

Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

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Public Meeting

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 PUBLIC INFORMATION MEETING

5 + + + + +

6 YUCCA MOUNTAIN REVIEW PLAN

7 + + + + +

8 TUESDAY

9 MAY 21, 2002

10 + + + + +

11 PAHRUMP, NEVADA

12 + + + + +

13 The Public Meeting was called to order at
14 the Convention Hall, Mountain View Casino and Bowl,
15 1750 Pahrump Valley Boulevard, Pahrump Nevada, at 6:42
16 p.m., by F.X. "Chip" Cameron, Facilitator, presiding.

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

2 (6:42 p.m.)

3 MR. CAMERON: If everybody could take
4 their seat, we will get started with tonight's
5 meeting. Good evening, everybody. My name is Chip
6 Cameron, and I am the Special Counsel for Public
7 Liaison at the Nuclear Regulatory Commission.

8 But it is my pleasure to serve as your
9 facilitator tonight, and I would like to welcome all
10 of you here to the NRC's public meeting on the draft
11 revision to the Yucca Mountain Review Plan.

12 And I am going to try to assist all of you
13 in having a productive meeting tonight, and I would
14 just like to go over three items briefly before we get
15 started with the substance of our discussions tonight.

16 And one is objectives for the meeting.
17 Secondly, I would like to talk about format and ground
18 rules, and lastly, I would like to just quickly go
19 over the agenda with you so that you know what to
20 expect tonight.

21 In terms of objectives, we want to try to
22 make sure that we give you a clear understanding of
23 the NRC's responsibilities for evaluating any
24 potential license application that the Department of
25 Energy submits for a high level waste repository at

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1 Yucca Mountain.

2 And specifically we want to tell you
3 tonight about the Yucca Mountain review plan, and what
4 the purpose of that NRC review plan is, and how that
5 fits into the NRC's licensing responsibility.

6 So one goal we have tonight is to share
7 that information with you, and to try to share it
8 clearly. A second objective, and the most important
9 objective, is to listen to your concerns and your
10 comments about the issues related to this Yucca
11 Mountain Review Plan.

12 The Yucca Mountain Review Plan is a
13 document, and I know that people have varying opinions
14 about Yucca Mountain, but we are here to talk about
15 the Yucca Mountain Review Plan tonight, and there are
16 copies over here, and we will make sure that you get
17 one if you don't have one.

18 The ultimate goal of the NRC tonight is to
19 take your comments, and to use them to help them
20 finalize the Yucca Mountain Review Plan. We are
21 taking written comments, and asking for written
22 comments on this review plan, but we are here tonight
23 to talk with you in person about it.

24 And you may find some information that you
25 hear tonight either from the NRC or from someone else

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1 in the audience that may prompt you to want to prepare
2 a written comment, or it may assist you in preparing
3 a written comment.

4 But I do want to emphasize that any
5 comments that you give tonight carry the same weight
6 as a written comment. In terms of the format for
7 tonight's meeting, we have a series of brief NRC
8 presentations on various subjects, followed by a
9 discussion with all of you after each of those
10 presentations.

11 We are trying to balance the need to
12 provide you with information about the NRC's licensing
13 responsibilities, and about the Yucca Mountain Review
14 Plan, and trying to balance that with being able to
15 talk with you as much as possible, rather than just
16 talking at you.

17 So we are going to try and see if we can
18 maintain that balance, and in keeping with that, I
19 would just ask the NRC staff if they could just try to
20 be as concise as possible in their presentations, and
21 we can develop more detailed information as we talk to
22 people after those presentations.

23 In terms of ground rules, they are fairly
24 simple. If you have something to say or a question,
25 or a comment, just signal me and I will bring you this

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1 talking stick out, and please state your name and
2 affiliation, if appropriate.

3 We are taking a transcript here. Paul is
4 our stenographer tonight, and that transcript of the
5 meeting will be available to people, either a hard
6 copy or it will be on the NRC website.

7 I would ask that only one person speak at
8 a time so that we can not only get a clean transcript
9 so that Paul will know who is talking, but more
10 importantly so that we can give our full attention to
11 whoever has the floor at the moment.

12 I want to make sure that everyone has a
13 chance to talk tonight, and in keeping with that, I
14 would just ask you to try to be brief in your remarks.

15 I realize that that is difficult sometimes
16 with these complicated issues, but I would just ask
17 you to try to be brief so that we can hear from
18 everybody, and that we can get all this information
19 out to you.

20 And I will be going out to people and
21 giving people an opportunity who haven't spoken
22 before, before I go back to someone who has raised a
23 particular issue.

24 Not all of the comments that you bring up
25 may fit squarely under the topic that we are

1 discussing at the moment. So I am going to take those
2 topics that don't fit into the topic, and I am going
3 to put them up here, and put any comments or questions
4 of that type in the parking lot, and we will come back
5 to that before the evening is over and address those.

6 And another word about relevance. We know
7 that there are lots of issues and concerns about Yucca
8 Mountain, and various aspects of the NRC's
9 responsibilities.

10 We are here tonight to tell you about the
11 Yucca Mountain Review Plan because that is an
12 important NRC document that we are requesting comment
13 on.

14 And although we will try to provide you
15 with information and listen to other issues, we really
16 want to focus tonight's discussion on the Yucca
17 Mountain Review Plan.

18 In terms of an agenda, I believe that
19 everybody has a blue sheet of paper in their package
20 of materials that has the agenda for tonight's
21 meeting, and we are going to start off, and I will
22 introduce everybody now.

23 We are going to start off hearing from
24 Janet Schlueter, who is right over here. Janet is the
25 Branch Chief of the High-Level Waste Branch at the

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1 NRC, and that is in our Office of Nuclear Materials
2 Safety and Safeguards.

3 And Janet and her staff are the focal
4 point for the NRC's technical evaluation of high level
5 waste repository issues. And Janet is going to give
6 you a sort of broad view of what the NRC's
7 responsibilities are generally in regard to high level
8 waste and tell you a little bit about who we are.

9 We are next going to go to Mr. Jeff
10 Ciocco, who is right here, and Jeff is a geologist,
11 and an environmental engineer, and he is going to lead
12 us through how the NRC will go about evaluating the
13 license application, and start talking about the role
14 of the Yucca Mountain Review Plan and that evaluation.

15 He is a senior project manager for the
16 Yucca Mount Review Plan, and he is in Janet's -- he is
17 part of Janet's staff in the High Level Waste Branch.

18 Next we are going to go to Pat Mackin, who
19 is right here, and Pat is a Systems Engineer. He
20 works for an organization which we will tell you a
21 little bit more about, called the Center for Nuclear
22 Waste Regulatory Analyses.

23 And this is the Commission's primary
24 research contractor to assist us in evaluating
25 technical issues, and they are down in San Antonio,

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1 Texas, and they work pretty much exclusively for us on
2 these issues.

3 And Pat is going to talk about safety in
4 operations. In other words, how does the NRC or how
5 will the NRC assure that the safety of the public
6 during construction of a repository, if indeed there
7 is construction of a repository.

8 And that depends on two things. One, a
9 Department of Energy license application, but most
10 importantly the NRC or the Department of Energy has to
11 demonstrate that they meet the NRC regulations.
12 Otherwise, a license for the repository will not be
13 granted.

14 But if a construction authorization is
15 granted, Pat is going to tell how the NRC will assure
16 safety in those terms. We are then going to switch to
17 long term safety, and how will the NRC evaluate
18 whether a proposed repository will be safe over the
19 long run, and I am going to let Tim McCartin from the
20 NRC staff, who is right here, explain what the long
21 run is.

22 And Tim works at the Division of Waste
23 Management level. He is a special technical assistant
24 on performance assessment. He has worked in
25 performance assessment, high level waste issues, for

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1 over 20 years, and is a physicist by training.

2 We know that security is an important
3 issue and an important concern. We are going to go
4 back to Jeff Ciocco to tell us a little bit about
5 security concerns and considerations of a repository,
6 in terms of the theft of material or a sabotage.

7 And then we are going to finally go back
8 to Pat Mackin from the Center to talk about an
9 important issue, which is monitoring; and how will the
10 NRC keep tabs on how the repository is performing, and
11 issues like that.

12 After each of these, we are going to go on
13 to you to talk to you, and if anybody has any more
14 formal statement that they want to make as comment
15 that you don't want to submit in writing, or maybe you
16 do later on, we will try to make room for that at the
17 end of the meeting if you can't work that material
18 into the sessions after each individual topic.

19 And finally I just would thank all of you
20 for being here. The NRC obviously has a very serious
21 and important task in front of it, not only in terms
22 of licensing a repository, but in finalizing this very
23 important document, the Yucca Mountain Review Plan.

24 And we thank you for helping us to prepare
25 a good document here, and this is one public meeting,

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1 and we have been out in Nevada a lot, and it has been
2 a real pleasure to get to know everybody out here.

3 But one point is that I would just
4 encourage everybody to meet the NRC staff, and get
5 their E-mails and phone numbers, and if you have
6 questions or comments, talk to them and call them up,
7 and let's try to maintain some continuity in this
8 relationship, because it is very valuable for the NRC.

9 And with that, I am going to go to -- I am
10 going to ask Janet Schlueter to give us an overview.
11 Janet.

12 MS. SCHLUETER: Thank you, Chip, and good
13 evening, and thank you for coming out tonight. As
14 Chip mentioned, I am the branch chief for the High
15 Level Waste Branch of the NRC, and we are the focal
16 point for all of the high level waste program issues.

17 I hope you will see by the time that we
18 are done with our presentation this evening that we
19 are committed to ensure that the NRC as an independent
20 agency conducts a thorough evaluation of any potential
21 repository at Yucca Mountain.

22 And as Chip mentioned, to provide context
23 for the presentations that will follow me, I will
24 spend a few minutes just describing the NRC's role in
25 this process.

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1 Who is the NRC? We are an independent
2 regulator. We are independent of the present
3 administration and of the other branches of the
4 government, and we have the responsibility for making
5 an independent safety decision with regard to
6 potential repositories.

7 We are also an experienced regulator. We
8 have been around for 25 years and we have licensed a
9 variety of facilities, and they may range from medical
10 facilities, to industrial, commercial, radiography,
11 fuel cycle, and commercial nuclear power reactors.

12 Our sole mission is to protect the public
13 health and safety, and the environment, as well as to
14 ensure that those facilities are safe and secure.

15 The NRC is also charged with regulating
16 any energy department facility for the permanent
17 storage of spent nuclear waste. What exactly is our
18 role at Yucca Mountain?

19 Well, by law, we have been required to set
20 rules that protect the public and worker safety, as
21 well as the environment. We have also set rules that
22 are consistent with the final U.S. Environmental
23 Protection Agency Standards that would apply to Yucca
24 Mountain.

25 We also have been conducting public

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1 interactions during the prelicensing period with the
2 Energy Department, and we will eventually potentially
3 make our own independent decisions on construction and
4 potential operation of the repositories.

5 As the regulator and the independent
6 overseer, our job is to ensure that the Energy
7 Department obeys the requirements that we have in
8 place, and will do that through a comprehensive
9 licensing inspection and enforcement program.

10 How will the NRC carry out its role?
11 Well, first, we will review all information that we
12 receive objectively, and make a thorough safety
13 assessment based on the information that is presented
14 to us by the Energy Department.

15 We will also make all of our decisions
16 based on the facts in an open and transparent way, and
17 we will continue to maintain a dialogue with the
18 public and to make our decisions in a transparent
19 process.

20 The Yucca Mountain Review Plan, or a draft
21 licensing guide, is part of this process, and it is
22 the tool that the staff will use to make the
23 independent safety decision at potential sites.

24 How will we carry out this role exactly?
25 We are charged with making our licensing decisions one

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1 step at a time based on the information that is
2 available, and by that I mean that if the Energy
3 Department submits a license application to us, the
4 first action that would take place would be
5 authorization for construction of the potential
6 repository.

7 The next stage, yet several years on down
8 the line from that, would be to decide whether to
9 allow the actual receipt of material and operation of
10 the facility, followed by an amendment to the license
11 for permanent closure of the facility.

12 The NRC is the one who would decide
13 whether or not to allow the Energy Department to even
14 begin construction of the repository at Yucca
15 Mountain.

16 First, the Energy Department must submit
17 a license application to us, and the law already
18 requires that the NRC conduct its licensing review and
19 decision within 3 years of having received the
20 application from the energy department.

21 Congress also requires that the NRC
22 provide a full and fair public hearing as part of that
23 process, and this hearing process would be consistent
24 with that which we use for other licensed facilities.

25 But before the NRC would hold a hearing,

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1 several steps will and would have had to have
2 occurred, some of which have already occurred. As you
3 may be aware the Energy Department issued its final
4 environmental impact statement in February of this
5 year.

6 And in April the Energy Department
7 recommended the placement to the President, and the
8 President made his recommendations to the Congress in
9 April, as well as the Governor of Nevada had submitted
10 his notice of disapproval during April.

11 The next step as you are probably aware is
12 with the Congress, and continues to rest with the
13 Congress at this time. They have 90 consecutive
14 legislative days in which to make that decision to
15 make that decision, and if they make the decision to
16 allow the site recommendation to take effect, then the
17 Energy Department must then decide whether or not to
18 submit a license application to the NRC.

19 At this point the Energy Department
20 estimates that that license application would come to
21 us in December of 2004. At that time, the NRC has
22 approximately 90 days in which to make a decision as
23 to whether or not the license application which has
24 been submitted to us is acceptable for review or
25 docketable as we refer to it.

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1 If we decide that the license application
2 is docketable for review, the NRC's licensing review
3 process begins. This is when the three year clock
4 would start for us.

5 There are three possible outcomes of the
6 NRC's licensing process, which is consistent with the
7 licensing process that we use at other facilities that
8 we license.

9 The burden of proof is on the applicant,
10 and in this case, the Energy Department. We could
11 deny the application outright since in that case the
12 applicant would not have demonstrated that the safety
13 requirements applicable to the site would be met.

14 We could also grant the license with
15 certain conditions applied to the license, where the
16 Energy Department would need to take certain steps,
17 additional steps, to ensure safety; or we could grant
18 the license with no further conditions.

19 How would the NRC decide whether to accept
20 the Energy Department's application for review?
21 First, we would have to make a decision as to whether
22 or not it contained all the required information as
23 required by our rules.

24 And this is where the Yucca Mountain
25 Review Plan comes in. This is the document that the

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1 NRC would use to make that decision. Also, is there
2 is enough documentation to support the Energy
3 Department Safety Plan on their license application,
4 and also there are certain document access
5 requirements; that the information be easily accessed
6 by the public in an electronic form.

7 There would have to be a decision made as
8 to whether or not the Energy Department had met that
9 requirement. If yes, then our detailed technical
10 review of the license application, or the three year
11 clock, would start.

12 How would we address these safety issues?
13 We would rely on our independent experts, both the
14 engineers and scientists that Chip referred to at NRC
15 headquarters, which is my branch, and also the
16 independent scientists and engineers that we have at
17 the Center for Nuclear Waste Regulatory Analysis in
18 San Antonio, Texas.

19 And we actually have two representatives
20 at the center here tonight, Pat Mackin, who has been
21 introduced; and also Mike Smith, who is over at the
22 table on the far side of the room.

23 We could also require that there be more
24 information submitted from the Energy Department as
25 needed if there were information gaps, and we do our

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1 own testing at the center in Texas, and we document
2 our conclusions in a transparent way with regard to
3 our safety findings.

4 Also, there is the decision that the NRC
5 will need to make as to whether or not we would adopt
6 the Energy Department's final environmental impact
7 statement.

8 The law requires that the NRC adopt a
9 final environment impact statement unless one of two
10 conditions exist, and that is that the action to be
11 taken as a result of the licensing process differs
12 from that described in the final environmental impact
13 statement, and that difference may significantly
14 impact the environment.

15 The other condition is that there be
16 significant and substantial new information or
17 considerations that make the final environmental
18 impact statement inadequate and would warrant
19 additional information.

20 I would like to assure you that if the
21 Energy Department submits a license application to the
22 NRC, we will be ready to judge the safety of the
23 potential repository. We do have protective
24 standards, and regulations in place to protect you and
25 the environment in which you live.

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1 We are also continuing to hold public
2 meeting with the Energy Department during this pre-
3 licensing period, and through this process we have
4 identified information back that the Energy Department
5 will need to address and provide in the license
6 application.

7 And in addition as we have been indicated
8 here tonight, we have developed the draft Yucca
9 Mountain Review Plan for this purpose, which is the
10 guide that the NRC would use to conduct this license
11 review as a safety decision, and we would solicit your
12 comments on that document this evening.

