR. KOTRA: (Off microphone) The Nuclear

16 Waste Policy Act of 1982, as amended in 1987,

17 currently addresses the siting of a nuclear fuel

18 storage facility while there is a total decision made

19 with regard to the repository. It would have to be

20 determined if some of these alternate designs being

21 considered, including the ones that Adrian mentioned,

22 whether this would constitute monitored surface

23 storage

24 As Tim indicated, the Department of Energy

25 has a great deal of flexibility to provide the design

1 to us. We do not design the repository for them.
2 They come to us with a design, and we have to evaluate
3 that according to criteria as Janet Schlueter
4 indicated.
5 At that time, a decision would be made,
6 and I would assume that the Department of Energy would
7 not propose a design that is currently proscribed or
8 prohibited by law.
9 I want to just go back to a point that you
10 made just before coming back to me, and that is that
11 you have to remember what the purpose of the site
12 recommendation is.
13 If other conditions are present, and the
14 President's recommendation to Congress, if allowed to
15 go forward by the decision that is currently under
16 consideration by the Senate, would only allow the
17 Department to come forward to the Nuclear Regulatory
18 Commission with a license application.
19 It is the licensing decision of the NRC
20 where safety decisions are made, and where all of this
21 information has to be brought forward. We are here
22 tonight to lay out our game plan if you will and
23 seeking your comment on how we would evaluate that
24 application, and determine if all the necessary
25 information is in place.

1 Based upon the site characterization
2 activities at this time, the Department feels
3 confident that it will be able to come forward to the
4 Commission with an application.
5 But they can't -- it is not reasonable to
6 expect them to have written a license application
7 before they got permission to write the application.
8 That is what the recommendation, if allowed to go
9 forward, would permit DOE to do.
10 MR. MARKS: I have another question.
11 MR. CAMERON: Well, I do want to give
12 other people the opportunity and we will come back to
13 you. Dennis.
14 MR. BECHTEL: Let me see if I can frame
15 this question correctly, but I have always been
16 intrigued by this term, integrated repository
17 performance, and made up of engineering elements and
18 natural systems.
19 I guess where I am looking at the kind of
20 big picture is how you actually salute and march on
21 for DOE to go ahead and construct. How do you take
22 all these individual elements, and prioritize them,
23 and weigh them, and not get to a point where perhaps
24 if you will have a real bad element that is not going
25 to work, and you have all these better elements that

1 have kind of mastered that element?

2 I mean, how are you going to take all

3 together all these pieces, and put them together, and

4 not perhaps miss something dramatic? I think we did

5 talk yesterday about the site guidelines, and where

6 the old guidelines and individual pieces come

7 together.

8 And if the sub-surface or saturation zone

9 isn't going to work, well, that is a flag that the

10 site isn't any good. And now that it is integrated,

11 it is a little unclear in my mind how these bits and

12 pieces are going to fit together, and you really don't

13 miss something, and how you weigh that and prioritize

14 it.

15 MR. MCCARTIN: Well, in terms of weight,

16 I might have to ask you a question of what exactly do

17 you mean by weight? Now, the elements --

18 MR. BECHTEL: How do you prioritize

19 pieces.

20 MR. MCCARTIN: Well, in terms of the

21 elements, I assume or what I understand is the

22 performance assessment includes this scientific model

23 of the site that starts with the surface rocks and the

24 repository. It is an integrated model, that's

25 correct.

1 And the first way I would say are we sure
2 that they have -- that the department has all the
3 pieces, and I think it starts with the old standard
4 review plan, where up front the first thing we ask is
5 to describe the barriers of the repository.
6 What are those elements that are causing
7 the repository to be safe, and that will be the
8 retention of the rocks above the repository that limit
9 the amount of water that comes in, and the waste
10 package, the drip shield, the saturated film below the
11 repository.
12 You will have all those pieces that make
13 up the Yucca Mountain region, and those barriers, what
14 we are asking for is to tell us the capabilities of
15 those barriers, and that's how in terms of
16 prioritization where do you -- where is the largest
17 amount of performance, the greatest safety factor
18 coming in.
19 And that's why in terms of the
20 capabilities of the barriers, we ask for -- the way
21 that it is going to work, and the way it is going to
22 be safe, is that it is either going to slow down the
23 movement of water, or it is going to slow down the
24 movement of waste.
25 The most likely way that waste will

1 eventually or could eventually get to humans would be
2 through this water pathway. So if we are looking at
3 that kind of description, we would look at those
4 barriers, also looking at what could go wrong, and
5 what are the things to look at that could go wrong
6 with those barriers. And it is a complex problem.
7 MR. MARKS: But if the barriers would work
8 --
9 MR. CAMERON: Dennis, we need to get this
10 on the transcript. We have a question here and we
11 have a question here, and we need to just get these
12 two real short presentations on security and adequacy
13 of monitoring on, and then open it up to make sure
14 that we get these parking lot issues taken care of.
15 We have done a couple of them, but then to
16 open it up to others. The Yucca Mountain Review Plan
17 doesn't deal with Transportation, but we know that
18 that is an issue, and we know that there are some
19 questions on transportation. So let's go to this
20 young man right here.
21 MR. NAMANNY: My name is Wilson Namanny,
22 and my question is in regards to what kind of
23 communication are the NRC and the test site having?
24 Do you see the tests that are going on -- the sub-
25 critical, and tests that are occurring on the ground?

