UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Title: NMSS PUBLIC MEETING; PROPOSED REGULATIONS 10 CFR PART 63 AT YUCCA MOUNTAIN

Location: Beatty, Nevada

Date: Thursday, March 25, 1999

Pages: 1 - 122

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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 NMSS PUBLIC MEETING

5 PROPOSED REGULATIONS 10 CFR PART 63

6 HIGH-LEVEL WASTE REPOSITORY AT YUCCA MOUNTAIN

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8

9 BEATTY COMMUNITY CENTER

10 100 Avenue A South

11 Beatty, Nevada

12

13 Thursday, March 25, 1999

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16 The above-entitled public meeting commenced,

17 pursuant to notice, at 7:00 p.m.

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

2 [7:00 p.m.]

3 MR. CAMERON: Good evening, everybody. Welcome to
4 the NRC's public meeting on the NRC's Proposed Rules on the
5 Licensing Standards that the Department of Energy would have
6 to meet before a repository could be developed at Yucca
7 Mountain.

8 My name is Chip Cameron, I'm the Special Counsel
9 for Public Liaison at the NRC and I'm going to serve as your
10 facilitator for the meeting tonight.

11 Tonight you're going to get an opportunity to hear
12 from the NRC about this proposed rule and you're also going
13 to have an opportunity to comment on the proposed licensing
14 standards and also to ask the NRC questions about this
15 proposed standard.

16 We also have a panel of Nevadans with us tonight
17 who are --

18 MS. TREICHEL: And a Californian.

19 MR. CAMERON: I'm sorry, we have a Californian
20 tonight, excuse me, Brad. Nevadans and one Californian who
21 are knowledgeable and concerned about high-level waste
22 issues and they're going to do a few minutes at the
23 beginning of the meeting to sort of set the context for you
24 on some of the issues connected to this proposed rule.

25 And one of the things we wanted to do is not only

1 tell you about the proposed rule, but to make sure that you
2 all know who the government and other players are in this
3 high-level waste business and to know what their different
4 roles and responsibilities are.
5 Now, as the facilitator for the meeting, my
6 general goal is to help all of you have a good effective
7 meeting tonight. But specifically, I want to make sure that
8 everybody who wants to talk has an opportunity to talk
9 tonight.
10 Secondly, I want to make sure that everything
11 that's said up here is clear to you, okay? And so if there
12 are any uncertainties or ambiguities, we'll clarify them for
13 you.
14 And lastly, I want to make sure that we have a
15 civil and relevant and focused meeting. And as I said
16 before, the main focus tonight is the proposed rule that the
17 NRC has recently published, that they'll be talking about.
18 But we realize that Yucca Mountain and high-level waste is
19 an issue of concern to people and there may be things that
20 you want to say that aren't exactly on point on the proposed
21 rule and we'll listen to that.
22 Final point before I get into the ground rules for
23 the meeting. You can also file written comments to the NRC
24 on this proposed rule. We're here tonight to meet with you
25 personally to talk about the proposed rule and any comments

1 that you give us tonight, we'll treat that just as we treat
2 the formal written comments that come in on the proposed
3 rule.
4 Now, in terms of ground rules, once we get done
5 with the NRC presentation, we're going to hear a short
6 perspective from the Department of Energy as the potential
7 licensee for this repository. We're then going to go
8 quickly through the panel and then come out here to hear
9 from you. If you have a statement that you want to make or
10 a question, just raise your hand and I'll call on you and
11 what I'll do is I'll bring you this talking stick, okay,
12 that you can use for a microphone. And if you could just
13 state your name and affiliation, if affiliation is
14 appropriate, so that our transcriber can get that onto the
15 transcript.
16 We're taking a transcript tonight of the meeting
17 so that we'll know what everybody said. When we get back to
18 Washington we can read the transcript. That transcript
19 also, I think, would be available from the NRC if anybody is
20 interested in getting a transcript of the meeting. We may
21 need you to spell your name for us so that she can get the
22 correct spelling down there.
23 I would also ask everybody to just speak one at a
24 time as a courtesy to everyone in the audience so that we
25 can listen to what they're saying and also that will help

1 get a clear transcript if only one person is speaking at a
2 time. I'm not going to set any rigid time limits for people
3 tonight. I hope we can be more flexible than that.
4 But I would ask you to try to be to the point in
5 your comments so that we can give as many people an
6 opportunity to speak as possible and so that we can have a
7 full discussion. And if someone is going on or sort of
8 wandering off a little bit, I may have to try to bring you
9 back and just have you summarize what you're saying.
10 There are a number of other organizations that are
11 not up here tonight that play a role in the Yucca Mountain
12 process and one of them is the Nuclear Waste Technical
13 Review Board. And I want their representative to just
14 introduce himself to you at this point because he has an
15 announcement to make. Go ahead.
16 MR. CARROLL: Yes, I'm Michael Carroll from the
17 Nuclear Waste Review Board and I just want to let all the
18 residents know that we're going to be here for a public
19 meeting on June 30th -- 29th and 30th; that's a Tuesday and
20 Wednesday. Two full days of a public meeting.
21 REPORTER: Could Michael spell his last name.
22 MR. CAMERON: Michael spells his name probably
23 C --
24 MR. CARROLL: Two r's and two l's.
25 MR. CAMERON: But you know what I think, we're not