13 And I think Chip had mentioned a variety
14 of ways in which you can comment; the written comments
15 by letter into the NRC, and we have a form over there
16 on the table, and I believe it has probably been given
17 to you in our packet, or you could actually leave your
18 written comments here tonight.

19 As part of the process of being ready to
20 potentially judge the safety of a repository, we did
21 issue our proposed regulations that would apply to
22 Yucca Mountain in February of 1999.

23 We received public comment at that time to
24 extend the public comment period and we did so by a
25 period of about 2 months. The EPA issued its final

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1 standards in June of 2001, and the NRC, upon careful
2 review of those standards, also issued its conforming
3 regulations last November.

4 In order to ensure that the citizens of
5 this State had an opportunity to provide their
6 comments, we have held six public meetings in Nevada
7 on the proposed regulation.

8 And overall we have received more than
9 1,000 comments during that time period, including many
10 of those which we have heard at meetings just like the
11 one that we are having here tonight.

12 After reflecting on those comments, we did
13 make major changes to our final regulations, which I
14 believe you will find do reflect and are consistent
15 with your concerns.

16 For example, we did wait until the
17 Environmental Protection Agency had issued their final
18 standards, and we issued ours five months later, and
19 made conforming changes to our proposed rules.

20 We also adopted the Environmental
21 Protection Agency's limits for individual protection,
22 and also their separate limits for the ground water.

23 In addition in response to your comments,
24 we are also retaining our current formal hearing
25 process for the potential Yucca Mountain site.

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1 As you are probably aware of the recent
2 recommendations by the President, and the Energy
3 Department, and the Congress, the NRC has no role in
4 this site decision. We have a very narrow role in
5 this process, and it is not appropriate for us to take
6 a position at this time as to whether the Yucca
7 Mountain site should be developed further as a
8 potential repository.

9 Our view will be shaped much later in the
10 process as the independent regulator, the agency that
11 would make the safety decision and determine whether
12 or not the license should be issued to construct a
13 potential repository at Yucca Mountain.

14 Meanwhile, we will continue to interact
15 with the Energy Department before any license
16 application is submitted as provided for under the
17 law.

18 And as I mentioned earlier, these
19 interactions with the Energy Department have
20 identified information gaps, which then translate into
21 of relate back to and link back to the nine key
22 technical issue areas that the NRC has previously
23 identified as being important to the program.

24 There is a handout on the table over there
25 as well about the nine key technical issues, and the

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1 nine key technical issues -- this is a term that the
2 NRC had originated to categorize the technical areas
3 which we have used to guide our review of the Energy
4 Department's site characterization efforts to date.

5 We have also used it to frame our
6 regulations and to frame the draft Yucca Mountain
7 Review Plan, which we will be discussing in more
8 detail.

9 The key technical issues include such
10 questions as how would water move above and below a
11 potential repository; how would waste heat affect when
12 and how water reaches the waste; and how long will the
13 containers last, and what happens to the waste when
14 the containers are breached.

15 How will we judge that the Energy
16 Department has enough information about a key
17 technical issue? We have developed acceptance
18 criteria which are based on issues significant to
19 safety, and those are reflected in the Yucca Mountain
20 review plan.

21 These criteria, and also their technical
22 bases, have been documented in a series of publicly
23 available reports that you will find on our website.
24 And as I mentioned the draft licensing guide or the
25 review plan does correct these criteria in a single

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1 document.

2 And as Chip mentioned, this is one of the
3 reasons or many reasons why this document represents
4 a significant program milestone for our program, and
5 it is an important one in which we come to you tonight
6 to solicit your input on as we work to finalize it.

7 Our approach is consistent with that used
8 in our other licensing programs. The Yucca Mountain
9 Review Plan is a licensing guide that the staff will
10 use as our basis for the NRC staff review of the
11 potential license application.

12 And it describes how we will decide if the
13 application meets the applicable requirements. We did
14 place a copy of our Yucca Mountain Review Plan on our
15 website in March, and a Federal Register Notice was
16 issued on March 29th.

17 The document is open for a 90 day comment
18 period, ending June 27th, and we are conducting these
19 public meetings here tonight in hopes of receiving
20 your comments, as well as ones that we will receive in
21 writing through the end of June.

22 And as was the case in the development of
23 our regulations, we sincerely appreciate and welcome
24 your comments on this document and to fine tune it,
25 and to make it a better document, and more focused,

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1 and we have brought hard copies of the document here.

2 We also will soon have a CD-ROM version of
3 the document, and if you wish to receive a copy of the
4 document, the CD-ROM, I believe we have or we will
5 have, if we don't already have one over there, a sign-
6 up sheet for any individual that would like to receive
7 a copy of the CD.

8 We brought the authors with us here
9 tonight to describe the plan, and I hope that you will
10 find that useful and informative, and we hope that you
11 will take the time to provide comments on it.

12 And as we mentioned earlier, we do have
13 our transcriber over there, who is documenting those
14 comments so that we can not only hear them tonight,
15 but also consider them as we go back to our offices
16 and work on this document further.

17 As I mentioned, this process that we are
18 using here tonight is similar to that which we used on
19 the rule that would apply to potential licensing of a
20 site.

21 I hope that you will see that we are ready
22 to do our job as an independent regulator to judge a
23 site for a potential repository, and as I mentioned we
24 do have our standards and regs in place.

25 We have the review plan, and it is my job

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1 to see that the NRC staff fulfills its obligation to
2 protect public health and safety by conducting a
3 thorough and very critical review, and making a safety
4 determination based on the information that the Energy
5 Department would potentially supply to us, and guided
6 by the use of the Yucca Mountain Review Plan.

7 And I am here today to hear your concerns,
8 and I can assure you that we consider them
9 significant, and we view our obligations to you with
10 the utmost seriousness, but before we launch into more
11 presentations, I would also be happy to answer any
12 questions that you might have at this time.

13 MR. CAMERON: Okay. Thanks, Janet, and
14 this piece was sort of a context to help you
15 understand a little better some of the specifics that
16 Jeff, and Pat, and Tim are going to get into on the
17 plan. So let's see if there are some questions that
18 might need to be answered.

19 Grant, if you would please state your name
20 for the record.

21 MR. HEDLOW: I am Grant Hedlow, and I
22 noticed in your process up there that you had one step
23 missing that has already been done. As I understand
24 it, you sent a letter to the DOE saying it looked like
25 that they were far enough along that it was time for

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1 them to get ready to do an application, and that is
2 what triggered Secretary Abrams to go to Congress and
3 so forth.

4 And I didn't know whether that was
5 considered important to you. It was certainly a
6 surprise to me to find out after the fact that you had
7 already done that without discussing it with anybody.

8 MS. SCHLUETER: Well, the NRC -- I am
9 assuming that you are referring to the letter that we
10 sent last fall, and I believe it was in November, to
11 the Energy Department.

12 And we referred to that letter as our
13 letter on sufficiency comments. We were fulfilling a
14 statutory requirement that we provide comments to the
15 Energy Department on two things.

16 And those are the degree to which the
17 Energy Department has characterized the site and depth
18 where the waste would be placed, and also their waste
19 form proposal.

20 So we had a very narrow role in that
21 process, and our comments were directed at whether or
22 not the Energy Department had adequate information
23 available to date, and based on the information that
24 had been identified to date, whether or not we thought
25 that it was conceivable that the Energy Department

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1 would be able to provide a license application with
2 all the necessary information.

3 And so we had a very narrow role that did
4 not relate to whether or not the site should be
5 recommended to the President.

6 MR. CAMERON: And if people want a copy of
7 those sufficiency comments, are they publicly
8 available?

9 MS. SCHLUETER: Oh, yes. I think we have
10 them on our website. Yes, we do.

11 MR. CAMERON: Okay. Let's go to Sally.
12 And Sally, give your name, please.

13 MS. DEVLIN: My name is Sally Devlin, and
14 welcome, Janet. It is very nice to have you here, and
15 welcome everybody. I am so delighted that you said
16 something that has been a concern for many years,
17 those that have participated for 10 years.

18 And that is that you said that you got
19 together with EPA on the number of people that you are
20 going to kill. Yours was one in a million, and theirs
21 was in 10,000.

22 I didn't know this, and I am delighted to
23 hear it. I don't know who the 10,000 or the million
24 are going to be, but I would like to see some
25 documentation on this and when it happens, because you

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1 two have not spoken in years.

2 When did this happen and where is the
3 documentation?

4 MS. SCHLUETER: We have been working with
5 the Environmental Protection Agency for some time to
6 develop the standards that would apply to the Yucca
7 Mountain site.

8 And you are probably aware that we had
9 proposed in our rules a different all pathways limit
10 to the Environmental Protection Agency had proposed.
11 We believe that our all pathways approach was
12 protective, and that the EPA had developed as separate
13 ground water standard.

14 Our all pathways approach had also
15 included consideration of the ground water pathways.
16 The law required that the NRC issue final regulations
17 which were not inconsistent with what the
18 Environmental Protection Agency did.

19 So while we had put our proposed rule out
20 first, the EPA then came along and issued their
21 proposed rules. We each of course gained information
22 during the public comment period that ensued with
23 these rules, and then we waited to see how the
24 Environmental Protection Agency would finalize their
25 rule before we finalized ours.

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1 And as I mentioned, we did adopt their
2 standards in the end.

3 MR. CAMERON: Okay. Thank you. Kalynda.

4 MS. TILGES: Kalynda Tilges, Citizen
5 Alert. I think it is interesting that the NRC went
6 ahead and adopted the EPA regulations five months
7 after they were put out there. These regulations,
8 these EPA regulations, are in litigation right now,
9 and they basically have been since before the ink was
10 dry on the proposal.

11 So with that in mind, assuming that the
12 EPA standards get thrown out completely and they have
13 to go back to the drawing board -- and first of all,
14 I find it interesting that you would adopt regulations
15 that are in litigation.

16 And, secondly, if they are thrown out in
17 a court of law, as well they should be, what will the
18 NRC do then?

19 MS. SCHLUETER: Well, you're right, the
20 EPA standards and our own regulations are currently
21 under a court challenge. In the interim, both rules
22 are considered final.

23 There are some standards that both
24 agencies have in place and we are implementing until
25 such time that the court changes that. If that were

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1 to occur, then obviously we may have to undertake a
2 separate rule making to make some modifications,
3 assuming some, to our rule to be consistent with that.

4 But in the interim they are the final
5 rules that were promulgated through a public process.

6 MR. CAMERON: All right. Kalynda, does
7 that answer your question about what will happen if
8 the EPA rules go back to the drawing board?

9 MS. TILGES: Yes.

10 MR. CAMERON: Okay. Let me just point out
11 that there is a -- going back to Grant's question.
12 There is a yellow glossary sheet over there that does
13 explain more about the sufficiency comments of the
14 NRC.

15 Let's take one more comment and then let's
16 get into Jeff's presentation. Grant.

17 MR. HUDLOW: Grant Hudlow again. I
18 noticed that the NWTRB identified 229 -- is it 293 now
19 -- details, technical details that need to be
20 addressed, and you have nine. I and the industry
21 apply for regulators licenses all the time.

22 And, number one, if I threw out 280
23 details, and decided not to consider them, I would be
24 criminally liable if anything happen. And, number
25 two, the process for regulators is that no matter how

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1 many people you say you have here and there, you don't
2 have enough to do all the work that the DOE has done,
3 plus all the work that the various States, and
4 independent people that are interested, and so forth.

5 And the only way that you can verify
6 technical details is to do the work. So the NRC
7 doesn't do the work. What they do is they trust the
8 people that are applying for advices, and that is the
9 process that we use.

10 We find an engineer that they trust, and
11 then we send them to the NRC to get the license. I
12 think the public needs to know that, that the NRC is
13 not guaranteeing all this stuff. They are only
14 trusting somebody.

15 Now, the trust for the DOE that has made
16 a mess in everything that they have ever touched,
17 including this process, it seems to me like you are
18 way out of line.

19 MR. CAMERON: And I think it probably is
20 important to address the last statement particularly
21 about focusing on what does the NRC do to review the
22 DOE application.

23 And do you want to talk about how we do
24 that, just opposed to Grant's assumption that we trust
25 the DOE, and you might want to talk about how rigorous

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1 our process is, and not under staff review, but
2 adjudication.

3 MS. SCHLUETER: That's true. We are an
4 independent agency from the Energy Department as I
5 stated. We are not part of them. The application
6 process is identical to the one in the licensing
7 process, and identical to the ones that we use in
8 other licensing arenas at the NRC.

9 We will have a detailed technical review
10 which will take us years to conduct. The very next
11 time period there will also be the public hearings
12 which will take place before judges appointed by the
13 Commission to conduct the hearings.

14 They will be open, open to the public, and
15 all the technical information which the Energy
16 Department has placed into its license application,
17 and we have reviewed, would be the subject of that
18 hearing process.

19 What I was going to explain is that -- and
20 going back to your original questions though, is that
21 these nine key technical areas are the areas which the
22 NRC has identified are important to us for
23 understanding whether or not if operated as the Energy
24 Department would propose, and describe on their
25 application, would be safe.

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1 And our regulations for protection of the
2 environment and the people would be met. Now, I need
3 to explain the nine versus the 293 though. The nine
4 key technical issue areas are very large program
5 areas.

6 There are areas like will volcanos occur,
7 and will earthquakes occur, how will the water flow
8 through the rock. What is the container life going to
9 be, and the waste package. Will it degrade.

10 And there are handouts as I mentioned that
11 might walk you through all those questions as well.
12 Out of those nine major key technical program areas,
13 there are many issues which have fallen out of those
14 nine major areas.

15 When we speak of the 293, the 293 is a
16 number which the NRC and the Department of Energy have
17 identified. Those are 293 areas where there are
18 information gaps, which through the public interaction
19 that the NRC and the Energy Department have held to
20 date, have been identified as areas that the Energy
21 Department still needs to address, and would need to
22 address in any license application.

23 Some of them require a smaller level of
24 work than others, and some others require a larger
25 level of work. So that is not a number that the

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1 Nuclear Waste Technical Review Board has thrown out
2 there.

3 It is the number which the NRC and the
4 Energy Department have both identified as areas that
5 need to be addressed. And that is the basis for the
6 staff's technical review.

7 MR. CAMERON: And that is a good
8 introduction, I think, for Jeff, but we have a -- did
9 you have just one brief question?

10 MS. TILGES: Yes. I noticed that this
11 document has been available since March. Well, we
12 won't even go into the issue about not being notified
13 about his meeting, and many other people who have been
14 on the list for a long time weren't notified about
15 this or others.

16 But this is the first that I have heard
17 about this document, and this is what I do for a
18 living. Okay. So I obviously don't have 90 days to
19 do this. Where and how do we get that extended,
20 because this is not enough time for a document that I
21 just heard of yesterday.

22 MS. SCHLUETER: The NRC does entertain
23 requests for extensions of the comment period. We
24 take those on a document by document, or rule by rule,
25 basis.

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1 We did place this on our website in late
2 March. It is an awfully large document. I understand
3 that it is very complex, and there is a lot of
4 technical information in there, but we are hoping that
5 we will receive comments by June 27th on the document.

6 MR. CAMERON: And I think that since this
7 is a meeting for public comment on a document, that I
8 think that we will register this as a comment, and the
9 staff is going to have to consider that.

10 MR. LANDEN: I am Ralph Landen, and I
11 would like to know if some of those, of the nine, if
12 they don't fly, do you go back to the DOE and get them
13 to say yea or nea, and then start over again? How
14 does that work?

15 In other words, if you have most of your
16 comments from the DOE, of those 293, most of them are
17 from the DOE?

18 MS. SCHLUETER: No, no, those are
19 information gaps that the NRC has identified, and the
20 Energy Department has agreed are information gaps, and
21 we did those at our public meetings that we have had
22 with the Energy Department during this pre-licensing
23 phase.

24 MR. LANDEN: Okay. Suppose the NRC does
25 not agree with some of those?

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1 MS. SCHLUETER: You mean the information
2 that the Energy Department would submit?

3 MR. LANDEN: Yes. What happens next?

4 MS. SCHLUETER: Then we would ask for
5 additional information. If we don't believe that the
6 Energy Department has satisfied the information needs,
7 then the Energy Department would need to submit the
8 information as agreed to.

9 MR. LANDEN: So you are delaying the whole
10 process some more then, right?

11 MS. SCHLUETER: It is up to the Energy
12 Department to submit the needed information. The
13 burden of proof is on the applicant.