1 How are they going to affect -- are you restricted on
2 the test site, or --
3 MR. MCCARTIN: Well, the program is
4 required to -- and Pat has talked a little about that,
5 but identifying any kind of restrictions that need to
6 be in place to ensure that the barriers of the
7 repository keep their function.
8 And nuclear testing, I guess if it ever
9 resumes, that there could be some aspects of that, but
10 they are required to identify the kinds of things that
11 need to be restricted in that areas.
12 MR. CAMERON: Do you have a follow-up on
13 that?
14 MR. NAMANNY: Well, there was like sub-
15 critical -- what was it -- critical nuclear testing
16 underground, and that they are trying to do more and
17 more of it. How are you working with that situation?
18 MR. CAMERON: Well, the Department is
19 required to identify anything that could disrupt the
20 barriers.
21 MR. NAMANNY: Are you guys going out of
22 your way to deal with it, or --
23 MR. MCCARTIN: Are we going to do what?
24 MR. NAMANNY: Are you going out of your
25 way to work with that?

1 MR. MCCARTIN: Well, we have to wait for
2 them to submit a license application. However, given
3 that a license application is submitted, would we look
4 at what they have identified in the activities, and
5 what is going on in the area? Yes.
6 MR. CAMERON: And I think that part of the
7 question is, is how do you ensure that any tests that
8 DOE is doing on one side of the house doesn't perhaps
9 harm the integrity of a future repository.
10 And I think that is what you are trying to get at.
11 MR. NAMANNY: Yes.
12 MR. MCCARTIN: It would need to be
13 considered, and the requirements for land use, and
14 restrictions of activities in the area, and that could
15 include any activities at the test site.
16 MR. CAMERON: Okay. We may come back and
17 explore that, because I think I know where you are
18 coming from on that one. I will give you a final on
19 this one, and then we will get these two others on,
20 and then open it up.
21 MS. TILGES: Just to do a little
22 clarifying on what he said, and this leads me to
23 another question that I had not thought of before.
24 DOE is not required to take cumulative effects from
25 nuclear testing, such as the radiation that is out

1 there already, into consideration for Yucca Mountain.
2 Is the NRC required to do that?
3 MR. MCCARTIN: Well, cumulative effects in
4 the region would be considered in the EIS. It is not
5 part of licensing for a particular facility. However
6 --
7 MS. TILGES: If it is not in the EIS, they
8 are not going to consider it at all.
9 MR. MCCARTIN: Well, in terms of the
10 regulation, the limit that the NRC specified are 15
11 millirems. The reason that it is 15 millirems, and
12 not a hundred millirems, which is actually the public
13 dose limit, is that you are accounting for multiple --
14 or the potential for multiple sources.
15 So the fact that for Yucca Mountain itself
16 that it is far below that public dose limit, the
17 overall dose limit.
18 MR. CAMERON: Perhaps, Kalynda, you should
19 give an example of what you mean by cumulative
20 effects, because people have different -- you know,
21 there would be many different types of cumulative
22 effects.
23 MS. TILGES: Oh, I guess -- let's say the
24 millions of curies of radiation that is already in the
25 ground after 328 nuclear blasts on Western Piute Mesa,

1 and let's say it travels down under Yucca Mountain.

2 The DOE is not planning on taking that

3 into consideration in its presentation or its -- well,

4 I am losing a word here, into its effects and how it

5 will affect the repository. They are treating it like

6 two separate issues, like they don't even belong

7 together.

8 And I want to know if the NRC in this

9 safety review is going to require them to take those

10 cumulative effects and doses into consideration.

11 MR. MCCARTIN: Well, the EPA standards

12 specifically apply for releases from the Yucca

13 Mountain facility.

14 MS. TILGES: In other words, no.

15 MR. MCCARTIN: No.

16 MS. TILGES: Thank you. And the comment

17 that I had before this gentleman's one prompted that,

18 is on multiple barriers, slide 44, and when you were

19 answering Commissioner Herrera's question.

20 I am a little bit confused. I thought I

21 heard you make the statement that if no waste leaves

22 the packages, the mountain doesn't do anything, or the

23 mountain isn't required to do anything.

24 However, over on slide 50, you talk about

25 the waste effects on rock and water, and indeed they

1 are doing heat tests on the mountain right now to find
2 out what the effects of the heat of the packages will
3 have on the mountain. So if that is what you actually
4 said, that wasn't completely correct.
5 MR. MCCARTIN: Well --
6 MS. TILGES: It was confusing.
7 MR. MCCARTIN: Well, okay, it might have
8 been confusing. What I was attempting to say was that
9 if no releases occur from the waste package, one might
10 say that the geology is nothing doing, per se. It was
11 never -- let me finish.
12 It didn't contribute anything to safety.
13 It didn't have to do anything. And I liken that to if
14 there isn't a fire here, that fire system is doing
15 nothing. That smoke detector is doing nothing.
16 But the capability is there, and the
17 geology still has its capability to retard, slow down,
18 the movement of the waste. The fact that it is not
19 there, that capability is still there. Just like with
20 those sprinkler systems, the capability happens there,
21 and that is what I was referring to.
22 And I was trying to explain that is why
23 our regulations look to the capability. The
24 capability will be there regardless of whether the
25 waste package is leaking or not.