14 MR. CAMERON: And, Ralph, I think that
15 after you hear Jeff's presentation, it may become
16 clearer what the role of the license review plan is
17 there. But thank you very much.

18 And this is Jeff Ciocco, who is going to
19 get into the substance of the Yucca Mountain Review
20 Plan.

21 MR. CIOCCO: Good evening. My name is
22 Jeff Ciocco and I am with the Nuclear Regulatory
23 Commission. I am going to provide you with an
24 introduction into the draft Yucca Mountain Review
25 Plan, which would be the NRC's plan to assess the

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1 safety of the Yucca Mountain site.

2 And as Janet had mentioned, we will be
3 accepting public comments through the end of June of
4 this year. The agenda for my presentation this
5 evening, I am going to cover the purpose of conducting
6 this public meeting, and I am going to cover the
7 purpose and scope of the Yucca Mountain Review Plan.

8 I am going to tell you what is covered in
9 the review plan, and what isn't covered in the review
10 plan. I will explain to you how the Yucca Mountain
11 review plan is risk-informed and performance-based and
12 what that means.

13 I will introduce you to the five main
14 chapters in the review plan, and I will present to you
15 the individual or the structure of each of the
16 sections under the review plan. I will cover the
17 various ways that you can comment, and which Chip and
18 Janet already introduced to you.

19 And finally I will give you an
20 introduction into the following presentations. The
21 purpose of this public meeting is to describe the
22 purpose and content of the NRC's draft Yucca Mountain
23 Review Plan, and we seek your views on how well the
24 document would assess the safety of the Yucca Mountain
25 site.

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1 Openness is one of NRC's five principles
2 of good regulation, and nuclear regulation is our
3 business, and we want you to understand the NRC's
4 decision making tool, and that would be the Yucca
5 Mountain review plan.

6 The purpose of the Yucca Mountain Review
7 Plan is to provide instruction to the NRC staff on how
8 we will conduct the safety assessment of the Yucca
9 Mountain site.

10 The plan has to do with the quality of the
11 reviews of the NRC staffing review, because it is
12 tailored to the specific Yucca Mountain regulations in
13 10 CFR Part 63. The plan ensures the quality of the
14 reviews, because each section has a very consistent
15 structure which I am going to explain to you in a few
16 minutes.

17 And we do want to make the NRC's review
18 strategy publicly available, and in the plan, Chapters
19 3 and 4, Chapter 3 is the general information, and
20 Chapter 4 is the safety analysis report.

21 It provides guidance for what must be in
22 the license application. I want to point out that the
23 Yucca Mountain Review Plan is not a substitute for the
24 regulations. However, it is our plan for the
25 assessment of the safety of the site.

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1 In summary the plan lists the information
2 for what must be contained in a license application,
3 and provides specific review procedures for the NRC
4 staff to assess the safety of the Yucca Mountain site.

5 What is the scope of the Yucca Mountain
6 Review Plan. The NRC would use the Yucca Mountain
7 Review Plan to assess the safety of the site through
8 all phases of licensing, and as Janet described to
9 you, there are three pages of licensing.

10 The first phase is the building permit,
11 and that is the construction authorization, where we
12 review the Yucca Mountain review plan. The second
13 phase is the license to receive and possess high level
14 waste.

15 This review would focus on DOE's
16 demonstration of how they substantially complete a
17 construction of the above ground and below ground
18 facilities.

19 And the third phase of licensing is the
20 amendment for program closure, which we would also use
21 the Yucca Mountain review plan. Now, what is not
22 included in the Yucca Mountain review plan. There are
23 three specific areas. First, if the site
24 recommendation process that Janet explained, that
25 process is currently under way in Congress, and the

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1 Yucca Mountain review plan would be used further down
2 the road if an elections application is submitted to
3 the Nuclear Regulatory Commission.

4 The environmental impact statement is not
5 included in the scope of the Yucca Mountain Review
6 Plan. The NRC has separate regulations and a separate
7 process for adopting the Department of Energy
8 Environmental Impact Statement that is practical.

9 So the environmental process is separate
10 from the safety assessment process, which is the main
11 scope of the Yucca Mountain Review Plan.

12 Transportation issues. Transportation
13 issues are regulated by the Nuclear Regulatory
14 Commission and several sister agencies of the U.S.
15 Department of Transportation.

16 This is separate from the purpose and
17 scope of the Yucca Mountain Review Plan. We are
18 assessing the safety at the site once waste is
19 received, processed, handled, and ultimately disposed
20 of at the site.

21 So the transportation issues are a
22 separate area and jointly regulated, and apart from
23 the Yucca Mountain Review Plan.

24 How is the Yucca Mountain review plan
25 risk-informed and performance based. You may have

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1 heard these four words being used a lot by the NRC in
2 writing its regulations and in conducting safety
3 reviews.

4 First, the Yucca Mountain Review Plan
5 provides review guidance to the NRC staff which
6 implements the site specific regulations. The
7 regulations use the risk of health effects as a basis
8 for its objective safety criteria.

9 For example, those criteria that are in
10 the regulations are the EPA standards for individual
11 protection, ground water protection, and human
12 intrusion.

13 So we say that the NRC's regulations are
14 risk-informed and performance-based. Next, the review
15 plan applies these safety criteria as a basis for its
16 compliance with the regulations. That is why we say
17 a review plan is performance based. It has as
18 performance objectives the EPA standards. And finally
19 we say a review plan is risk-informed because it
20 focuses on areas that are most important to safety.

21 For example, the staff may focus its
22 review on the flow of water through the mountain and
23 dripping on to the tunnel on to a waste basket, or the
24 staff may focus its review on the corrosion of the
25 waste packages on the ground.

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What are the main chapters of the review plan? Well, there are five main chapters of the review plan. The first chapter is the introductions.

4 It provides an overview of the NRC's
5 licensing review philosophy and it has statements in
6 there that the NRC did not select the sites or the
7 designs, and the NRC's reviews are comprehensive and
8 focus on issues most important to safety.

9 And the NRC will defend its licensing
10 decision, while the applicant, the U.S. Department of
11 Energy, must defend its safety case, and its life and
12 death occasions.

13 Chapter 1 also talks about the general
14 review licensing procedures, and how the review plan
15 is risk-informed and performance based for each
16 section.

17 Chapter 2 is the acceptance review. It is
18 really the first screening of the license application
19 using acceptance checklists based on the regulations.
20 It determines the completeness of information of the
21 engineering design and the site characteristics.

22 It determines if sufficient information is
23 available to conduct a detailed safety review of the
24 site, the results of the acceptance review, and that
25 we would accept the license application for a detailed

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1 chemical review, and that we would accept the license
2 application for a detailed technical review with a
3 request for additional information.

4 Or we would deny the license application
5 because there is not sufficient information to conduct
6 a review, and in that case, we will list specifically
7 corrective actions if the Department of Energy would
8 like to resubmit its application.

9 Chapter 3 is the general information, and
10 its purpose is two-fold. First, it needs to provide
11 an overview of the engineering design concept, and
12 secondly in Chapter 3, general information as to give
13 the DOE the opportunity to demonstrate the influence
14 of the site characteristics on the engineering design
15 and the performance of the site.

16 Additionally in Chapter 3, which I am
17 going to present to you a little bit later, it
18 provides details of the physical protection plan and
19 the material control and accounting plan, the two main
20 safety features of the site.

21 And finally in Chapter 4 is the safety
22 evaluation chapter. This is the main body of the
23 review plan, and there are five sections in there; the
24 safety evaluation of safety analysis report required.

25 And it would assess the safety during the

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1 operations, which also is called the peak-loaded
2 period, and it would assess the long term safety of
3 the site, also known as post-closure, and it provides
4 an evaluation of the research and development program.

5 It resolves safety questions, and it would
6 assess the performance confirmation program, and it
7 has a section called administrative and programmatic
8 requirements, which includes the quality assurance
9 program.

10 And finally at the very end, in Chapter 5,
11 is a glossary, and there is about 300 terms defined
12 that are in the Yucca Mountain Review Plan. Next is
13 the structure of each individual review section in the
14 plan.

15 Each section is structured similarly to
16 allow for a uniform review. Let me explain. Each
17 section has an area of review, and the review method,
18 the acceptance criteria, and the evaluation of
19 findings, and the references.

20 The areas of review defines the scope of
21 each section to prepare the reviewer. The review
22 methods are the step-by-step procedures the NRC would
23 review to access whether compliance with the
24 regulations are met.

25 And next is the acceptance criteria. It

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defines acceptable compliance demonstration with the regulations, and then we have the evaluation of findings.

4 It documents inclusions of the staff
5 evaluation of all of the information. It would
6 include a description of what has been reviewed, a
7 basis for the staff's conclusion, and then finally a
8 conclusion statement.

9 How to comment on the Yucca Mount Review
10 Plan. Both Chip and Janet covered this. We have
11 forms over on the table, and you can speak verbally
12 today, and you can submit a form at the meeting, or
13 sent it electronically.

14 We have a website, and you can submit it
15 in writing to Mike Lesar at the NRC, and the comment
16 period ends on June 27th. And in conclusion the NRC
17 seeks your views on how we would assess the safety of
18 the site.

19 And we have four following presentations
20 that we are going to discuss the safety review. We
21 are going to cover the safety during the operations,
22 and also known as the pre-closure period, and that
23 would be really be Section 4.1 of the review plan.

24 We are going to talk to you about the long
25 term safety of the site, and that is defined in

1 Section 4.2, which is post-closure. I am going to
2 present to you how we would assess security from theft
3 and sabotage, and finally we are going to talk to you
4 about the adequacy of monitoring in the Yucca Mountain
5 Review Plan.

6 MR. CAMERON: Okay. Thanks, Jeff. And
7 one thing that I should have explained earlier when I
8 went through the agenda is that Jeff has given us sort
9 of a broad overview of this Yucca Mountain Review Plan
10 and purpose.

11 And each of the succeeding or following
12 speakers are going to talk about the substance in
13 various portions of the review plan. Is that correct?

14 MR. CIOCCO: Yes.

15 MR. CAMERON: Let's see if there are any
16 questions about this sort of overall presentation.

17 (Question off microphone.)

18 MR. CAMERON: There is a handout over
19 here, too, and I will just give you this, Jerry, for
20 now. But it is in there.

21 MR. CIOCCO: It is also on like page 3 of
22 the actual review plan.

23 MR. CAMERON: And keep in mind that people
24 can request -- you can request a copy of a CD-ROM of
25 the review plan?

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1 MR. CIOCCO: That's correct.

2 MR. CAMERON: There are hard copies
3 available tonight?

4 MR. CIOCCO: Yes, we brought several
5 copies.

6 MR. CAMERON: Okay. All right. So let's
7 go to Sally.

8 MS. DEVLIN: I have a quick question. We
9 have many questions on this, but on the GAO report
10 written by Wayne Weingold, they say you are already
11 four years behind, and that nothing could be done
12 until 2014 plus, and that the scientific experiments
13 won't be done properly and so on.

14 My question has nothing to do with that at
15 all, because I have grown up the last 10 years and
16 matured with Yucca Mountain. And the thing that
17 bothers me the most is the continuity of help, and I
18 use the term help because every time we have a meeting
19 we have new directors and new people, and so on.

20 And of course I am 72, and I will be 86 or
21 more by the time that this is ready to open, if it
22 ever opens. And according to R&D Magazine, you are
23 going to lose 40 to 60 percent of your staff, and the
24 five people who are going to make this decision, the
25 final decision, are the NRC people.

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1 And of course they don't serve
2 consecutively, and so they have got 10 to 14 years
3 ahead of them. And who is going to know the first
4 information -- you know, first and last out, et cetera
5 -- and inventory of information.

6 Now, since I have been doing this, and I
7 would say in '95 when they changed boards at the end
8 of the GRB, we have seen completely different people
9 and so on, but the same thing is being done. It is
10 all model.

11 You talk about San Antonio, and nothing is
12 done on-site, and I am not going to go into details.
13 But I am very concerned regarding personnel,
14 personalities, compliance, and so on. And I don't
15 think that this is ever discussed.

16 I know your criteria, but the public
17 doesn't. You need a Masters Degree, and this, that,
18 and the next thing. Where are you going to get these
19 people for not only the scientific project, but you
20 have so few inspectors who have done those numbers on
21 your 37,000 sites.

22 So if your inspectors only see a site
23 every 2-1/2 years, which I brought to your attention,
24 where is your personnel going to come from? Where are
25 all these competent people? This is a question that

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1 is never asked, and should be answered.

2 MR. CIOCCO: That is a good question. I
3 think I will let Janet talk to you a little bit about
4 personnel.

5 MR. CAMERON: Very good.

6 MR. CIOCCO: But first I would like to
7 make a point. I have a sign up there that the purpose
8 of the review plan is to ensure the quality and
9 uniformity of that review.

10 And one of the purposes is to document
11 specifically what needs to be reviewed, irregardless
12 of what personnel is on-site at the NRC or in San
13 Antonio.

14 So there was a group of several experts
15 throughout these individual sections, and dozens of
16 people, tens of people, who wrote this review plan.
17 And its purpose is really to ensure the quality and
18 uniformity of reviews, no matter who is there.

19 MR. CAMERON: So what you are saying is
20 that one of the ways to deal with the inevitable
21 changing of people to preserve an institutional
22 memory, this Yucca Mountain Review Plan actually tries
23 to deal with that particular issue is what I hear you
24 saying?

25 MR. CIOCCO: Yes.

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1 MR. CAMERON: Okay. Janet, do you want to
2 say anything more?

3 MS. SCHLUETER: Well, yes. I think that
4 Jeff has made a good point. That is the entire
5 purpose of doing the extensive documentation that we
6 do in any of our program areas, is to ensure the
7 traceability of the process, public safety reviews,
8 and documenting the criteria that we use to complete
9 those reviews.

10 And you are right. With any organization
11 there would be some turnover of individuals. I am new
12 to my section, but I am not new to the NRC. I have
13 been with the NRC for about 13 years.

14 There is also individuals here in the room
15 that have been in the high level waste program for a
16 long term, maybe longer than Tim, and Janet, and
17 others who would like to recognize.

18 But we do have a large cadre of
19 individuals that have been in the high level waste
20 program for a long time, and the center has been under
21 contract with us for about 15 years, I believe.

22 You are probably referring to figures that
23 we all see about the Federal Government at large,
24 having a large percentage of individuals that are
25 near, or will becoming near retirement age.

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1 It's true that we are not unique in that
2 way, although I will say that our attrition rate, the
3 rate at which individuals are leaving the agency, is
4 much less than other Federal Agencies, and I think
5 that is in part because we are a highly technical and
6 specialized agency, and when people come to work
7 there, they generally stay there for a long time.

8 And there are a lot of people there
9 committed to continuing in this program to assure that
10 we do a good job.

11 MR. CAMERON: Thank you, Janet. Let's
12 have one more question. Do we have one over here? So
13 Grant, can you give us your question?

14 MR. HUDLOW: I am Grant Hudlow again. I
15 am following on with what Sally had to say, but there
16 is one more detail I think that she didn't mention.

17 The continuity in most regulatory
18 situations, all of them that the NRC has dealt with so
19 far, is that the people they are regulating have a
20 profit motive.

21 And in the case of the power plants, the
22 profit motive is a million dollars a day for each of
23 those reactors. That forces them to try to get the
24 best people that they possibly can, as opposed to
25 about two-thirds of the engineers and scientists work

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1 for the government, or for government NMOs.

2 And they are not of the same caliber of
3 people that have somebody with a profit motive on
4 their back. It's not even close. To expand just a
5 little bit more on that, only four percent of the high
6 school graduates in this country are capable of
7 learning what engineers and scientists know.

8 So when you are holding a hearing like
9 this, you are talking that most of the people don't
10 have a clue what you are talking about, and you are
11 trying to -- and as we all do, trying to put technical
12 matters in terms that the public can feel comfortable
13 with.

14 And in addition to that four percent, two-
15 thirds of these scientists and engineers work for the
16 government are the NMOs and so there is even fewer
17 people that can understand the details of what you are
18 talking about here.

19 You have a different situation than you
20 have never even dreamed of before, and where you have
21 DOE people that are doing this kind of work, and they
22 are not capable of handing this kind of a project.

23 MR. HUDLOW: Is there some -- I would like
24 to hear what Janet has to say as to that.

25 MR. CAMERON: Okay. I don't think we can

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1 go anywhere with that, except that it is a statement
2 of opinion, I think. Well, Janet, is there a germ of
3 an idea there that you think you can respond to?

4 I know that the NRC staff -- I cannot
5 speak for DOE, but I know that you can say about the
6 qualities of our staff.

7 MS. SCHLUETER: Certainly. I wouldn't
8 dare try to speak about any other agency. Based on my
9 experience, I would disagree with the statement that
10 the private sector -- that due to the cost and profit
11 incentives is able to secure, and attract, and retain
12 more educated and more highly qualified engineers.

13 I have worked in the private industry, and
14 I have worked for the government now for 13 years, and
15 it is incumbent upon the NRC being such a highly
16 technical scientific-based agency to attract and
17 retain highly qualified individuals.

18 And we have many individuals that not only
19 have graduate and post-graduate degrees, but have
20 established themselves in the scientific communities
21 either before coming to the NRC or since being at the
22 NRC.

23 And you do that by conducting research and
24 also issuing articles in peer review journals, and
25 other mechanisms that professional societies allow

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1 individuals to obtain continuing education.

2 And to demonstrate that their skills are
3 at the necessary levels. And I am confident that the
4 staff that we have, both at headquarters and also at
5 the center in Texas, is certainly of the highest
6 caliber.

7 We have to, because our job is to make an
8 independent safety decision about that.

9 MR. CAMERON: Good. Thank you, and thank
10 you for asking that question, Grant. Kalynda.

11 MS. TILGES: Kalynda Tilges, Citizen
12 Alert again. I am going back to Slide Number 12 on
13 Janet's presentation, about the NRC must adopt a final
14 EIS unless, and there is a couple of points.

15 My question is that at this point there
16 has been no record of decision, no rod on the final
17 EIS. Therefore, according to the rules, I guess it is
18 not considered a legal document.

19 So I am kind of unclear as to why you
20 would accept or adopt something that doesn't have a
21 record of decision on it, and I have another question
22 after that.

23 MR. CAMERON: Do you want to address that,
24 Mitzi. Mitzi Young is from our Office of General
25 Counsel.

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1 MS. YOUNG: Good evening everyone. Thank
2 you for coming. Your question was about the NRC's
3 adoption of the EIS. Right now we are required by the
4 Nuclear Waste Policy Act to adopt the document, and
5 that decision by the NRC would not come until the time
6 that we noticed the application, which the current
7 estimate is December of 2004.

8 So the DOE's application should be
9 submitted, which means that we probably would not
10 notice it until March of 2005. In the interim it is
11 not clear what is going to happen with the status of
12 the regular decision, whether a court will find that
13 it is inadequate and should be thrown out, or whether
14 someone will determine whether it is adequate and that
15 the progress can continue.

16 But in terms of the NRC regulations, our
17 record of decision is that which grows out of our
18 hearing process, and any decisions that a judge makes
19 with respect to the environmental issues raised in the
20 proceedings.

21 So hopefully that is responsive to the
22 question you asked.

23 MR. CAMERON: I think that there also is
24 litigation on that very issue that is ongoing. Let's
25 get that next question and then let's go to Barbara

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1 Durham, and then we will come back to you.

2 MS. DURHAM: According to Section 114-G,
3 Subsection (b) or whatever, of the Nuclear Waste
4 Policy Act, under submission of license, the
5 Department of Energy has to submit a license within 90
6 days of adoption of the site, which could mean Senate
7 passage.

8 So while you are talking 2004, and the
9 recent GAO report in December of -- well, on December
10 21st, talks about the same amount of time.

11 So I fail to see how the Department of Energy could
12 follow the Nuclear Waste Policy Act in 90 days if you
13 are all going to wait until 2004.

14 MR. CAMERON: Now, I guess the only thing
15 that could be said about that is, yes, I think it is
16 correct that the Act requires the Department to file
17 that application 90 days after Congressional
18 approval, and that is DOE's responsibility, and that
19 is within their bailiwick, and I don't think the NRC
20 can say anything about that.

21 MR. CIOCCO: That is a date from the U.S.
22 Department of Energy, and that is not a Nuclear
23 Regulatory Commission date. That is the date that the
24 DOE has set and it is a recommendation, and they say
25 publicly that they expect to submit a license

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1 application --

2 (Discussion off mike, inaudible.)

3 MR. CAMERON: Let's go to Mitzi. Do you
4 want to say something about that?

5 MS. YOUNG: The 2004 date is based on
6 DOE's estimates of when they would have enough
7 information to submit an application. So it is only
8 what we have been told. It is not some date that the
9 NRC set from that standpoint.

10 You mentioned earlier -- I think it was
11 you -- 293 issues or questions. It was Sally, yes.
12 That in part had to do with DOE's decision to supply
13 information on some of those questions, those
14 agreements, the 293 agreements.

15 It is not really 293 issues, but it is 293
16 questions, and that turn into agreements that the NRC
17 would provide information on. The schedules for
18 submitting some of that information, whether it be a
19 document or conducting the analysis, involves a period
20 running all the way through part of 2004.

21 So there is some information that DOE
22 right now anticipates they will not have available
23 until later.

24 MR. CAMERON: Okay. Thank you.

25 MS. TILGES: So I still don't have my

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1 question answered. If DOE waits beyond the 90 days,
2 even though it is clearly against the Nuclear Waste
3 Policy Act --

4 MR. CAMERON: Even though it is against
5 the Nuclear Waste Policy Act, it doesn't mean that it
6 is the Commission's obligation to enforce that
7 particular provision, okay?

8 That doesn't mean that someone can't
9 litigate to enforce that provision, but I don't think
10 -- and I am wearing my facilitator's hat, and I am
11 taking it off a little bit here, but I don't think
12 that the NRC would say that because the DOE did not
13 file the license application within 90 days that we
14 could not review the license application.

15 But I am going to put my facilitator hat
16 back on and go to Mal Murphy, who I think can
17 enlighten us more on that.

18 MR. MURPHY: I am Mal Murphy, and I am the
19 regulatory licensing advisor for Nye County. The
20 problem with that analysis, Kalynda, is that
21 unfortunately from your point of view, and from the
22 point of view of others who share your views, Federal
23 officials are required by law to presume that their
24 brother agency directors in other Federal departments
25 are complying with the law.

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19 What the courts do is order the agency to
20 submit the application, and so the best that anyone
21 can do probably by challenging DOE for missing the 90
22 day deadline was to get a court to order DOE to
23 accelerate the filing of its license application.

24 And which we don't think is necessarily
25 the safest and most -- or from a public policy point

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1 of view, we don't think forcing an agency to submit an
2 application based on insufficient information is
3 necessarily the best public policy result.

4 MR. CAMERON: Thank you, Mal. Barbara.

5 MS. DURHAM: I don't really have a
6 question. I just want to read a letter or statement
7 from the Timbisha Shoshone Tribe. My name is Barbara
8 Durham, and I am the Staff Administrator for the
9 Timbisha Tribe of Death Valley.

10 This is addressed to the Nuclear
11 Regulatory Commission. "The Timbisha Shoshone Tribe
12 submits the following preliminary comments on the
13 draft Yucca Mountain Review Plan. Since the Tribe does
14 not receive funds for technical analysis and
15 monitoring like the State of Nevada and affected
16 counties, it is difficult to prepare specific comments
17 on the Review Plan at this time."

18 "However, comments can be made on the
19 license application process which the NRC must follow.
20 According to the Nuclear Waste Policy Act, the NRC
21 must adopt to the extent practicable, the final
22 environmental impact statement prepared by the United
23 States Department of Energy."

24 "The Timbisha Shoshone Tribe submitted
25 comments on the draft EIS and the supplemental draft

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1 EIS to the DOE. None of the comments were adequately
2 addressed in the final EIS. DOE's final EIS is
3 inadequate and does not meet the minimum standards of
4 the National Environmental Policy Act."

5 "The NRC cannot legally move forward with
6 a licensing review based upon an inadequate
7 Environmental Impact Statement. Later comments to the NRC
8 will specify the problems with the final EIS."

9 "The Timbisha Shoshone Tribe will be
10 directly affected if the Yucca Mountain Nuclear Waste
11 Site is built. The Tribe's Death Valley Junction
12 trust land is only 30 miles from Yucca Mountain, and
13 directly in the path of future radioactive groundwater
14 contamination."

15 "The Timbisha Village's drinking water
16 will also be affected by Yucca Mountain if the nuclear
17 waste dump is built. It is just a matter of time."

18 "Also, one of the proposed railroad
19 corridors for transporting nuclear waste to Yucca
20 Mountain is planned to go right through the Tribe's
21 Scotty's Junction parcel. It can be easily seen that
22 the future of Timbisha Shoshone Tribe will be severely
23 threatened if the Yucca Mountain project is allowed to
24 continue."

25 "Yucca Mountain is still in Western

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1 Shoshone territory. While the Timbisha Shoshone Tribe
2 is now planning for sustainable, ecologically sound,
3 economic development on its trust lands, the United
4 States Government is planning to poison the nearby
5 land for thousands and thousands of years."

6 "This alternative provides no future for
7 anyone. Decisions should be based on protecting the
8 land, and this is what needs to be done when
9 considering licensing approval."

10 And I have sat here, and I heard and
11 listened to people talk, and hit on different subjects
12 within this letter here, and I am representing the
13 Timbisha Tribe, and we are opposed to Yucca Mountain,
14 and we can only support and alert anyone else who
15 wants to fight this. Thank you.

16 MR. CAMERON: Okay. Thanks, Barbara, and
17 if you would like, we would attach that letter to the
18 transcript. Let's take one more question and then we
19 have to go to Pat Mackin. Yes.

20 MS. ROSE: Merlynn Rose, and I am a
21 volunteer working to stop Yucca Mountain, and I do
22 want to say that I moved up to Pahrump in order to
23 shut this mountain down, and I had absolutely no idea
24 of this meeting was being held. Isn't that funny?

25 I have one question. Is the NRC requiring

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1 DOE to show title of the land in order to approve the
2 license, or is that included with this?

3 DR. KOTRA: Yes.

4 MR. CAMERON: This is Janet Kotra. Janet
5 is a senior scientist out of the High Level Waste
6 Branch. Janet, do you want to address that question.

7 DR. KOTRA: Yes. That provision was
8 proposed in February of '99, and it is retained in the
9 final regulations that were published last November.
10 It requires that the Department make a demonstration
11 of clear and unencumbered title to the land, as well
12 as other rights and easements necessary in order to
13 demonstrate compliance with the standards.

14 MR. CAMERON: Thank you, Janet. And thank
15 you, Jeff, and we are now going to go to Pat Mackin,
16 who is going to talk about one portion of the Yucca
17 Mountain review plan, and it is going to be the pre-
18 closure.

19 MR. MACKIN: Safety during operations.

20 MR. CAMERON: Safety during operations.

21 Okay. Pat, go ahead.

22 MR. MACKIN: Good evening. My name is Pat
23 Mackin, and as was mentioned earlier, I work for the
24 Center for Nuclear Waste Regulatory Analysis in San
25 Antonio, Texas.

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1 And to clarify what Chip and Janet have
2 already said, my organization was established for the
3 specific purpose of helping the NRC do an independent
4 safety assessment of any repository proposed for Yucca
5 Mountain.

6 And we have worked with the staff to do a
7 significant amount of independent technical work in
8 those areas.

I am going to talk about the period from its construction through the end of operation, and how the NRC will do an independent assessment of DOE's license application for that period of time. I want to comment before I start that many of the operations that would go on at a repository go on at a number of other facilities around the country and around the world already, handling spent nuclear fuel, and packaging spent nuclear fuel, and protecting people from radiation exposures.

23 And this is being done in a number of
24 areas around the country and around the world, and the
25 Yucca Mountain review plan incorporates what has been

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1 learned from those programs.

2 There are a number of aspects of safety
3 during operations that DOE must present in its license
4 application, and that the NRC, in-turn, will confirm
5 through its independent assessment.

6 The first of these is what is called the
7 pre-closure safety analysis. This is what examines
8 whether the repository could be constructed and
9 operated to meet the health and safety standards.

10 The secondary area would be who would
11 operate such a repository, and would they be properly
12 trained. A third area would be how would such a
13 repository be operated. Would it be operated safely.

14 The next area is whether the waste could
15 be retrieved from the repository before it is closed,
16 and whether that could be done safely, and finally it
17 is a long term look to the future that if a repository
18 is licensed and operated, then some day it would be
19 closed.

20 And the DOE must present in its license
21 application its plans for that closure and
22 dismantlement of surface facilities. First, I want to
23 talk about the pre-closure safety analysis, and what
24 it is.

25 A pre-closure safety analysis uses

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1 techniques that are accepted by a wide variety of
2 industries to examine the safety of complex
3 facilities. It asks three questions basically; what
4 could go wrong; how likely it is that those things
5 could go wrong; and what the consequences or the
6 results are.

7 And for a repository the results would be
8 radiation exposures. The techniques for a pre-closure
9 safety analysis are used by the chemical industry for
10 plants, by the petroleum industry, and by the NRC for
11 other facilities that it regulates.

12 And the NRC staff has been trained in
13 these techniques. What does it do? It does a number
14 of things. First of all, a pre-closure safety
15 analysis looks at what are the hazards with the
16 facility.

17 For a repository, that would include such
18 things as a vehicle taking a canister down into the
19 repository and having the brakes fail, fires,
20 explosions, both man-made and natural that have to be
21 examined.

22 Then the pre-closure safety analysis looks
23 at how likely it is that these events could occur.
24 The next step of a pre-closure safety analysis is to
25 address what the consequences of these things that

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1 could go wrong are, and for a repository, we are
2 essentially talking about radiation doses to the
3 public or to the workers.

4 Next, by identifying what can go wrong,
5 and showing what the results could be, the Department
6 of Energy will have to identify those systems,
7 machines, components, processes, that have to be
8 operated to protect people, the public and the
9 workers.

10 Those items are called items important for
11 safety, and so the pre-closure safety analysis will
12 have to identify items important to safety. And the
13 next aspect will be to compare the results, the
14 consequences, to the safety standards.

15 The safety -- the consequences must be
16 less than the safety standards, or a repository would
17 not be licensed. And finally the pre-closure safety
18 analysis provides for a detailed review of the design
19 of those items that are important for safety.

20 The next thing that I want to talk about
21 is who would operate such a repository. There are a
22 number of things that DOE must present in its license
23 application that the NRC will assess.

24 The first is the organization that DOE
25 would use to operate a repository. What is the chain

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1 of command, and who had which responsibilities, and
2 how was authority delegated. The next thing that the
3 DOE must demonstrate is that I mentioned just a few
4 seconds ago that there are items important for safety.

5 DOE must demonstrate that somebody is
6 responsible for all of those items important for
7 safety, and that the responsibilities of those
8 individuals are well-defined, and that the
9 qualifications of those individuals are set out in the
10 license application.

11 Next there is the issue of selecting,
12 training, and qualifying personnel. I mentioned
13 earlier that nuclear facilities are all over the
14 country and around the world, and in those facilities
15 a lot has been learned about how people need to be
16 trained and qualified to operate nuclear systems.

17 And what has been learned from that has
18 been put into the Yucca Mountain Review Plan as the
19 criteria for which the NRC will assess DOE's plans for
20 training and qualifying its personnel.

21 Finally, any worker at any nuclear
22 facility has to be trained in the hazards and the
23 handling of radioactive materials. The NRC will
24 assess DOE's program to ensure that the workers and
25 the public are safe in that regard.

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1 Now, when we talk about who would operate
2 a repository, let's talk about how the Yucca Mountain
3 Review Plan would be used to assess how the repository
4 would be operated.

5 There are several aspects of that. If a
6 repository is licensed, and components start to be
7 built and installed at the site, they must all be
8 tested to make sure that they operate properly before
9 any waste, any radioactive waste, is received at the
10 site.

11 That is one aspect of how a repository
12 would be operated. The next one goes beyond that to
13 say once I have these systems, these components, these
14 machines in place, how do I make sure that they
15 continue to operate properly.

16 It is just like your car. You have to do
17 periodic maintenance. The DOE must demonstrate that
18 it has a program for periodic testing of these
19 equipments that are important for safety, and the
20 program has to specify what the limits are, what is
21 acceptable, and what the qualifications are for the
22 people that do the testing, and say what they would do
23 if they find something wrong.

24 Everything that is important to safety at
25 any nuclear facility in the country has to be done

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1 using a formal procedure. The Department of Energy
2 must demonstrate that it will develop adequate
3 procedures for the activities at a repository.

4 And the NRC will evaluate that, and the
5 procedures must include such things as what kind of
6 qualifications are required to do something, and what
7 are the steps, and what tools are required, and what
8 kind of calibrations are required, and what do you do
9 if you find something wrong.