1 MS. TILGES: I think that is a premature
2 statement. Just really quickly, one last thing on
3 Slide Number 49, where you talked about safety reviews
4 and you consider scientific information.
5 And I was curious where you are planning
6 on getting your scientific information? I hope to god
7 it is not the DOE.
8 MR. MCCARTIN: Well, the DOE, as the
9 applicant, is required to support their case, and we
10 look at the evidence that the DOE has put forward.
11 The NRC does not make a safety case for the Department
12 of Energy. It relies on the Department of Energy.
13 We review their safety case, and we deny
14 their license if we don't like the information they
15 have. But we are not the developer of the repository.
16 That is an independent role that Janet talked about.
17 We are not the developer of the repository.
18 We are determining whether it is safe, and
19 it is based on what DOE has presented.
20 MR. CAMERON: Okay. Thank you very much,
21 Tim. We are going to go real quickly to get some
22 information out on security, and on monitoring, and
23 performance confirmation issues.
24 And then I would go out to you to see if
25 you have any specific questions on that, and then

1 address some of these other issues that you wanted to
2 hear about. So we are starting with Jeff Ciocco, who
3 is going to give us a capsule on security.
4 MR. CIOCCO: Thank you. My name is Jeff
5 Ciocco and I am going to talk about security from
6 theft and sabotage. These are two very important
7 programs in Sections 3.3 and 3.4 of the Yucca Mountain
8 Review Plan; the physical protection program, and the
9 material control and accounting programs.
10 The first section is Section 3.3, the
11 physical protection program, and the regulations and
12 the review plan lays out a plan that establishes the
13 physical protection goals, and performance objectives.
14 And it lays out the capabilities and what
15 the system must be able to do, and it lays out
16 specific elements that must be included in the
17 physical protection plan and would be submitted to the
18 NRC for approval.
19 The performance objectives. That the DOE
20 must establish and maintain a physical protection
21 system to assure that the waste operations at the site
22 would not be harmful to the national security or
23 defense, and would not pose an unreasonable risk to
24 public health and safety.
25 The capabilities of the system is laid out

1 in the regulations and the review plan establish that
2 the waste must be stored in a protected area, and an
3 area enclosed by physical barriers, and with specific
4 access controls, and you can only allow authorized
5 access.
6 The system must be able to detect and
7 assess unauthorized access, and it must be able to
8 provide accounting communication with a response team.
9 The main elements of the physical
10 protection system is that there is a security
11 organization, physical barriers that would channel
12 people, vehicles, materials, into the protected area.
13 There must be entry controls to verify and
14 identify all people, all materials, and there must be
15 reporting of safeguards back to the NRC, and there
16 must be a response plan. This is called the safeguard
17 contingency plans.
18 This must be submitted in addition to the
19 physical protection plan, and these are plans for the
20 what-if's. What is it that could happen at the site,
21 and there must be very detailed response plans.
22 And finally we heard quite a few people
23 explain already that since the September 11th
24 terrorist attacks, the Nuclear Regulatory Commission
25 has done a top to bottom review of physical

1 protection.

2 Next is the material control and

3 accounting. Its objective is to protect against

4 attacks, and respond to theft or loss, especially to

5 fuel and high level waste. It establishes the basis

6 for identifying, controlling, and accounting for all

7 on-site nuclear material movements.

8 The main elements are first the material

9 balance must account for all the materials on-site

10 that DOE would be authorized to possess, and provide

11 a physical inventory of the nuclear materials.

12 And it provides for specific record-

13 keeping requirements, such as received, inventoried,

14 disposal, transfer, and there is also controls for the

15 material transfers.

16 And in conclusion, these are the two plans

17 that DOE must provide NRC a high level of confidence

18 that the site would be safe and protected against

19 radiological sabotage, i.e., attacks, and that they

20 would prevent theft or diversion, especially of fuel

21 and high level waste.

22 MR. CAMERON: Okay. Thanks, Jeff.

23 Another real short presentation on performance

24 confirmation, and we will then go to questions on

25 that.

1 MR. MACKIN: I plan to discuss that if the
2 NRC were to grant a license to DOE to construct and
3 operate a repository, it would have to demonstrate how
4 it is going to show that what it said was safe
5 continues to be safe, and there are three parts or
6 programs that do that.
7 One would have to be a performance
8 confirmation program, which Irene addressed earlier,
9 and secondly, there would have to be some way to
10 address the kinds of things that Tim discussed that
11 might crop up unexpectedly.
12 And third would be how can we have some
13 confidence that the scientific information that DOE is
14 using is reliable. First, I want to talk a little bit
15 about performance confirmation and what it is.
16 It is a test, evaluations, measurements,
17 experiments, that DOE is required by the regulations
18 to conduct up until a repository would be closed to
19 show that things are performing the way its license
20 application said it would.
21 That the rock remains strong; that the
22 structures are operating or the barriers are
23 performing as they said they would. We have it for a
24 couple of reasons.
25 One is because the performance assessment

1 that Tim talked about has to be updated, and the way
2 that you update that is from information you get from
3 the performance confirmation program.
4 And lastly, I had mentioned earlier that
5 the DOE has to have a plan that demonstrates the
6 capability to retrieve waste, and the way that you may
7 find out that something is going wrong that requires
8 that is through a performance confirmation program.
9 It covers a lot of things. It covers the
10 geologic barriers, the earth barriers, such as the
11 rock and soil properties. It also covers the design
12 testing of components important to safety.
13 Finally, it covers those waste packages
14 that may be a very important man-made barrier in a
15 repository. And lastly DOE must demonstrate that they
16 have got procedures in place to ensure that anything
17 they find in this area is reported to the interested
18 parties, the NRC and others.
19 I mentioned that there has got to be a way
20 to deal with something that could arise unexpectedly
21 during the operation of a repository. The DOE must
22 have a program that resolves such questions.
23 The first thing they would have to do is
24 have a way to identify and describe in terms that
25 could be understood by experts outside of DOE.