10 All these things DOE must demonstrate and
11 NRC would accept. Next, if there are things that can
12 go wrong at a repository, there must be plans for
13 dealing with them. Emergency plans. Emergency plans
14 are standard at any nuclear facility, and there would
15 have to be one for Yucca Mountain.

16 There are people on the NRC staff whose
17 job it is to assess emergency plans at facilities, and
18 their requirements have been incorporated in the Yucca
19 Mountain Review Plan.

20 A question arises as to whether the area
21 around Yucca Mountain could be used for anything else
22 other than this boat load of waste that the repository
23 is licensed for.

24 That is up to DOE to present, but there is
25 two basic things that DOE must show if it proposes

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1 anything in this area. One is that the waste would be
2 protected from being disturbed, and the second is that
3 the people would be protected.

4 Lastly, building a facility like the
5 repository would be a complex operation. DOE would
6 have to demonstrate that its schedules for
7 construction are safe and appropriate for the various
8 activities that have to go on, and the NRC would do
9 its own assessment of that.

10 Regulations require that DOE keep open an
11 option to retrieve the waste from a repository up
12 until the time that it closes. They have to
13 demonstrate a plan for doing that.

14 The Yucca Mountain Review Plan evaluates
15 the processes that they would use and it also
16 evaluates how they would protect public health and
17 safety during those processes, and ensures that there
18 is an independent review of those plans.

19 The last thing, or the last component of
20 the safety during operations that I want to talk about
21 is the ultimate closure of the repository. The DOE is
22 required now to look into the future and see what it
23 can do in the design of a repository that would
24 facilitate the eventual dismantlement of a surface
25 facility and decontamination.

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1 The NRC will review those plans and ensure
2 that they can be done in a way that minimizes
3 radiation exposures to workers and the public. In
4 summary, I have described a number of things that
5 would be required for DOE to demonstrate that it is
6 operating a repository safely up until the top of
7 permanent closure.

8 The Yucca Mountain Review Plan examines
9 each of these areas, and provides criteria for what
10 would make them acceptable, and in the process brings
11 into play what has been learned from other similar
12 facilities that are currently in operation. I would
13 be glad to take your questions.

14 MR. CAMERON: Okay. Thank you very much,
15 Pat. I think we have gotten into some of the
16 substance of the review plan, and I would ask you to
17 confine your questions to Pat's presentation.

18 MR. LANDERS: I am wondering about
19 something. Yucca Mountain is part of the Nevada Test
20 Site; is that true?

21 MR. MACKIN: There are other facilities
22 that it is a part of, but part of the land comes from
23 the Nevada Test Site.

24 MR. LANDERS: Okay. So the area is secure
25 there right now, and the Air Force, I assume is

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guarding the area; or do you have civilian security personnel?

8 MR. CAMERON: It's Ralph, right?

13 And 77,000 metric tons is going to take 30
14 years to put in there as I understand; is that true?

15 MR. MACKIN: The actual schedules have not
16 been proposed by DOE.

17 MR. LANDERS: Okay. Thank you.

18 MR. CAMERON: And Ralph, we will come back
19 and address your security question when we get to
20 that. Anybody on this before we -- well, Sally wants
21 to add something, but I want to make sure that no one
22 else has anything else to add.

23 But I really do want to try to keep us on
24 this particular track in this presentation.

MS. BEAMAN: Sylvia Beaman. I donate my

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1 money against the nuclear repository being on the test
2 site, and I have begged and pleaded with whoever it
3 was that needed to be talked to about this scenario.

4 And what I am getting out of this is that
5 I have not been on top of things, and I apologize for
6 my kids' sakes that I have not been on top of it, and
7 thank goodness there are a few in the room who
8 actually are working to do everything they can to not
9 get this.

10 My question is that you are opening or
11 having big shoulders here that -- well, you are like
12 a licensing board that is going to regulate all these
13 things. But you are not just giving me an insurance
14 policy here. I mean, you are risking our lives.

15 So if you make one mistake -- and it is
16 like the Board of Land Surveyors here, or the Board of
17 Contractors. You go there and you complain and you
18 complain. I am not going to live through it to
19 complain.

20 So I can't even comprehend or conceive
21 that we are doing this to the environment. I am just
22 appalled, and I mean, right now, I am nearly breaking
23 into tears. This is just unbelievable.

24 MR. CAMERON: You are right. It is a
25 very, very serious proposition that the NRC has been

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1 tasked with by Congress. Sally, a question for Pat?

2 MS. DEVLIN: Thank you so much, Pat, for
3 talking about the subject of safety in operations, and
4 I of course attend all the NWTRB meetings, and it was
5 wonderful to see all the people being trained to drive
6 the trucks to bring the material to Yucca Mountain.

7 Of course, they won't be around and able
8 to drive trucks by the time that this gets done, if it
9 ever gets done, and so I thought that was a wonderful
10 waste of money. But that is besides the point.

11 You mentioned the chemicals industry. I
12 did a report on transport and chemical accidents for
13 10 years, from 19 -- I think it was 1987 through 1996.
14 At chemical plants in that 10 years, and that is 3,650
15 days, they had over 150,000 accidents at the plants.

16 And in transports, they had over 250,000
17 on our roads. So I thought that was a good number to
18 work from, and you were saying that the chemical
19 plants are so safe. Anything but. We have had how
20 many a day. I don't have enough fingers to figure
21 that out, but you can.

22 The other thing that we are talking about
23 is that under the law Yucca Mountain must remain open
24 for a hundred years, and many times I have heard 300
25 years.

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1 And it was unfortunate that you were not
2 with us on September 11th, which was a dreadful day at
3 the Nuclear Waste Technical Review Board, because this
4 came up.

5 And my dear friend, Avon Luke, who is
6 running the licensing for DOE, and I would be sitting
7 on top of not one, but two, Yucca Mountains, because
8 they have enough waste for two, for a hundred to 300
9 years playing gin rummy, because there is no funding
10 for stewardship.

11 So it is a terrible proposition, and I
12 think the other thing that you should bring up to the
13 public is that any kind of accidents, and I am talking
14 about with workers at the site if it is approved and
15 so on, how much money is in Price-Anderson?

16 When I started it was \$10 million, and the
17 last report I saw, it was \$8.6 billion. So we are
18 talking money, and we are talking Presidential edicts,
19 and Clinton said you can't do anything, and the value
20 of the land is over a hundred-million, and of course
21 nobody listens to these things.

22 And it is very difficult for me to sit
23 here and say that you are going to have well-trained
24 and qualified personnel when by the time that this
25 happens these people will have retired, and I say that

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1 to you, Janet.

2 If you have been with this group for 13
3 years, and another 7 years, and so that is 20 years,
4 and when are you going to retire? Everybody that I
5 know who works for the government retires after 20 to
6 25 years.

7 So you will be gone, and this bothers me,
8 and I am just saying when he is talking about the
9 training, it is a useless training. It is a useless
10 spending of money when these people aren't going to be
11 there.

12 And probably if everything was done
13 robotically, and this, and that, and the next thing,
14 well, you could fix the robots.

15 MR. MACKIN: I would just say one thing.
16 People at facilities of all kinds, including nuclear
17 facilities, come to work, and they work their careers,
18 and they go to other jobs, and they retire, and new
19 people come in.

20 And the training programs that are
21 established for any affected facility recognize that,
22 and they always make sure that the new people are
23 being trained at the jobs as the older people are
24 moving on to different jobs or leaving the
25 organization.

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1 The training is met to be a continuous
2 thing over the life of a facility such as a
3 repository. It is not just today or next week.

4 MR. CAMERON: Okay. Thank you, Pat. We
5 are going to go to Kalynda for a couple of questions
6 for you, Pat. Kalynda.

7 MS. TILGES: Actually, three, and they do
8 all pertain to your presentation. You were talking
9 about plans for a cleanup, and permanent closure.
10 DOE's flexible design doesn't really talk about
11 permanent closure.

12 In fact, in a face to face meeting a
13 couple of years ago with Ivan Itkin from OCRWM
14 (phonetic), he told us that they would never close
15 Yucca Mountain because one day there are going to need
16 to go back in there and get that waste for energy
17 needs.

18 Of course, two weeks later, he did a
19 presentation to Congress saying that it was absolutely
20 permanent deep geologic disposal, and again two weeks
21 later he did a presentation to the Technical Review
22 Board saying that it had to be a flexible design
23 because they found different things all the time.

24 MR. MACKIN: What would be required in the
25 license application to construct and operate a

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1 repository would be the design features and the plans
2 that DOE would have for dismantling and
3 decontaminating the surface.

4 So it is required, and they have to have
5 it, and the NRC would evaluate it to make sure that it
6 can be done safely. That's all I can say. That has
7 to be in the license application. The regulation
8 requires it.

9 MS. TILGES: Okay. My second question is
10 -- and this came up during slide number -- oh, boy, my
11 eyes are getting bad even with the glasses
12 -- 36, talking about identifies possible hazards,
13 events, and sequences of events.

14 I assume that the NRC is aware that --
15 well, the technical review board, the last one that
16 was held in Pahrump, was practically closed down due
17 to the anger of Chairman Cohen at the Department of
18 Energy, who once again was probability weighting its
19 figures without remarking that the figures had been
20 probability weighted or by what factor, even though
21 they have been told time and time again that they
22 could not do that.

23 And this deals with the igneous events,
24 and what they did is that they calculated the doses,
25 the mean doses of an igneous volcanic event, and they

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1 presented it up on the board like that is what the
2 figures were, and they looked really low, and that was
3 because they were probability weighted.

4 So I hope that the NRC is aware that the
5 Department of Energy has a very bad habit of doing
6 this and not letting anyone know that they are
7 probability weighted. They are fudging their figures.

8 MR. CAMERON: I think -- and I don't want
9 to preempt you, but I believe that Tim will be going
10 into that issue during this, and so let's go into that
11 then. And let's go on to what your third question is.

12 MS. TILGES: My third question deals with
13 or talks about training and qualification of personnel
14 at the DOE to deal with this. I wondered what you are
15 going to consider qualifications, because at this
16 point -- well, are you going to require that these
17 people be licensed?

18 At this point, DOE engineers are not
19 required to be licensed like anyone in the civilian
20 world would be. Therefore, there is no one to fall
21 back on, except for this large self-regulating agency.

22 MR. MACKIN: Well, I would have to say
23 that there are accepted as standard ways of training
24 people and qualifying them at nuclear facilities. And
25 that experience is what is written into the Yucca

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1 Mountain Review Plan.

2 It means basically that no system, or
3 component, or machine that is important to safety, can
4 be operated by anyone except the person who is
5 formally qualified to operate that piece of equipment.

6 MS. TILGES: And so in this review plan do
7 you have the criteria as to what would be qualified,
8 and whether they have to be licensed, and just is it
9 laid out just so anybody can understand it, or only -

10 MR. MACKIN: Well, I would have to answer
11 your question with two statements. First of all,
12 where there is an existing NRC guidance that tells
13 what is acceptable, rather than reinvent the wheel, we
14 reference that. Well, what is the second part of your
15 question? I forgot.

16 MR. CAMERON: Well, her question is are
17 there standards that everybody does, training
18 standards, and whether they are referenced or
19 developed anew, are they there for people to see?

20 MR. MACKIN: Yes, but you asked another
21 question, too.

22 MS. TILGES: Are they understandable to
23 everybody?

24 MR. MACKIN: Oh, the reason that I wanted
25 to respond to that is I believe they are, but not all

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1 parts of the Yucca Mountain Review Plan are
2 understandable by everyone. It is a very complex
3 document that looks at really complex issues.

4 It is meant for use to a large extent by
5 the scientists and engineers that have expertise in
6 this area. So I wouldn't say that everybody can
7 understand all the words in the Yucca Mountain Review
8 Plan. It is complex. Is that fair to say?

9 MR. CAMERON: Well, part of our job is to
10 try to make it as clear as possible. Okay. Let's go
11 to Tim McCartin. Grant, I'm sorry, but we are going
12 to have to move on. Thank you very much, Pat. Tim,
13 Long Term Safety.

14 And, Tim, if you could, you heard
15 Kalynda's question about igneous, and if you could try
16 to pick up on that.

17 MR. MCCARTIN: I am Tim McCartin with the
18 Nuclear Regulatory Commission, and tonight I will
19 address long term safety, and that is the period of
20 time after waste is in place in a potential
21 repository, and long term safety really is what refers
22 to the behavior or the future behavior of the Yucca
23 Mountain repository, and would be within the safety
24 requirements set by both the Environmental Protection
25 Agency and the Nuclear Regulatory Commission.

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1 Tonight as I go through my talk, I really
2 want to address three particular areas. One will be
3 describing the safety requirements for the long term
4 safety.

5 Next, to describe the requirements for how
6 DOE is required to evaluate the safety of a potential
7 repository at Yucca Mountain, and third, how the NRC
8 would review the safety evaluation of the Department
9 of Energy.

10 First, in terms of the requirements for
11 long term safety. There are really four requirements
12 that I am going to talk about. The first three were
13 set by the Environmental Protection Agency.

14 One, a safety standard for individual
15 protection. As Janet alluded to earlier this evening,
16 a separate requirement for the protection of ground
17 water; and thirdly, a standard to judge the safety of
18 the repository if there was an unintentional drilling
19 through the repository, and what we refer to as a
20 human intrusion standard.

21 A fourth requirement is a requirement for
22 multiple barriers. The repository is required to have
23 safety features that are both natural and engineered.
24 That is what we mean by a multiple barrier
25 requirement, and I will discuss that in just a little

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1 bit further.

2 In terms of multiple barriers, when I talk
3 about a engineered barrier, I am referring to a safety
4 function that is provided by something that is man-
5 made. Examples of that would be the waste package and
6 the drip shield.

7 For people that may not be as familiar, a
8 waste package is relatively easily described by the
9 words, and the drip shield is sort of a metal tent if
10 you will over the waste package that is designed to
11 prevent drifts from falling on to the waste package,
12 and hence the name, drip shield.

13 It is shielding the waste package from
14 drips hitting it directly. In terms of the safety
15 features of the site, this is referring to the geology
16 of the site. There are a couple of things to point
17 out.

18 The waste is surrounded by the rocks of
19 Yucca Mountain. These rock layers really preclude any
20 humans from coming into direct contact with the waste.

21 Additionally, any potential releases from
22 the waste packages would have to travel through these
23 same rocks many thousands of feet before there could
24 be any potential contact with human beings.

25 Now, the question is that those are the

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1 safety requirements, and the next question would be
2 how would we expect the Department of Energy, how
3 would we require the Department of Energy to evaluate
4 safety.

5 And we are expecting the Department to
6 conduct a thorough and systematic analysis. The
7 Environmental Protection Agency Standards, as well as
8 the NRC's regulations, refer to a performance
9 assessment as this type of systematic analysis.

10 And that as Pat described in his talk, it
11 answers similar questions that he would say would be
12 asked during the preclosure phase, the operational
13 phase. Basically, what could go wrong, and how likely
14 is it, and what are the consequences.

15 And I would like to describe this
16 performance assessment, this systematic analysis, in
17 a little more detail according to these three
18 questions.

19 First, what could go wrong. Once again,
20 following that, we want a systematic and thorough
21 analysis, and the regulations, as well as the review
22 plan, have required DOE to look at what can go wrong
23 in three categories; features, events, and processes.

24 Features are things that I could see and
25 measure; a fault, a large crack in the rock, and how

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1 wide is the fault, and how long is the fault, are
2 things that I could measure, and these are features of
3 the site.

4 Events are things that happen at a
5 specific instant of time. For example, the volcano
6 that was brought up earlier, and earthquakes, and
7 particular instances of time for a short duration.

8 A third category is processes. Processes,
9 in contrast to events that happen in a very short
10 duration of time, processes are things that might
11 happen gradually over very long time periods.

12 The potential for the dripping of water
13 into the repository, the corrosion of the waste
14 package, are processes that occur over very long time
15 periods very gradually.

16 These three types of things -- features,
17 events, and processes -- are categories that we
18 require the department to look at all three of those
19 categories, and identify what might go wrong.

20 How do these features, events, and
21 processes that might go wrong affect the performance
22 of the barriers, the safety features of the
23 repository.

24 Having identified what can go wrong, the
25 next question is how likely is it. In looking at how

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1 likely something is to occur, one looks at the
2 frequency. How often does it occur.

3 Also, in addition to the frequency, the
4 size or how big something is. For example,
5 earthquakes. Very small earthquakes might occur very
6 frequently, and larger earthquakes occur less
7 frequently.

8 And lastly the location. You might think
9 of dripping into the repository. Well, is it going to
10 drip on all of the waste packages? Is it going to
11 drip on particular locations? So in terms of how
12 likely things are to occur, you need to look at
13 frequency, how big, and the location.

14 Having done that, one gets to the final
15 and the third question, what are the consequences, and
16 this gets to Kalynda's question that I will address.

17 And there are a couple of things that the
18 Department is required to look at. Certainly the
19 safety during normal conditions. Normal conditions
20 are the conditions when the safety functions of the
21 repository are behaving as expected.

22 But they are also required to look at
23 safety during what we call disruptive events, and
24 these features, events and processes that could have
25 a negative effect on the safety features of the

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1 repository.

2 These include large increases of rainfall,
3 and a volcano erupting, and certainly enough to
4 disrupt and effect the functioning of the barriers.
5 In looking at those consequences, we are expecting
6 both in normal conditions, as well as disruptive
7 conditions.

8 All of this -- this performance assessment
9 gives me a backdrop for looking at how will the NRC
10 review that safety evaluation. Initially, you will
11 see in the review plan that we are looking at the
12 multiple barriers.

13 The purpose of the barriers, the safety
14 functions of the barriers, allows the NRC staff to
15 look at what is the Department of Energy relying on
16 with respect to the site and its engineering to keep
17 the repository safe.

18 That gives us a forward look in terms of
19 what are the safety conditions, and we would then look
20 at the features, and events, and processes. How has
21 DOE looked, and what have they put into the things of
22 what could go wrong.

23 We will look at that additionally.
24 Likewise, how likely is it and what are the
25 consequences. You will see in the review plan under

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1 consequences -- and this is where I would like to
2 address Kalynda's question about probability
3 weighting.

4 Both the EPA standard and the NRC
5 regulations require the Department of Energy to weight
6 the consequences by the probability. Additionally,
7 the National Academy of Sciences, when they gave their
8 recommendations for Yucca Mountain standards, they
9 suggested a risk standard.

10 Risk is typically done by the consequences
11 multiplied by the probability, and so that is
12 consistent with the regulation. What you will see in
13 the review plan is consistent with what the TRB was
14 saying to the Department.

15 We want to understand how you got that
16 final calculation, and so we would expect to see your
17 probabilities. We would expect to see your
18 consequences separately.

19 And you will see in the review plan that
20 the Department of Energy -- we want to see how that
21 final curve was arrived at. So we certainly are aware
22 of that, and agree that we need that information.

23 We are not expecting any final number
24 where we can't determine, well, gee, what were the
25 consequences, and what was the probability. We will

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1 go into that and you will see that in the review plan.

2 Along the lines of features, events, and
3 processes, likelihoods and consequences, we are
4 estimating the future behavior of a future repository
5 at Yucca Mountain. Clearly, we will be doing this
6 with scientific models.

7 Once again, Grant Hudlow brought up a very
8 good point. If the NRC was just sitting here waiting
9 for the Department of Energy to deliver an application
10 at our door step, we would not be ready to review that
11 application. I could not agree more. Have we been
12 sitting there? Absolutely not. I was hired in 1981
13 to the Commission to help develop within the Office of
14 Research the performance assessment tools for
15 evaluating geological disposal.

16 And so for those 20 years what has the NRC
17 been doing? Developing those tools and improving
18 those tools. I would estimate if I had -- well, using
19 my memory, which I won't guarantee, but somewhere
20 around '88 or '89, we published our first performance
21 assessment for Yucca Mountain.

22 We have published 2 or 3 since then, and
23 continue to publish our results based on our computer
24 model, and what we tried to look at what we think can
25 go wrong, and what we think is the likelihood of these

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1 things, and what are the consequences.

2 And, yes, we have been evaluating this.

3 This gives us our independent look at Yucca Mountain.

4 We aren't modeling it necessarily the same way as the

5 Department of Energy. We are independent.

6 Along those lines, just a hair too quick,
7 but along those lines in the performance assessment,
8 the Department of Energy has to provide scientific
9 information to support that modeling of the future
10 behavior of the site.

11 We have also looked at the same scientific
12 information, and clearly in a project this complex,
13 there are going to be differences of opinion, in terms
14 of the scientific information and what it supports and
15 what it doesn't support.

16 Our regulations specifically require DOE
17 needs to analyze some of those differences in the
18 scientific information, and what in the regulations
19 are termed alternative models.

20 These are things where they are required
21 to look at that scientific information. Some of the
22 agreements that were brought up earlier, those are
23 related to differences in scientific opinion of what
24 is important. That has to be analyzed.

25 That's really is a picture of how we

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1 intend or what things we will look at, in terms of the
2 review. There is scientific information. If you look
3 at this section of the review plan, 4.2, you will see
4 14 primary areas with many, many pages of the
5 information in the science with respect to the
6 modeling of the Yucca Mountain site, be it the heat,
7 be it moving water, corrosion of the waste package, et
8 cetera.

9 But you will see questions with that
10 scientific information and how we would probe the DOE
11 support. I would like to give you just a very brief
12 example of some of the things that if you go into
13 detail in the review plan you will see.

14 Just with respect to the review of
15 dripping water, what are the kinds of things that you
16 might see in the review plan. There is questions of
17 the reviewing of the present day testing of
18 measurement that DOE currently is conducting tests at
19 the site, and measuring the water there.

20 We would look at what they are measuring,
21 and what they are testing. There are also future
22 climate changes, and how is DOE estimating future
23 climate changes.

24 And in that context, what has been going
25 on. There is also the waste that generates heat.

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1 This heat will have an effect on both the water and
2 the rock. You will see sections of the review plan
3 that talk to how DOE is evaluating the effect of that
4 heat.

5 Long term changes in the drifts or the
6 tunnels. If you are looking at dripping water,
7 currently if one went into the tunnel at Yucca
8 Mountain, it is a relatively smooth surface, nice and
9 cylinderful.

With time that is going to change. Will
rocks fall from the roof, and now it is now a smooth
surface, and is now an irregular surface, and that
could affect dripping.

14 Those are the kinds of things that you
15 will see in the review plan that we want to make sure
16 that DOE has done a thorough and systematic analysis
17 of the types of things that could occur.

22 And hopefully you are going to appreciate
23 that the NRC is going to be looking at all three of
24 those aspects for long term safety. Thank you.

25 MR. CAMERON: Good. Thank you very much.

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1 Tim, and speaking of continuity, Tim has really been
2 there since the beginning on the development of these
3 performance assessments for the repository, and has
4 really done some really great work for us.

5 MR. MCCARTIN: And one thing for Sally.
6 I have to work until 30 years at the NRC, and so I
7 don't get out in 25. Thank you.

8 MR. CAMERON: Now who told you then you
9 could leave after 30?

10 MR. MCCARTIN: Well, I will be eligible.

11 MR. CAMERON: All right. Ralph.

12 MR. LANDEN: I noticed one missing element
13 there, a possible terrorist problem. Have you
14 addressed that?

15 MR. MCCARTIN: Jeff, are you going to get
16 into that?

17 MR. CIOCCO: Well, it depends on the basis
18 of his comments.

19 MR. CAMERON: So do you have something to
20 say in terms of performance assessment and terrorists?

21 MR. MCCARTIN: Well, in terms of the
22 performance assessment, it is not looking at an
23 intentional breach of the repository. Once it is
24 closed, the repository is sealed up below 300 or so
25 meters of rock.

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1 There are also requirements that continue
2 for safeguards, in terms of watching the site and
3 making sure that there isn't any attempt to get into
4 the repository. But once it is completely sealed up,
5 there really isn't any access.

6 But there would be surveillance to make
7 sure that no one is trying to get into the repository.

8 MR. LANDEN: What about during?

9 MR. MCCARTIN: During operations?

10 MR. LANDEN: Yes.

11 MR. MCCARTIN: That is a different aspect,
12 and this was just after it is sealed up, and Jeff will
13 talk about the operational phase.

14 MR. CAMERON: We will get to that for you
15 when Jeff comes up. Questions for Tim about long term
16 performance? Sally.

17 MS. DEVLIN: Tim and I are old friends.
18 I have watched him turn white, just like I did. But
19 I did want to ask you something, and that is the man-
20 made barriers, and the performance assessment and so
21 on.

22 Of course, we thoroughly disagree on that
23 because I don't think there is any way that you could
24 study this, and number one, the size of Yucca Mountain
25 is 25 square miles, and of course it is out on the

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1 test range.

2 All the hanky-panky that DOE has done with
3 Piute Mesa so the public can't go there and do studies
4 again, I thoroughly object to, and now the test range
5 is all Federal. So the public doesn't know.

6 But again we don't know what is going in
7 the mountain. How are you going to test, and I don't
8 hear it. We know that there is 70,000 metric tons of
9 the fuel rods, but we don't know what DoD, the
10 Department of Defense, is putting in, and that stuff
11 is all classified.

12 How in the world can you test 70,000
13 metric tons in any way, shape or form when you don't
14 know what it is, and I thoroughly object to this
15 because this is hiding from the public, and I told you
16 about spent nuclear fuel from Idaho. That is less
17 than a metric ton.

18 Now, if there are two Yucca Mountains,
19 then it is going to be 140,000 metric tons. How do
20 you possibly prepare long term safety on something
21 that is classified, and that the public knows nothing
22 about?

23 And we have discussed this before, and I
24 still have gotten no answers. This is a hundred mile
25 long mine. What does a hundred mile mine look like?

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1 Nobody knows, and nobody understands.

2 These superficial barriers that we have
3 seen all these years, it is the same old stuff. There
4 is no canisters, and there is no plants. There is no
5 this, and there is no that.

6 And it really bothers me because you are
7 talking "Blue Sky" as we said in the brokerage
8 business. And that is what it is and it bothers me
9 terribly.

10 We are asking bona fide questions, and we
11 are getting the same round around from you that we get
12 from DOE. Now answer something about this classified
13 waste if you can. Let me hear something positive.

14 MR. CAMERON: Well, Tim, can you address
15 the general question, too, and not just the classified
16 waste. But how do you factor in the amount of waste
17 into this?

18 MR. MCCARTIN: Well, certainly the
19 Department has to describe to the NRC the type of
20 waste they will be disposing of. Classified
21 information is available to the NRC. There is nothing
22 that can be withheld from the NRC.

23 That is not to say that there are not
24 certain requirements for certain information that will
25 not be made publicly available. I don't know exactly

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1 the rules, in terms of what information will be
2 classified, but be aware that for the NRC's review,
3 the information we need, we get.

4 MR. CAMERON: Okay. Thank you.

5 MR. MCCARTIN: Now, the other aspect of
6 that is that I would have to say that one of the
7 things -- and I know that Grant brought up also about
8 the trucking, and NRC trucks only go so far. I think
9 you should ask any of our licensees.

10 There is an office of inspection and
11 enforcement at NRC for just that reason. We inspect
12 and enforce. So as waste is brought to the site,
13 there will be an estimate of what they are going to
14 get, but they will have to account for it as it
15 arrives at the site.

16 We will be there to inspect, et cetera.
17 So there are other procedures for knowing what goes in
18 to the mountain.

19 MR. CAMERON: Okay. Thank you. Sally, we
20 are going to go over here for a question or comment.

21 MS. ROSE: Tim, at this point, you keep
22 saying, we, we, we. At this point, are you going to
23 live here with me? I live 23 miles from the location.
24 You keep saying we, we, we, and that the NRC is here
25 to basically protect the citizens.

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1 And they are going to regulate, and they
2 are going to get their performance and everything, but
3 you are trying to sell me something that I can't
4 swallow.

5 I mean, I am going to take my PTA button
6 off and I am going to get a gun and stand in front of
7 the trucks. I can't even comprehend that. You can't
8 tell me that 70,000 metric tons -- I mean, is there
9 somewhere else in the United States or the World that
10 has that much storage somewhere? Is there?

11 MR. MCCARTIN: Not currently.

12 MS. BEAMAN: Okay. So we don't even know
13 what this heat thing is going to do or can do, and I
14 am 23 miles, and at that point this stuff could be
15 coming down my highway with my kids and my bus, and me
16 on the road, and this is what I am supposed to
17 swallow.

18 Were you guys the ones that were
19 regulating the test site in the '50s?

20 MR. MCCARTIN: No.

21 MS. BEAMAN: Okay. So we have a new rule.

22 MR. MCCARTIN: One thing. You are right
23 that 70,000 metric tons is not stored anywhere
24 currently. A couple of things. DOE is required to
25 monitor and test during this entire operational phase

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1 and collect information to confirm that things are
2 performing as expected.

3 MS. BEAMAN: But whose standard and what
4 is expected? You are setting the standards?

5 MR. MCCARTIN: They will have described
6 the safety functions of the barriers, and we would be
7 looking at the performance to ensure that it would
8 still perform as expected.

9 MS. BEAMAN: So DOE is setting the
10 standards and you are regulating the standards?

11 MR. MCCARTIN: No, what I am saying is
12 that the standards are the dose limits specified by
13 the EPA in a multiple barrier requirement specified by
14 the NRC. In terms of the current approach, DOE is
15 given flexibility for how they would meet those
16 standards.

17 MS. BEAMAN: Well, we are still living in
18 the '50s here. Yeah, isn't that bloom beautiful. We
19 have Congress, and we have got Republicans who are
20 basically saying, hey, Nevada should step up to the
21 plate and live their nuclear -- you know, their stance
22 in the United States, they are known for this.

23 I have never heard of such a thing, and
24 for me to swallow this -- I mean, you guys have left
25 no State -- or someone has left no States without this

1 stuff not there. I mean, what's left, Wyoming? I
2 don't even know if they have one.

3 Show me which States doesn't have this
4 stuff in it and that's where I guess I'm going. I
5 can't even believe that I am this close to this. We
6 have had family members die from the test site and
7 stuff like this. This I cannot swallow. I cannot.

8 MR. CAMERON: All right. Tim, I don't
9 know if there is anything more that you can say to
10 describe how we will evaluate. Based on our
11 standards, but how we will evaluate this long term
12 performance that should give any more assurance.

13 MR. MCCARTIN: Well, there is that
14 performance confirmation period during which DOE, like
15 I said, is prepared to test, and the NRC would be
16 inspecting to see if anything would suggest the
17 repository would not be safe.

18 That's why the retrievability aspect to
19 the design is there, and that if at any time during
20 this period it appears that Yucca Mountain would not
21 be safe, the waste would be retrieved.

22 MS. BEAMAN: So actually the NRC is going
23 to set up their home base here in Pahrump?

24 MR. MCCARTIN: We do now have a small
25 office.

1 MS. BEAMAN: No, I have seen the small
2 office. I am saying if they are actually going to
3 regulate it, then you come as close as you can be, and
4 the main office needs to be here. So that we, we, we,
5 we, we, then we are going down with we then.

6 MR. MCCARTIN: I can't say how many people
7 would actually located in this area, but there would
8 be what we call on-site inspectors that live in the
9 community.

10 MR. CAMERON: One final point with Grant,
11 and then we are going to go on to security, okay?
12 Grant.

13 MR. HUDLOW: Grant Ludlow again. I don't
14 hear anything about microbic invasion, corrosion, and
15 so forth. We have had some nightmare inflicted on us
16 up at Hadford, where the bacteria ate the ceraconium
17 off of the fuel belts while it was in a pond, and we
18 lately have found bacteria that can take a thousand
19 rads or 50 rads to kill a person outright, for
20 example.

21 And in my experience with bacteria and
22 other microbs, you typically have 150 of them that you
23 have to deal with on any given problem, and they do
24 things that are different, depending on the conditions
25 that come along.

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1 So the only way we have done any
2 meaningful bacteria studies is to actually set the
3 physical system up, and bury things and watch it. As
4 far as I know, there are no computer programs that can
5 even begin to deal with something like that.

6 So I am not hearing that you have that
7 program set up, or you have anybody that is capable of
8 handling something like that.

9 MR. CAMERON: Tim, can you respond to
10 that?

11 MR. MCCARTIN: Well, I can go into a lot
12 of detail into the particulars, but certainly
13 microbial degradation of the waste package would be
14 one of those processes that the department would have
15 to consider and decide how it might affect the
16 performance of the waste package.

17 Also, that performance confirmation
18 program, if it were determined that microbial
19 degradation of the waste package was a very important
20 process, we would expect during that performance
21 confirmation period that the Department would set up
22 tests to try to evaluate whether and to what extent
23 that process would occur.

24 MR. CAMERON: Okay. Thank you very much,
25 Tim. And there were a couple of questions already

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1 about security, and let's go to Jeff Ciocco who is
2 going to talk about security from theft or sabotage.