1 Secondly, they have to have a program in
2 place that would answer those questions. Then they
3 have to provide a schedule for that that would fit in
4 with what is actually going on at a repository, or
5 else the operations would have to be curtailed or
6 stopped.
7 Next, it might be necessary as I mentioned
8 earlier to curtail, modify, or stop what is going on
9 at a repository to accommodate these questions being
10 answered.
11 And finally, and must importantly, there
12 would have to be a demonstration that it would be safe
13 to continue with this question sitting out there. If
14 not, then the operation of the repository would have
15 to be stopped.
16 The last piece of monitoring is in a way
17 to develop confidence that DOE's scientific
18 information is reliable, and that is basically through
19 a quality assurance program that addresses everything
20 important to safety, and that covers all aspects from
21 how you report data to the field, to the way that
22 calculations are done, and the qualifications of the
23 scientists that do it.
24 And lastly, those people who would be
25 implementing this quality assurance program have to be

1 shown to be free to make hard calls without fear of
2 losing their jobs.
3 The three things that I just talked about
4 -- performance confirmation, how to resolve safety
5 questions, and how to ensure reliability of operation
6 -- would operate together to give confidence that what
7 the DOE said was going to happen would continue to be
8 safe throughout the period of the repository
9 operations. Thank you.
10 MR. CAMERON: Pat, thank you. Let's first
11 see if there are questions on either security or
12 performance confirmation, the last presentation. And
13 let's go right here.
14 MR. KAHN: Hi. My name is David Kahn, and
15 I am an attorney here, and I am a Democratic candidate
16 for the U.S. Congress as well. In regards to the
17 security issue, I have seen that the DOE proposed
18 transport routes for the waste to get to Yucca
19 Mountain from all of the population centers of the
20 United States, which is what is going to happen, that
21 some of the routes anticipate barging, putting the
22 waste on barges around the Los Angeles area, and
23 around the Miami area, and in some parts of the Great
24 Lakes, and I believe Wisconsin.
25 And I am wondering how can you secure

1 nuclear waste on barges when instead of having to
2 prevent the blowing up of trucks by terrorists, or
3 attacks on the casks themselves, you have to prevent
4 a barge from sinking in the oceans or in the Great
5 Lakes.
6 And I am wondering if that has been
7 addressed in the safety plans, because it is currently
8 in the DOE's routes for transport, and so I think it
9 is fair game for a task question.
10 MR. MACKIN: First let me say that the
11 physical protection program, which I presented, was
12 for the physical protection for the site, and I will
13 let Chet talk about the physical protection for the
14 transportation.
15 MR. POSLUSNY: Thanks for that question,
16 and that is a serious question, as any shipment of
17 spent nuclear fuel is a serious situation, especially
18 since 9/11. There are current regulations in place to
19 deal with the security of any shipment of spent
20 nuclear fuel.
21 They require escorts, and they require
22 pre-approval by the NRC. We would have to look at any
23 shipment plan, including one that would use a barge to
24 make sure that it is, number one, safe; and, number
25 two, protected from any risks.

1 We don't have that detail yet, or any
2 shipments planned that we know of right now.
3 MR. KAHN: I guess in line with that, and
4 rather than ask it later, is the NRC going to have
5 hearings on its role in the transportation of nuclear
6 waste, or is it simply going to defer it, number one,
7 or number two, rely on these 18 or 20 year old
8 regulations that we passed to have trucks go from one
9 facility to another from time to time, as opposed to
10 all the waste in the country focusing on one point,
11 which is what is happening now.
12 And I am just wondering is the NRC going
13 to have independent hearings, or include in its
14 hearings some way to address the issue of the
15 transportation, or is it merely going to say that DOE
16 is in charge of transportation, or the DOT.
17 Because from what I am reading from a
18 letter that your Chairman sent to Senator Durbin on
19 May 10th, a copy of which I have reviewed, the NRC
20 does have the role of signing off on the transport,
21 and that if there is a problem en route, the Governors
22 of the States, or in our case, Nevada, are primarily
23 responsible, and the NRC does not have to respond to
24 that, unless and until the Governors of the States
25 say, hey, come help us.

1 Otherwise, the NRC just gathers
2 information and watches the State deal with whatever
3 calamity has occurred.
4 MR. CAMERON: I think it is really
5 important that people understand how we deal with
6 those issues, and whether the framework is including
7 anything that you know what is going on now that might
8 affect that, and that the public might comment on. I
9 don't know.
10 MR. POSLUSNY: Let me speak to the first
11 part of the question. When an application comes in,
12 and it is accepted, and we do a review, there will be
13 an opportunity for a full and public hearing that the
14 NRC does in its normal operations and processes.
15 If contentions are raised at that point in
16 time and accepted by the Board at the open hearing,
17 there is a potential for the issue to be raised. And
18 we don't know what will be raised, but it is a
19 possibility.
20 Now, let's talk a little bit about spent
21 nuclear fuel and accidents. There is an
22 infrastructure in the shipment of the fuel. Normally,
23 for example, when they ship spent nuclear fuel from
24 point A to point B, they are responsible for the
25 safety and security of that shipment per the

1 regulations.

2 They also must coordinate with State,

3 local, and also Native American Governments, through

4 which the route would be used, well in advance of the

5 shipment.

6 They do that coordination, number one, for

7 security reasons; and, number two, for emergency

8 response capability reasons. Emergency response

9 capability for shipments to Yucca Mountain are

10 further, let's say, funded or will be funded in the

11 future by DOE resources.

12 And that is another capability that has to

13 be established, and it is not established yet. As far

14 as the first responders to any accident, normally the

15 local police, followed by the State, and in the case

16 of a very severe accident, the Department of

17 Transportation actually gets involved, as well as

18 FEMA.

19 MR. CAMERON: I guess the answer to the

20 question about whether there will be a separate

21 hearing on transportation, the answer to that is no.