3 And then we have one final presentation on
4 monitoring, which ties in with some of the performance
5 confirmation that we have heard about. Jeff.

6 MR. CIOCCO: Okay. Thank you. And we
7 will see if we answer the question in the parking lot
8 on security as I go through my presentation, but I
9 think I do cover it though.

10 I am Jeff Ciocco, and I am going to talk
11 about security from theft and sabotage. This is the
12 physical protection program and the material control
13 and accounting program for the Yucca Mountain site.

14 These are two very important programs that
15 the DOE must describe in detail to the NRC to provide
16 us with a high level of confidence that the site will
17 be protected from radiological sabotage, and will
18 prevent theft or diversion of spent nuclear fuel and
19 high level waste.

20 The first program is the physical
21 protection program. It would provide for the safety
22 and security of the operations area. DOE must
23 establish and maintain a physical protection program
24 to assure that the waste operation are not harmful to
25 our national defense and security, and that it would

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1 not pose an unreasonable risk to public health and
2 safety.

3 The physical protection system must have
4 certain capabilities. It must be able to store waste
5 in a protected area, and that is an area enclosed by
6 physical barriers with active controls. It must only
7 allow authorized access into the protected area. It
8 must be able to detect and assess unauthorized
9 activities in the protected area.

10 The system must be capable to provide
11 timely communications to the response team, and that
12 the DOE must be able to manage the security
13 organization effectively.

14 The main elements of the physical
15 protection program include a security organization to
16 manage, control, and implement effectively the
17 physical protection systems. It must contain physical
18 barriers to channel people, vehicles, and materials
19 into the protected area.

20 Another element is that the system must
21 have entry controls to verify and identify persons,
22 vehicles, and materials entering into the protected
23 area.

24 There are certain reporting requirements
25 of safeguards events to the NRC, and finally they must

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1 have response plans with predetermined and structured
2 responses to certain events. The Nuclear Regulatory
3 Commission has ordered a top to bottom review of all
4 physical protection requirements since the September
5 11th terrorist attacks.

6 Once all the data is examined and
7 decisions are made, we will decide if any changes are
8 needed to the physical protection program requirements
9 in our regulations for Yucca Mountain, and that will
10 be followed through in the Yucca Mountain Review Plan.

11 The next very important program in Chapter
12 3 of the Yucca Mountain Review Plan is the material
13 control and accounting program. The material control
14 and accounting program would be designed to protect
15 against, to detect, and to respond to any theft or
16 diversion of spent nuclear fuel or high level waste.

17 The main elements of the program include
18 material balance which must count for nuclear
19 materials that the DOE would be authorized to possess
20 by the NRC.

21 There must be physical inventories made at
22 regular intervals to actually measure the quantity of
23 nuclear materials on site. A record must be kept to
24 document the receipt, inventory, location, disposal,
25 and transfer of nuclear materials.

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1 And finally there must be controls for the
2 material transfers whenever weight is received and
3 moved on site. In conclusion, DOE must submit for
4 approval well-documented and written plans for the
5 physical protection and for the material control and
6 accounting for the Yucca Mountain site.

7 And with that, that concludes my
8 presentation, and I would be happy to entertain any
9 questions that you have.

10 MR. CAMERON: Okay. What chapters are
11 those basically? This is in the review plan isn't it?

12 MR. CIOCCO: It is in the regulations
13 under Part 73.51, and it is also in the Yucca Mountain
14 Review Plan. It is Section 3.3 of the Physical
15 Protection Program, and Section 3.4 is the Material
16 Control and Accounting Program.

17 MR. CAMERON: Okay. So this is
18 specifically in the plan?

19 MR. CIOCCO: Right.

20 MR. CAMERON: Okay. Let's go to Ralph.

21 MR. LANDERS: I am wondering about
22 something. Let's say you have about 15 metric tons in
23 there, and there is a big problem. There was
24 terrorist activity, and you have got to get people out
25 of there, and you have got to find the terrorists.

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1 Number One, what are you going to do with
2 the nuclear fuel that made be dislocated from its
3 location where it is supposed to be. How are people
4 going to be protected, because the heat builds up as
5 you store all this stuff.

6 People are going to be radiated with
7 radioactive material. Is there going to be a hospital
8 nearby, et cetera, et cetera. I mean, all these
9 things should be considered as safety and security
10 issues.

11 You can't just move 50 metric tons and put
12 it somewhere else. Where are you going to put it?

13 MR. CIOCCO: Well, all these things are
14 considered whenever the NRC's experts publish its
15 regulations, and in what the experts' call design
16 basis threats.

17 And that is what really establishes the
18 capabilities of the system to store the waste in a
19 protected area, to have isolation zones, to have
20 physical barriers, intrusion detection systems, locks.
21 You know, control locking systems.

22 So everything should be in place, and the
23 goal is to protect this exact kind of event from
24 happening. And the NRC is doing a top to bottom
25 review to make sure that those regulations are in line

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1 with events that have happened since September 11th.

2 MR. CAMERON: And are there contingency
3 plans such as Ralph was referring to about if
4 something did happen?

5 MR. CIOCCO: There are specific
6 contingency plans that the Department of Energy must
7 apply to the NRC in these events, with predetermined
8 responses to these types of events, exactly.

9 MR. CAMERON: Okay. Kalynda.

10 MS. TILGES: Kalynda Tilges, Citizen
11 Alert. Without looking and having a chance to look at
12 that, Yucca Mountain is just actually a couple of
13 seconds off of the flight paths from the Nellis Test
14 Range, and bombs have been known to go astray.

15 Has that been taken into consideration in
16 the safety standards?

17 MR. CIOCCO: I think that is really more
18 an element of the -- well, with Pat Mackin, but in the
19 pre-closure safety analysis, they looked at the
20 initiating events, and if it happens at the site
21 during operations.

22 MR. CAMERON: Pat, do you want to speak on
23 the record for us here?

24 MR. MACKIN: Pat Mackin from the Center
25 for Nuclear Waste Regulatory Analysis. Those kinds of

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1 things are part of the examination of what could
2 happen at a repository.

3 And DOE will have to demonstrate that the
4 repository can be safely operated considering the
5 possibility of aircraft crashes, bomb crashes, and
6 their results, yes.

7 If that were not in DOE's safety analysis
8 that would not be acceptable. They will have to
9 consider that.

10 MR. CAMERON: Thank you very much, Pat.
11 I see a familiar face on here. All right. Grant.

12 MR. HUDLOW: Grant Hudlow again. We are
13 talking about trying to keep track of or protect
14 something that in this country we have demonstrated
15 that we can't possibly protect if somebody wants it.

16 We have right now 2-1/2 million crimes
17 every year that are prevented by a homeowner or a
18 businessman with a gun in his hand. The police are
19 totally overwhelmed from the effect of primarily drugs
20 and bad schools, and on, and on, and on.

21 And 9/11 should have been caught as we
22 find out because those were foreigners doing things
23 that raised a lot of red flags. If Americans for some
24 reason or another got angry enough to do that, we
25 would have absolutely no chance at doing anything

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1 about it.

2 Just, for example, I don't know whether
3 you have read the New Yorker on the Uni Bomber. If
4 you read that, it will send chills up and down your
5 spine. Everybody that went to college was trained
6 just like he was.

7 For some reason or another, he got out of
8 control and quit paying attention to building our
9 nation like the rest of us are interested in, and
10 building a community and so forth, and went crazy.

11 All of this stuff -- I mean, we have had
12 things right here in Nye County. We have a small
13 repository up near Beatty. They checked everything
14 that came in, and they finally had to quit that
15 because the people that were checking things stole
16 stuff and took it home.

17 They killed a County Commissioner because
18 he had a big pile of stuff around. Then when they
19 found out that all of this material was radioactive
20 and it was illegal to have, they took it out and threw
21 it in the desert. So we had to go out there and find
22 it and gather it up.

23 The test site does not allow anybody to
24 check anything on the way in because they don't want
25 that to happen. The test site, when they bury

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1 something and throw it in a hole, or a mine-shaft or
2 whatever, their records are such that if you want to
3 go retrieve it, which we are now interested in
4 retrieving all that stuff, you have to go back to the
5 oldtimers and their memory, to remember where they put
6 it.

7 This is not an industry that you are
8 dealing with. This is a zoo.

9 MR. CAMERON: Okay. Thank you for that
10 comment, Grant.

11 MS. DEVLIN: I know that none of you were
12 old enough to remember the '92 (sic) low ground
13 testing, and the tests were stopped when six Belgians
14 walked up to the test site where they were doing the
15 underground testing, and this was in 1992 before they
16 stopped it.

17 And they just walked on to the site and of
18 course it stopped the explosion, but where they came
19 from and how they got on the test site, and so on, who
20 knows.

21 There are all kinds of things in the
22 ground that are probably never looked at -- and let's
23 put it this way -- anywhere in this 1,270 square mile
24 area. It is enormous.

25 So that many times many people have gotten

1 over the fence, or whatever you want to call it. It
2 is a very easy to get through fence. And then these
3 so-called protection things in this enormous area
4 don't function.

5 I think the worst case scenario, and I say
6 it again is with DOE at the test site is that they are
7 unaccountable for anything that goes into the test
8 site.

9 They have never had measuring of
10 equipment. We get paid as the affected counties, and
11 we are going to get \$145,000 this year, and Ismarelda
12 will get \$145,000. This is for every cubic foot that
13 is put at the test site, we get 50 cents.

14 So that is a million-eight a year. Now,
15 what you are saying is that we get paid for this stuff
16 at the test site that is mostly low level or mixed
17 waves, but we would get no funding whatsoever under
18 the Nuclear Regulatory Act for anything that goes in,
19 that 70,000 metric tons or the 7,000 DoD stuff.

20 So it really bothers me because there is
21 no accountability at the test site, and as Grant said,
22 from 1952 to 1982 at the EPA farm, where they had 25
23 posting cows and every time they get a shot, they took
24 them out. And they came back and killed them at the
25 laboratories and so on, and then experimented.

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1 Well, where were they buried, and I cannot
2 find out, and I have taken it to the Department of
3 Justice, and of course they had to bury all the
4 manure. Now where did that go?

5 So this gives you an idea of why we don't
6 have very much confidence in DOE or the NRC, or any of
7 you agencies, because you are unaccountable.

8 MR. CIOCCO: Well, I can't really comment
9 on DOE's security system. They have their own design
10 basis, but what I can tell you is that we have pre-
11 regulation for the physical protection program, and
12 for the material control and accounting program.

13 And DOE is required to submit well written
14 plans, and they must be approved by the NRC, and once
15 they are implemented, they will be inspected by the
16 NRC to ensure that they are effective. So that is our
17 plan.

18 MR. CAMERON: Let me get back to that. I
19 think the implication of what you are saying pretty
20 clearly is that aside from what DOE does in its self-
21 regulating, we are overseeing this and looking at it.

22 MR. CIOCCO: Right.

23 MR. CAMERON: And this gentleman over here
24 has not had a chance to say anything, and let's go to
25 him. And then there is a couple of other things to

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1 clear up, but we really need to get our last presenter
2 on so we can try to get everybody out of here at a
3 reasonable time. Yes, sir, can you tell us your name,
4 please?

5 MR. WRENN: I am a recently retired
6 professor Ed Wrenn, physicist and radiobiologist. I
7 have a question about how much radioactivity is
8 actually going to go into the hole. Would you
9 envision that the DOE will propose to have a measuring
10 system so that each shipment that goes through a
11 portal somewhere will be evaluated with
12 radioprotection estimates that you can tell you the
13 gamma emitters in the system, as opposed to relying on
14 a piece of paper that says this has 7/10s of a
15 megaCurie.

16 MR. CIOCCO: That is a requirement, the
17 screening of materials that comes on-site, and that is
18 required.

19 MR. WRENN: So it will be measured prior
20 to placement?

21 MR. CIOCCO: We check the packages that
22 arrive on site.

23 MR. CAMERON: Thank you, Professor Wrenn.
24 One thing that I want to clear up on a question out
25 here is that the Yucca Mountain Review Plan, what is

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1 the relationship of the Yucca Mountain Review Plan to
2 transportation?

3 I think that perhaps Janet said something
4 at the very beginning of that. Could you just clarify
5 that?

6 MR. CIOCCO: Sure. The scope of the
7 transportation issues is not excluded in the Yucca
8 Mountain Review Plan. The Yucca Mountain Review Plan
9 assesses the safety of the operations and of the
10 disposal and the long term safety of the site.

11 It assesses that once material is received
12 on-site, transportation issues are jointly regulated
13 by the NRC under separate regulations, and under
14 several agencies of the Department of Transportation.
15 So, no, it is not included in the Yucca Mountain
16 Review Plan.

17 MR. CAMERON: Which doesn't mean that it
18 isn't regulated.

19 MR. CIOCCO: It is certainly regulated by
20 the NRC.

21 MR. CAMERON: Let me do a couple of
22 introductions. Chet Poslusny is our transportation
23 expert. We are not going to have time to go into
24 transportation tonight since it is outside the scope
25 of the review plan.

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1 But please talk to Chet about those
2 issues, and he can give a little capsule for you and
3 where to get further information. Kalynda, did you
4 want to say some more about that?

5 MS. TILGES: Well, what you just said just
6 raised some issues, because in one of the most recent
7 of the many different DOE plans so far, they are
8 talking about fuel blending, which means right on the
9 surface of the facility that they will be unpacking
10 castes and repacking them
11 casts, and repacking them, and all of that. So who
12 has regulation over the safety of that? That is sort
13 of a gray area.

14 MR. CIOCCO: I don't think it is a gray
15 area. That is the Nuclear Regulatory Commission.
16 That is in the pre-closure safety analysis.

17 MR. CAMERON: And that is what Pat Mackin
18 was talking about earlier.

19 MR. CIOCCO: Absolutely, and the site
20 regulations of the NRC's.

21 MR. CAMERON: Let me introduce Bob Latta.
22 We were talking about our on-site representatives.
23 Bob is one of them, and he is here. And Vivian is
24 also with our on-site reps office, and she is right
25 there. But that is our presence now.

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4 MS. BEAMAN: Yes. I have asked for a
5 master plan for our Town of Pahrump at this point, and
6 I don't think we have one. I know we don't. I can't
7 find one, if there is a master plan.

8 So our tires are falling off our fire
9 trucks and I think they are sharing the Haz Mat suits.
10 So do I have to actually put one in my child's back
11 pack? I mean, I don't understand. If an accident
12 happens -- my husband and all my family is in
13 emergency services.

14 So they are going to be the first ones who
15 are going to be on the site. It is not going to be
16 the NRC. So what plan do we have for emergency
17 services or Haz Mat in regard to these issues?

18 MR. CAMERON: I would -- I guess, although
19 we can't get into it here, and I don't know if anybody
20 represents the county wants to talk about what their
21 preparation is.

22 But I think as far as I understand it that
23 the emergency responders are local government-based,
24 Chet? Let me just get him on here. This is Chet
25 Poslusny.

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1 MR. POSLUSNY: Initially the local and
2 then the State responders. The Federal Government,
3 and DOE, has a piece of that, too. And DOE is
4 supposed to provide funding to establish capabilities
5 throughout the country, both at the State level and at
6 the Native-American tribes. That money is coming and
7 it is not here yet clearly.

8 MR. CAMERON: And talk with Chet if you
9 need further information. Grant.

10 MR. HUDLOW: I just wanted to add to what
11 the professor said over there; 7/10s of a megacurie in
12 English is the fallout from several Hiroshima bombs in
13 each one of those fuel rods.

14 MR. CAMERON: All right. And I don't want
15 to start a debate with the professor. You guys can do
16 that after the meeting. I think we are going to go to
17 monitoring, and that is our last presentation. We
18 will see if there are any questions and then we will
19 close. Pat.

20 MR. MACKIN: Thank you. Pat Mackin again
21 to preclude the presentations tonight. Earlier, I
22 talked about how the NRC would do an independent
23 assessment of safety during construction and
24 operations.

25 Tim McCartin talked about the same thing

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1 for the period after closure. Well, that is not
2 enough. There must be a way -- DOE must present plans
3 for how it will on a continuing basis give competence
4 that the repository would continue to be built and
5 operated safely. And we put that under the phrase of
6 monitoring.

7 And I am going to discuss three aspects of
8 monitoring that DOE must include in its license
9 application, and that we address in the Yucca Mountain
10 Review Plan.

11 But first what Tim McCartin talked about
12 already, which is the performance confirmation
13 program. The performance confirmation program is how
14 you measure what is going on both with the geologic,
15 the earth systems, and with the man-made system.