22 MR. KAHN: No. All right.

23 MR. CAMERON: All right. Let's go to

24 Dennis, and we will go back over to here. Dennis.

25 MR. BECHTEL: I have a quality control

1 question with regard to the canisters for transfer of
2 waste. As I understand it, you certify the design,
3 right?
4 MR. POSLUSNY: The NRC reviews the design,
5 or anybody that uses that design must have an NRC
6 approved quality assurance program in place.
7 MR. BECHTEL: Okay. It was indicated
8 earlier that you are involved in full-scale testing
9 now?
10 MR. POSLUSNY: The NRC has a package
11 performance study in place that will include full-
12 scale testing, yes.
13 MR. BECHTEL: (Off microphone) And in
14 doing that do you -- and I am not sure how far you go
15 back, but you actually review, say, through quality
16 control how the cask is manufactured, or is it just
17 the -- well, the reason that I am asking the question,
18 is we had an incident about a year-and-a-half ago when
19 (inaudible) and slightly radioactive, but not really
20 dangerous.
21 But apparently it was the design of the
22 container that somebody reviewed, and the design was
23 fine, but somebody reviewed or read the blueprint
24 wrong and constructed it wrong, and there was a stress
25 failure and a leak.

1 (Inaudible) and I built the canister, and
2 that part of quality control, and I was just
3 interested in how you do it.
4 MR. POSLUSNY: Let me just tell you in
5 general. Number One, we do approve their quality
6 assurance program, and it must be in place before
7 anybody ships. But in addition through inspections,
8 number one, and design levels, and fabrication levels,
9 and we look at their programs, and we have a staff at
10 the headquarters that actually do that type of
11 inspection.
12 MR. BECHTEL: And is that monitored
13 periodically?
14 MR. POSLUSNY: Yes, both for storage
15 casks, as sell as transportation casks. As far as the
16 tests, the full-scale test, I am not sure how they are
17 going to approach that, but those details are being
18 discussed and there is a meeting in August and please
19 come to that meeting. It will be here.
20 MR. CAMERON: Okay. Let's go back here.
21 MR. NAMANNY: (Off microphone) I have a
22 question about notification of Native Americans on
23 shipment routes.
24 MR. POSLUSNY: Yes. Our regulations
25 require transportation regulations that if a shipment

1 route goes through a Native American land, that they
2 must be involved and notified in advance, and the
3 Department processes that.
4 MR. NAMANNY: Well, the whole issue on the
5 Native American Land on Yucca Mountain is that it is
6 Shoshone land, and you are not really working with
7 them, and so (inaudible) and you are not really
8 working with them.
9 If you are going to say that you are going
10 to be working with Native Americans, at least say
11 which tribe and be more clear.
12 MR. POSLUSNY: Yes, thank you for that
13 comment, and the issue of the land, the native land in
14 the Yucca Mountain site is a separate one from this
15 discussion.
16 MR. NAMANNY: Yes, you're right.
17 MR. CAMERON: Thank you for that reminder.
18 MR. KAHN: I have one other question, and
19 it is a pretty simple question, and somebody here
20 hopefully can answer it, and the question is in all of
21 your modeling for the future of Yucca Mountain, as I
22 understand it the modeling goes for thousands of
23 years. What have you decided is the expected failure
24 rate?
25 In other words, does all of your modeling

1 anticipate that there will never be a problem at the
2 site given all your safeguards, or have the scientists
3 and engineers that have come up with these designs and
4 plans determined that there is some percentage, or
5 some risk of fault in these casks and with this
6 material?
7 And if so, can you tell us what it is here
8 in this public forum?
9 MR. CAMERON: Tim, you are going to handle
10 that, right?
11 MR. MCCARTIN: Yes. In terms of the model
12 that the NRC has, we have our own independent
13 capability to evaluate that. We have in the analyses
14 assumed what is called a certain number of juvenile
15 failures; failures of the waste package that, and they
16 are leaking from day one because of manufacturing
17 defects, or something just wasn't done right.
18 MR. KAHN: You are talking about the
19 casks?
20 MR. MCCARTIN: Yes. And there was a
21 fairly simple analysis of looking at general
22 manufacturing defects for large metal containers, et
23 cetera, and we came up with a number that was -- well,
24 it is around 35 to 50 containers from day one in our
25 analysis.

1 MR. KAHN: Is that (inaudible)?

2 MR. MCCARTIN: Yes.

3 MR. CAMERON: We really should get this on

4 the transcript. Tim.

5 MR. MCCARTIN: And in addition to that,

6 now there is the evolution over time, and as time

7 progresses containers are estimated to corrode and

8 leak with time, and eventually in the NRC models, I

9 will say that there has been a lot of variation in

10 information and design over time.

11 But there is containers that will start to

12 fail, I'll say, from around 5 to 10,000 years, and

13 obviously all would fail around 50,000 years. DOE has

14 different numbers, and the application is on what DOE

15 does, but we have done -- but those are what our

16 analyses are, and in the DOE analyses, I think they

17 have far fewer right now juvenile failures; one or

18 two, I believe, in approximating what they have.

19 I think the last estimates that I remember

20 seeing from them -- and once again, analyses have

21 changed over time as more information has come in, but

22 I think their packages begin to corrode around -- I'll

23 say 8,000 years, and they go out as far as many

24 200,000 years.

25 MR. CAMERON: Okay. Thank you, Tim. I

1 know that Kalynda has a question for either Pat or
2 Jeff.
3 MS. TILGES: Thank you. DOE has changed
4 their site guidelines so much at this point that Under
5 Secretary Robert Cardtells us that there is no longer
6 a definition of show stopper. So what I am wondering
7 is as the NRC is the last line of public protection,
8 is your definition of safe simply what the legal
9 requirements are, or what the public wants?
10 MR. CAMERON: I think that Janet would
11 probably be the most appropriate one to field that
12 one. Do you get the gist of what Kalynda is asking?
13 MS. SCHLUETER: Perhaps you could repeat
14 it?
15 MR. CAMERON: I think that this is -- you
16 are wondering if there is sort of a moving target
17 here? Go ahead.
18 MS. TILGES: Luckily I wrote it down.
19 I said that the DOE has changed their site guidelines
20 so much that Under Secretary Robert Cardtells us that
21 there is no longer a definition of a show stopper.
22 So with that in mind, the NRC has the last
23 line of public protection, in remembering what the
24 person in Caliente (phonetic) said, is the NRC's
25 definition of safe simply whatever the legal

1 requirements are?