16 Second, is what you would do about any
17 unexpected questions that arose during the repository
18 construction or operation. And, third, is how are we
19 going to be convinced that the information that DOE is
20 using to construct and operate the site is reliable.

21 All three of these work together to help
22 give a picture of whether the repository would be
23 safely operated. I am going to expand a little bit on
24 what Tim McCartin said about performance confirmation.

25 First, what it is. It is the test, the

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1 measurements, the experiments, that DOE is required by
2 regulations from now until the repository is closed to
3 show that it is functioning the way DOE said it would
4 in its safety analysis.

5 We do it for a couple of reasons. One is
6 that Tim McCartin mentioned that DOE has to
7 demonstrate through a performance assessment a
8 systematic assessment that the repository would be
9 safe for the long term.

10 During the period of operations DOE will
11 continue to gather information under its performance
12 confirmation program that will be fed into a
13 performance assessment that would be done before a
14 repository would be closed to show that it would still
15 with all that had been learned during operations, it
16 would still operate safely for the long term.

17 And finally I discussed earlier that DOE
18 must preserve the capability to retrieve the waste if
19 something goes wrong. Well, the way that you might
20 know that something went wrong is through the
21 performance confirmation program.

22 Okay. It covers almost everything that
23 goes on or would go on in a repository. It looks at
24 the geology, and the earth's systems. It measures how
25 they are performing.

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1 It also tests design of components, such
2 as if a repository were to be closed, shafts, the bore
3 holes, would all have to be sealed in a way that would
4 keep water from getting into the waste packages.

5 The regulations require DOE to establish
6 a program to test this kind of thing. And finally the
7 waste packages themselves, obviously a key component
8 of any repository, and have to be specifically
9 examined under the performance confirmation program.

10 And finally DOE must have established
11 procedures for informing the involved parties of the
12 results of this performance confirmation program. And
13 they are examined through the Yucca Mountain Review
14 Plan.

15 This topic of safety questions is kind of
16 a difficult one to explain. The NRC won't grant the
17 DOE a license to construct and operate a repository
18 unless it is safe.

19 But the regulations not only for this
20 program, but for other NRC programs, recognize that
21 things might happen unexpectedly, and something could
22 come up that was not expected.

23 It is only reasonable to plan for that,
24 and so what does DOE have to do if any such questions
25 arise, and there aren't any right now, and there could

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1 not be any at the time of licensing. They would have
2 to arise after the fact.

3 But the first thing that DOE would have to
4 be able to do is to describe and identify these
5 things, and to describe and identify them in a way
6 that scientists, and engineers, and experts that don't
7 work for DOE can understand it.

8 Next, DOE would have to provide a program
9 for resolving the questions. Again, that program
10 would have to be understood, and evaluated, and
11 acceptable to experts outside of DOE.

12 There has got to be a schedule for
13 resolving any such questions that doesn't interfere
14 with what might already be going on at the repository,
15 or else what is already going on would have to stop.

16 Next, it is possible that some question
17 would arise that would make it so that the way things
18 were being done at a repository would have to be
19 changed until the question was answered.

20 And lastly and most importantly, is a
21 decision that if any such questions arise whether it
22 is safe to continue what is going on at a repository.
23 DOE would have to demonstrate that, and the NRC would
24 independently have to confirm it.

25 The final piece of what we are calling

1 monitoring is how do you verify that the information
2 is reliable and accurate, a quality assurance program.
3 It has got three main things that the NRC will be
4 looking at.

5 One is that it has to cover everything
6 that is important to safety. Secondly, it has got to
7 look at all the aspects. For example, if a geologist
8 was going to take a measurement, we would have to be
9 convinced that he would use the appropriate measuring
10 device.

11 That it was calibrated, and that he used
12 the procedure that was right for what he was doing,
13 and that he himself was qualified. That any
14 calculations that he did were accurate, and all these
15 things would have to be documented in a way that they
16 can be examined.

17 And lastly those people who have
18 responsibilities for this quality assurance program
19 have to be free to make the calls on whether things
20 are being done right or not without fear of losing
21 their jobs.

22 And these are aspects of a quality
23 assurance program that rounds out this question of how
24 you monitor what is going on in a repository. And in
25 conclusion these three aspects of continuous

1 repository operations need to be sufficient to show
2 that a repository could continue to be constructed and
3 operated properly if it were licensed.

4 That ends my presentation and I would be
5 glad to take your questions.

6 MR. CAMERON: Performance confirmation
7 issues.

8 MS. DEVLIN: What you haven't said, and
9 not one word, any of you, is about money, and this
10 really disgusts me, because we are the taxpayers
11 paying for this.

12 And it bothers me because I keep talking
13 about the canisters, and half-a-million a piece, and
14 this and that, and the next thing, and they haven't
15 improved, and bugs are going to eat them up.

16 And I am saying the same thing about this.
17 You are talking about digging a hundred mile long
18 tunnel, and you are talking about 3,800 workers, and
19 no hospital, and no this, and no that. No Price
20 Anderson. We don't know where everything is.

21 And you are talking as I said Blue Sky,
22 and I wanted the public to know this. How much is
23 this going to cost for all this stuff. The original
24 number that I got from the Congressional Report in '94
25 was \$25 billion for the first repository.

1 I am not talking about canisters. It is
2 just for the first repository, and \$35 billion for the
3 second repository. Now, why isn't the NRC and DOE and
4 so on talking about these things? You are going to
5 have weigh this stuff and where is all this money
6 coming from?

7 MR. CAMERON: Okay. Sally, there has been
8 enough detail on this. Let me see if there is any
9 performance confirmation questions. Any questions on
10 performance confirmation? Did you want to add
11 something on the cost issue, Janet?

12 DR. KOTRA: I just wanted to correct a
13 mis-impression that the taxpayers are paying for this.
14 The consumers of nuclear generated electricity are
15 paying for the cost of this program. This is a matter
16 of public record, and the law that rate payers and
17 facilities have to collect a certain fraction of every
18 kilowatt that is generated by nuclear utilities. And
19 this money goes into the nuclear waste fund.

20 And a portion of that nuclear waste fund
21 goes to pay for the salaries of all the nuclear
22 regulatory commission staff that are present here
23 tonight.

24 So this is certainly -- I live in a State
25 where roughly 30 percent of the energy comes from

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1 nuclear generated power, and my power bill is higher
2 to pay for this program.

3 MR. CAMERON: Thank you for clarifying
4 that, Janet. Yes, Ma'am?

5 MS. HARDINA: Donna Hardina. Is there
6 somebody continually on-site to monitor the program,
7 and what goes on at Yucca Mountain or will happen as
8 far as how it is operated and run, and all that, from
9 your agency?

10 MR. MACKIN: Yes. The answer to that is
11 yes. Mr. Bob Latta is currently one of two full-time
12 on-site representatives, and that program will
13 continue through the lifetime of the repository.

14 And as I think Tim mentioned earlier, I
15 don't know how many people will eventually from the
16 NRC be full time on-site representatives. But there
17 will be as part of the normal --

18 MS. HARDINA: On site at all times?

19 MR. MACKIN: Yes.

20 MS. HARDINA: Thank you. You have
21 answered my question.

22 MR. CAMERON: All right. Mal Murphy.

23 MR. MURPHY: I don't want to shock too
24 many people in the room by agreeing with Sally Devlin,
25 but she did make a point which is an excellent one, I

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1 think. Sally, Nye County has done a very
2 comprehensive study of what we call the total system
3 lifecycle costs.

4 And a report on the TSLCC I think is
5 posted on the Nye County website. I think
6 NyeCounty.com. And we concluded some time ago that
7 the nuclear waste plan, which incidentally is
8 supplemented by taxpayer money, Janet, to account for
9 the Defense waste that goes into the repository.

10 And so all the taxpayers in this room are
11 helping to pay for this repository. But the Nuclear
12 Waste Fund is insufficient in Nye County's judgment to
13 pay for the total system costs of the repository.

14 And it has always been a concern of Nye
15 County in the conduct of our oversight program that
16 one of the things to get to the point that I am
17 supposed to talk about, Chip, one of the areas where
18 the government might cut corners when the Nuclear
19 Waste Fund starts to become insufficient is a
20 performance confirmation program after the repository
21 is constructed and begins to operate.

22 And that is a concern of my colleagues,
23 and it will probably continue to be a concern of ours
24 through the NRC licensing process. But it is an
25 excellent point, and it is one that we all should keep

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1 in mind, but on the other hand, there is no ready
2 answer to that problem.

3 I mean, Congress has since 1789, has
4 adopted programs that require long term continuous
5 funding, and somehow the country has managed to find
6 a way to do that.

7 And they are asking us to extend our faith
8 in that area again in this instance. But it is a
9 concern of ours, and it is a concern that Nye County
10 will continue to watch and assert our interests very
11 closely.

12 MR. CAMERON: Thank you, Mal, for tying
13 those points together. Kalynda.

14 MS. TILGES: And there is also the fact
15 that the taxpayers do pay for the military portion of
16 the waste that is going in there. And also the
17 upgrades that have to be done to all the
18 infrastructure for transporting, none of that is
19 coming out of the waste fund as far as I know, because
20 the casts are too heavy, and above the legal weight
21 limit to be carried on the roads.

22 And the crane structure is going to have
23 to be rebuilt, too, and my question -- and these are
24 just piggyback questions to what Mal had to say, and
25 what Sally said.

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1 But the performance confirmation program.
2 I would like to know what your plan is if something
3 goes wrong, and DOE, shall we say -- and I know that
4 this is really hard to conceive of, but that DOE may
5 not tell the truth, and something goes wrong, and a
6 bunch of people die. What happens? Do they get a
7 slap?

8 MR. MACKIN: It may be appropriate that
9 Janet Schlueter answer this, but that's why the NRC
10 has the authority to stop operations at the
11 repository.

12 MR. CAMERON: And the NRC --

13 MS. TILGES: Is that before or after
14 people die?

15 MR. MACKIN: Well, obviously people would
16 want that to be discovered and taken care of before
17 someone got hurt. And that is certainly the NRC's
18 intent.

19 MR. CAMERON: Does anybody want to say
20 anything from the NRC about the enforcement issue?
21 DOE is subject to the NRC's enforcement jurisdiction
22 for violations of any of the regulations concerning a
23 repository. Kalynda, do you have one more question?

24 MS. TILGES: Yes.

25 MR. CAMERON: And then I think we are

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1 going to wrap up here tonight.

2 MS. TILGES: Just going a little deeper
3 and trying to clarify a question that you had asked.
4 When you say that you will have someone on-site at all
5 times, does that mean that there will be an NRC
6 monitor at Yucca Mountain for 24 hours a day, 7 days
7 a week, awake to keep an eye on all of this?

8 MR. CAMERON: You want the person awake?

9 (Laughter.)

10 MR. CAMERON: Bob, I don't know how that
11 would work. I don't know if we have a plan yet for
12 how that is going to work, but maybe you could say
13 something about it.

14 MR. LATTA: My name is Bob Latta, the on-
15 site representative for the Yucca Mountain project.
16 That is a good question, and I thought I was going to
17 have a non-speaking part tonight.

18 But at any rate, there are provisions for
19 monitoring the activities on a continuous basis for 24
20 hours a day, 7 days a week. I don't know if that is
21 practical.

22 Typically, construction activities don't
23 go on 24 hours a day, 7 days a week. Nuclear power
24 plants are typically day shift, and with limited night
25 time activities, and we are there to cover it. I am

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1 one person and I can't be everywhere doing everything.

2 But our purpose is to focus on those
3 systems, structures, and activities that are risk-
4 significant. And I can assure you that is where we
5 will be with our resources. I hope that I answered
6 your question.

7 MS. TILGES: Yes, you did.

8 MR. CAMERON: Thank you very much. Tim,
9 did you want to add something to that?

10 MR. MCCARTIN: Yes. Tim McCartin, NRC
11 Staff. Just one additional thing. Currently as you
12 know, testing is going on at the site, and in addition
13 to the on-site representatives, scientists both at the
14 NRC and at the Center, if there is a test going on
15 that appears to be very important, DOE notifies us,
16 and we send scientists there in that particular
17 discipline to look at the tests, et cetera.

18 And so even today there is -- well, we
19 supplement the on-site representative with other
20 scientists to observe what is going on at Yucca
21 Mountain.

22 MR. CAMERON: Okay. Thank you very much.

23 MS. TILGES: I think we are on two
24 different planes on that. What I am asking or I
25 believe what you asked was that -- well, we are not

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1 talking about construction. We are talking about if
2 and when waste goes in that mountain. Is that what
3 you meant?

4 When waste goes in that mountain will
5 there be one on-site representative keeping an eye on
6 them and it 24 hours a day, seven days a week, because
7 terrorists don't take breaks and neither does nuclear
8 waste.

9 MR. CAMERON: I think that Bob's comments
10 are probably applicable to that, although the plan
11 hasn't been sent. There is going to be an NRC
12 presence now, and there might be more of an NRC
13 presence during construction.

14 And more of an NRC presence during loading
15 of the repository.

16 MR. LATTA: Bob Latta again. That is a
17 good question, and the closest parallel that I can
18 draw is from commercial nuclear power during hot outs
19 at a plant, and there is 24 hour coverage, and during
20 the initial core load there is 24 hour coverage, and
21 during initial operations there is 24 hour coverage
22 until the NRC builds confidence in the capabilities of
23 the utilities to perform their functions.

24 So, yes, that is factored into the
25 process. And once again it is driven by risk

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1 significant activities, and building confidence in the
2 ability of the organization to carry out its
3 functions.

4 MS. TILGES: Considering that this is the
5 first kind of this type of experiment in the world,
6 you don't know what may or may not crop up?

7 MR. CAMERON: We are not getting this on
8 the record.

9 MR. LATTA: Please restate your question
10 for the record and I'll see if I can answer it.

11 MS. TILGES: It was not that clear a
12 question. Kalynda Tilges, Citizen Alert. It was a
13 statement in response to what you just said, Bob, is
14 that until you have confidence.

15 Well, the thing is that if this is a first
16 of its kind experiment in the world, in the universe
17 as far as we know, and you don't know what you can
18 expect and what you can't, so not having someone to
19 monitor this 24/7 from the time it starts until
20 probably the time that hell freezes over as far as we
21 are concerned, is irresponsible.

22 MR. CAMERON: All right. Bob, did you
23 want to add anything else?

24 MR. LATTA: Bob Latta again, NRC on-site
25 rep. You are right to the extent that we would not

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1 know about the geological repository before, but we
2 have extensive experience in handling spent nuclear
3 fuel, and putting that into waste canisters, and
4 transportation, and waste handling buildings are at
5 every operating reactor site.

6 Waste handling buildings do exactly what
7 I am talking about. They store fuel, and they
8 transport it, and they put it in canisters. So to
9 that extent, we have experience. I'm sorry, but I
10 hope that I am answering your question.

11 MS. TILGES: You have.

12 MR. CAMERON: All right. Let's go to this
13 woman for a final comment and then we have to close up
14 for tonight. Yes, Ma'am?

15 MS. HARDINA: Donna Hardina. Now do you
16 ever make unexpected on-site inspections over a period
17 of time that these places are in operation before they
18 close, or during their operation when they are open?

19 MR. LATTA: Bob Latta, NRC. Yes.
20 Oversight inspections is a part of our inspection
21 program at operating reactor sites, and hopefully I
22 suspect that it will be for the Yucca Mountain
23 project.

24 It is just a practice or a part of our
25 oversight of reactor sites and the Yucca Mountain

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1 project.

2 MR. CAMERON: Okay. Thank you. And if
3 you want to explore that further with Bob, let's do
4 that after the meeting. I just want to thank all of
5 you for your patience, and your attention tonight, and
6 your concern, and your comments.

7 And I want to thank the NRC staff and
8 center for an excellent overview of a complex area.
9 And we do have an NRC public meeting feedback form.
10 It is on the table. This helps us to do a better job
11 with these meetings, and if you could give us your
12 comments on that, we would appreciate it.

13 If you want to make any comments tonight
14 on the review plan, we have a yellow sheet back there,
15 and with that, Janet, do you want to say anything?
16 Any final words?

17 MS. SCHLUETER: I will be real brief.
18 Just that I hope that you found it informative, and we
19 appreciate your time, and the time that you have taken
20 to come out tonight, and appreciate any comments that
21 you would be willing to give us. Thank you.

22 MR. CAMERON: Okay. We are adjourned. I
23 want to thank all of you.

24 (Whereupon, the meeting was concluded at
25 9:45 p.m.)