2 Or is the NRC willing to step up to its

3 public role and consider safe what the public wants?

4 MS. SCHLUETER: Well, standards that are

5 in place as you know are ones which are consistent

6 with the Environmental Protection Agency standards for

7 both the individual and also the ground water.

8 So there is a system in place in which the

9 staff will conduct a thorough evaluation of the

10 application to ensure that those standards through a

11 total system performance evaluation have been met.

12 So as you have heard from the presenters

13 today, it is a complex system, and we are far, far

14 away from that decision point. We first would receive

15 that license application and conduct a very detailed

16 technical review before we could make that decision as

17 to whether or not the repository as proposed by the

18 Energy Department would be safe.

19 MR. CAMERON: Okay. I know that there may

20 be others. Herb.

21 MR. MARKS: Before I came down tonight I

22 heard Dan Rather on the CBS News, and the President is

23 on a trip to Europe, and he is meeting with the Soviet

24 Union, the old Soviet Union, Russia.

25 The commentary was that we are entering a

1 period that is more dangerous from the view of a
2 nuclear event than the entire Cold War. That is mind-
3 boggling and unnerving. There was a comment that the
4 greatest single threat in the world today of a nuclear
5 proliferation has to do with the Soviet Union helping
6 Iran with the building of a nuclear power plant.
7 Additionally, there were a lot of
8 intrusion events in the Soviet Union, and there was no
9 trouble in gaining access to spent nuclear fuel at
10 abandoned plants.
11 Now, what is the implication for us? We
12 are seiged and barraged as I commented earlier with
13 regard to the terrorist threat, and it has presented
14 a new environment for Yucca Mountain.
15 The race to build Yucca Mountain has been
16 overrun and overcome by world terrorism. The plan is
17 to ship nuclear wastes. It is my understanding that
18 we would be shipping approximately 2,000 metric tons
19 per year, and at the same time the industry would be
20 replacing that 2,000 metric tons by new waste.
21 So that in effect there is no net
22 diminution to the existing plans of nuclear waste.
23 The recommendation is based upon getting rid of the
24 waste so as to reduce the nuclear threat at existing
25 terrorism, and at existing plant sites.

1 That does not make any sense whatsoever.
2 This meeting is unsettling in a number of respects.
3 The point has been made that there is no precedent
4 whatsoever for the work that you are doing.
5 With regard to the legislation that
6 Kalynda alluded to, there is a 90 day prohibition in
7 the regulations with regard to the submission of the
8 application, and four of your representatives
9 attempted to answer, and a final response was, yes,
10 there is a 90 day deadline, and there is that
11 prohibition.
12 But parsing words on the other hand, the
13 NRC can still accept an application. If that is not
14 parsing words, I don't know what is. With regard to
15 the site itself, Commissioner Herrera specified the
16 issue of what percentage of the barrier is man-made,
17 and what percentage is geologic.
18 With regard to the original recommendation
19 of the site, Yucca Mountain was chosen because it is
20 a geologic site. It was supposed to isolate and
21 contain radiation. That determination failed in terms
22 of studies made by the DOE sometime in the mid-1990s.
23 What did the DOE do with that failure?
24 Did it come back to the Congress and say that the site
25 doesn't work? No. It circumvented the standard and

1 went to what has been declared here to be a 98 percent
2 man-made barrier, instead of a geologic barrier.
3 What is the legitimacy of Yucca Mountain
4 under those conditions? Secondly, with regard to the
5 site, Adrian has stated that the proposal now from the
6 DOE includes 400 cooling ponds out in the open.
7 Supposedly they are going to be within 5
8 miles of the major transportation route. Janet Kotra
9 stated that this new format, this new model, may not
10 be in conformance with the law.
11 This whole discussion is most unnerving,
12 and most unsettling. The issues with regard to safety
13 are a joke. You are talking about models that have to
14 do with other industries, with other nuclear power
15 plants.
16 We are now dealing with a repository that
17 is unprecedented, and that has never been constructed
18 before, and that is surrounded and confused with all
19 kinds of uncertainties.
20 You are asking the 1-1/2 million people in
21 Southern Nevada to endure that burden, and to shift
22 risks that make no sense from the East, and when you
23 could have hardened cask storage. None of this makes
24 any sense. It is absurd. There is nothing reassuring
25 about this meeting at all.

1 MR. CAMERON: All right. Let's go to --
2 and we have time for some more questions and comment,
3 but we do need to allow Dennis Daniels -- and let me
4 thank Dennis and also thank Clark County for the
5 hospitality here for using this room.
6 And I know that Dennis has to close up at
7 some point, and so let's get some more comment, but I
8 think we are going to aim for closing down at 10
9 after, because it is going to take a while for us to
10 clear out of here. And, Andy, we will get to you.
11 Irene.
12 MS. NAVIS: Just a couple of quick
13 comments. I think one of the reasons that you are
14 seeing so much frustration is that we in Southern
15 Nevada see really clear links between the
16 transportation and the repository side, and in
17 particular the lack of a final repository design.
18 That link is not always clearly recognized
19 or admitted to by the DOE, and so that frustrates us
20 that are dealing with that every day, and trying to
21 answer those questions for our public.
22 I think that one of the things that can be
23 done in this final review plan is that to the extent
24 that the NRC has responsibility over transportation,
25 security, and safety, if you could put something in

1 the review plan that either makes clear what that role
2 and that responsibility, and the proposed regulatory
3 actions are, that you would impose on the DOE, and
4 could we get you to put it in the review plan.
5 Or include Part 63 as an appendix or
6 something so that everybody could clearly see why
7 transportation isn't appropriate, or it belongs to
8 another rule, and tell us what that rule is.
9 I don't think that is real clear in here
10 at all, and that might alleviate some of this
11 confusion and concern that people have over the
12 transportation issue, because it looks like you just
13 flat omitted it.
14 So just say something about
15 transportation, laying out why you are not going to go
16 into it here, but you are going to go into it
17 somewhere else here, and that might help those of us
18 here in this room who have been complaining about it
19 all night, and also the rest of the public that are
20 going to take until mid-June to review this.
21 MR. CAMERON: Thank you for your comments,
22 Irene. Let's go over here to Andy.
23 MR. HERESZ: My name is Andy Heresz, and
24 I live in the State of Nevada, and live in the County
25 and in Las Vegas, and I am a registered and active

1 voter, and also a taxpayer.

2 I am also a United States Air Force

3 Veteran, and I am a really very angry U.S. Citizen.

4 And I think the reason for my anger is that I don't

5 want to see any nuclear garbage in our Yucca Mountain,

6 meaning Nevada's Yucca Mountain.

7 I live here, and it is my home, and it is

8 where I want to be, and it is where I want to stay.

9 I am not a visitor, and I am not here for 2 or 3 days,

10 and I am heading back East. This is it for me.

11 Now, it might be hard for you to

12 understand that, and that this is not just a technical

13 formality or procedure that I am going through. This

14 affects my life, and I want it to stay the way that it

15 is.

16 I am vehemently opposed to the NRC

17 licensing Yucca Mountain as a nuclear garbage dump.

18 I don't call it a repository, and I don't call it a

19 storage facility. It is a garbage dump. It is an

20 insane idea to dump thousands of tons of man's most

21 deadly waste on our land and is utter stupidity.

22 Intelligent and concerned adults

23 understand a nuclear garbage dump is not, is not

24 environmentally safe, nor a long lasting answer to the

25 problem.

1 Technology holds the answer, and not
2 dumping your nuclear garbage in our State of Nevada.
3 Sound science. That is the favorite phrase that we
4 have been hearing from the Republican administration
5 in Washington, D.C.
6 What in the heck does sound science mean?
7 You hear it and everybody talks about it. How should
8 we understand it? How does it relate to nuclear waste
9 in the Yucca Mountain? Well, there is one simple
10 convenient explanation.
11 It is a smoke screen. It is a smoke
12 screen, meaning screw Nevada. That's all it means,
13 and nothing else. An independent panel of scientists
14 -- and I emphasize independent. They have no
15 allegiance to either the NRC or DOE, and it is called
16 the Nuclear Waste Technical Review Board.
17 And they were charged by the United States
18 Congress with assessing DOE's suitability study of
19 Yucca Mountain, and they issued their report, and they
20 said that, quote, the scientific benita (phonetic)
21 from the work in Yucca Mountain has been, quote, weak
22 to moderate.
23 They also listed almost 300 questions,
24 which the DOE has failed to answer so far. Now, I am
25 not a scientist, but I don't think any of you people

1 would say that this is sound science.

2 It doesn't sound like it to me. It is

3 certainly not the kind of endorsement I would expect

4 a project that for the next 10,000 years is supposed

5 to safely contain 77,000 tons of high energy nuclear

6 garbage. There is no reason to have any nuclear

7 garbage in our Yucca Mountain.

8 MR. CAMERON: Thank you, Andy. Let's go

9 to Kalynda and then we will see if there is anyone

10 else, and Dennis.

11 MS. TILGES: Yes, I have some process

12 questions about this whole thing. If you sign up for

13 a transcript tonight, will you get all three days of

14 transcripts?

15 MS. SCHLUETER: We can certainly make that

16 available.

17 MS. TILGES: So do we have to specially

18 request them? People who have not been to the other

19 two meetings, would they have to specially request the

20 past two days of meetings as well as tonight, or their

21 signature for a transcript tonight, would that be

22 enough to get them all three copies of the transcript?

23 MS. SCHLUETER: We can do whatever the

24 individual would prefer. We can send all three. That

25 is not a problem.

1 MS. TILGES: For those who were not at the
2 other two meetings, I would suggest that you do that.
3 There is a lot of very interesting information.
4 Also, something that we had talked about
5 earlier on, Janet, on the first night. Most people in
6 this room have either not seen or heard of the
7 document until tonight, including some of us who were
8 on your distribution list or should have been.
9 So for an issue this important, Citizen
10 Alert is formally requesting a 90 day extension on the
11 comment period for this. I mean, you've got until
12 2004, and there is no big rush.
13 And we would like more comment meetings
14 with adequate time for all questions and comments,
15 because I don't believe you can hold a public comment
16 period and not have time or not give people time.
17 We have had meetings, and meetings, and
18 meetings in the past, and it has happened every single
19 time, and that you never schedule enough time for
20 everyone to get their questions and comments taken
21 care of.
22 The last part is you all say that you are
23 an independent and unbiased agency. But yet, you, the
24 NRC, did the environmental impact statement for the
25 PFS Skull Valley site, and acted as a very ferocious

1 advocate for the site of that interim repository.

2 With that in mind, how can we trust you

3 with Yucca Mountain?

4 MR. CAMERON: Okay. Thank you, Kalynda,

5 and while the staff is thinking about it -- and I

6 don't know whether that was a rhetorical --

7 MS. TILGES: That last one was not a

8 rhetorical question. I would like an answer.

9 MR. CAMERON: Someone --

10 MS. SCHLUETER: Well, I think Chet was

11 ready to answer a portion about PFS.

12 MR. CAMERON: All right. That's great,

13 Chet.

14 MR. POSLUSNY: PFS was an independent

15 application sent to us to do an independent review,

16 and produced a safety evaluation report, which

17 approved the design. That was the first step, and the

18 second step was to go to hearing.

19 Part of the hearing was to identify and to

20 respond to the contentions. The hearing process

21 requires that all parties give their contentions, and

22 part of that was to explain how we made our finding.

23 It is a deep probing period, and we just

24 describe how and why we made our findings, and that

25 was my understanding. I was there.

1 MR. CAMERON: All right. Dennis Bechtel.

2 MR. BECHTEL: I have a process question.

3 There were a lot of good questions yesterday and

4 today, and probably in Pahrump. Will the NRC respond

5 to those questions?

6 MS. SCHLUETER: Well, let me make sure

7 that we are clear. I would say that questions have

8 been asked through all three sessions, and we have

9 done our best at that time to answer the questions.

10 If there are ones that individuals feel they would

11 like a further response on, we would be happy to do

12 that.

13 With regard to the comments, the comments

14 will be considered, and we will read the transcript to

15 glean those comments, and treat them equally with the

16 written comments, and as part of the finalization

17 process for this document, there would be some

18 documentation on the disposition of those comments,

19 and how they were resolved.

20 MR. CAMERON: And let me talk about the

21 parking lot. And unfortunately I don't think we are

22 going to be able to obviously exhaustively -- and I

23 don't want to forget that there is a question back

24 there. I don't want to forget you.

25 But we talked about consideration of long

1 term service aging, and we talked about natural
2 barriers, and I think that there are some things that
3 could be said about alternatives to a repository,
4 because I think that lies in the legal area.
5 It does not lie within the NRC's perview,
6 and I don't know if we will get to that, Adrian. But
7 I think we talked about site security, and
8 transportation security.
9 We have given an answer on the 90 day
10 thing. Herb mentioned his opinion of what our answer
11 was, and the only thing that I think we could say in
12 that regard is that we didn't say it was 90 days
13 prohibition. It is a 90 day requirement on the
14 Department of Energy to submit a license application
15 to the NRC.
16 It really doesn't have anything to do with
17 the NRC. It is a requirement on the Department of
18 Energy, and if someone wants to try to hold the
19 Department's feet to the fire so to speak on that,
20 then obviously you are welcome to do that.
21 But I think we are covered, except for
22 Adrian's alternative issue. I think that we have
23 covered the parking lot issues or the corral, or
24 whatever crazy name I have given it at the time.
25 Comments that have been made in questions

1 about the Yucca Mountain Review Plan, they are
2 required to be addressed by the staff in doing the
3 final report, and we are going to put this in.
4 I just want to say that you can call the
5 NRC staff, or e-mail them, if you have a question.
6 I want to introduce Bob Latta, and I don't know if we
7 have introduced Bob tonight. Bob is our on-site
8 representative here in Nevada. Pick up the phone and
9 call him if you have questions, if you have concerns.
10 MR. LATTA: I am just one member of the
11 team here. With me tonight also is Vivian Mehrhoff,
12 and we also have another on-site representative who is
13 going to be joining us in about a month, and his name
14 is Jack Parrott.
15 Yes, we are here, and we are available to
16 answer questions for you. I am not an infinite source
17 of information, but I can certainly field the
18 questions, and if I can answer them, I will, and if I
19 can't, I will find somebody who can.
20 MR. CAMERON: Thank you, Bob.
21 MR. NAMANNY: I have a question. What was
22 meant by you or the NRC and Skull Valley? What kind
23 of --
24 MS. TILGES: We couldn't hear the
25 question.

1 MR. CAMERON: All right. Let me restate
2 it, and I think Chet can give an answer. For people
3 who don't know how the NRC is involved in Skull
4 Valley, what is going on at Skull Valley that the NRC
5 is involved in. And Chet will give us an overview of
6 that.
7 MR. POSLUSNY: (Off microphone) Private
8 Fuel Storage is a company that is being sponsored by
9 a number of utilities to build an above-ground dry
10 storage facility, and that company is entering into a
11 lease with Skull Valley to rent property from them for
12 a period of 20 years for that facility.
13 And that application was received by the
14 NRC about 3 or so years ago, and we finished the
15 safety evaluation and the environmental impact
16 statement the past year, and now that decision is
17 currently being considered, and that will continue
18 through the June, I'm told, before we make a decision.
19 There is no time limit on that decision
20 period. So we will see what happens with that. Also,
21 there is one further thing that is in the parking lot
22 that I wanted to get to real quickly.
23 MR. CAMERON: All right.
24 MR. POSLUSNY: Commissioner Herrera asked
25 a question about the comment on our security

1 requirements, and I just wanted to reflect on that a
2 little bit. We issued advisories to all of our
3 licensees, reactor licensees, and those who ship
4 nuclear fuel, among others, right after 9/11.
5 Those have been in place since then, and
6 we have also issued orders that either impose them
7 legally on those licensees, or modify those to add
8 additional requirements in the security area.
9 If someone from Congress has commented on
10 those, I am sure that we will hear about that comment,
11 and we will respond, and either justify or perhaps
12 change those.
13 MR. CAMERON: Okay. Thank you. We really
14 have to close now, and it is awfully hard in 3 hours
15 or 4 hours, or 5 hours, to get all of your questions
16 and comments, but we appreciate you coming tonight,
17 and listening, and talking to us.
18 There is an evaluation form on the
19 meeting, and if you care to give us your views, we try
20 to use this to improve our meetings. And thank you
21 again for being here.
22 (Whereupon, the meeting was concluded at
23 10:15 p.m.)