1 going to do this. We'll go back after the meeting and get
2 spellings, okay. And if they're spelled wrong, they're
3 spelled wrong because I think that's going to sort of get a
4 little bit to awkward for us.
5 There's another advisory committee that operates
6 in this area. It's an NRC advisory committee and it's
7 called the Advisory Committee on Nuclear Waste and I'll let
8 their representative introduce herself to you. And you may
9 want to stand up. Private joke there.
10 MS. GERRING: The Advisory Committee on Nuclear
11 Waste is an oversight body of the Nuclear Regulatory
12 Commission. We also are going to have a meeting in this
13 area this fall and the details haven't been worked out, but
14 we will advertise and we'll keep you posted. But sometime
15 in the September time frame. We hope you will come.
16 MS. DEVLIN: We hope so because we've been
17 ignored.
18 MS. GERRING: Okay. We're seriously considering
19 to run with that good location. Thank you.
20 MR. CAMERON: Okay, thanks. That's Lynn Gerring.
21 And the last, we have numerous NRC staff with us tonight
22 because we want to be able to answer all of your questions.
23 But the last introduction I'd like someone to make is Fraser
24 from the Environment Protection Agency.
25 MR. FELTER: Thank you. Good evening, ladies and

1 gentlemen. I'm Fraser Felter and I'm from Region IX San
2 Francisco for USEPA and I'm here as an observer and listener
3 like many of you. But I wanted to assure you that EPA is
4 very near releasing its proposed standard on this particular
5 matter. I know many of you are anxious and we have been
6 instructed to tell you that we're very close to doing that.
7 Thank you.
8 MR. CAMERON: Okay, that proposed standard and the
9 relationship to the NRC standard will become clear when the
10 NRC goes through their presentation. What I'd like to do
11 now, just real quickly, why don't we just run down here so
12 people know who you are. Steve.
13 MR. BROCOM: My name is Steve Brocom. I'm the
14 acting assistant manager for licensing and regulatory
15 compliance at the Yucca Mountain project.
16 MR. McCARTIN: Tim McCartin with the Nuclear
17 Regulatory Commission.
18 MS. KOTRA: Janet Kotra, Division of Waste
19 Management, Nuclear Regulatory Commission.
20 MR. REAMER: Bill Reamer, Division of Waste
21 Management, Nuclear Regulatory Commission.
22 MR. MURPHY: Mal Murphy. I'm the regulatory and
23 licensing advisor to Nye County. And Chip, I want to invoke
24 the host county's prerogative if I could here and just
25 briefly introduce -- well, for those of you who are Nye

1 County residents, of course you know him. For those of you
2 who aren't, we're privileged to have Jeff Taguchi with us,
3 one of our County Commissioners.
4 Also, in the back of the back of the room, Les
5 Bradshaw, the manager of the Nye County Department of
6 Federal Facilities -- Natural Resources and Federal
7 Facilities and the Project Manager for our nuclear waste
8 project office. And Nick Stellavato our technical on site,
9 geo-technical on site representative.
10 MR. CAMERON: Okay, thanks. Steve, why don't you
11 use -- this is a live one because I think we're getting
12 feedback.
13 MR. FRISHMAN: I'm Steve Frishman and I'm
14 technical policy coordinator for the State of Nevada Nuclear
15 Waste Project Office.
16 MS. TREICHEL: July Treichel, Nevada Nuclear Waste
17 Task Force.
18 MR. METTAM: Brad Mettam, Inyo County, California.
19 I don't need a mic.
20 MR. VASCONI: Bill Vasconi, member of the study
21 committee and the citizen's organization believing that a
22 through and complete scientific study of Yucca Mountain is
23 essential to ensure the health and safety environmental
24 concerns of the people of the state of Nevada. We do
25 believe we should let science decide the future of Nevada

1 Yucca Mountain not politics.

2 MR. CAMERON: Okay, thank you, panel. Can

3 everybody hear back there? Can you hear everybody?

4 MR. SCHANKLE: The last comment was not completely

5 understood.

6 MR. CAMERON: Do you mean you couldn't understand

7 it or you couldn't hear it?

8 MR. SCHANKLE: Couldn't hear it.

9 MR. CAMERON: All right, well, Bill --

10 MR. VASCONI: Again, my name is Bill Vasconi. I'm

11 a member of the study committee which is a Nevada citizen's

12 organization. We believe that a complete, through and

13 scientific study of Yucca Mountain is essential to ensure

14 the safety, the health and the environmental concerns of the

15 people of Nevada and the nation.

16 We also believe that we should let science decide

17 the future of Yucca Mountain not politics. We also believe

18 that we should maximize on the benefits that could be

19 realized to the state of Nevada, the counties, the

20 communities by the scientific and technological expertise

21 that has been developed at that test site over the last

22 four, four and a half decades. Thank you.

23 MR. CAMERON: Okay, thanks, Bill. And we're going

24 to try to keep things lively for you and concise and short

25 so that we can come out and hear what you have to say.

1 We're going to start off with a presentation by two of the
2 staff scientists from the NRC to talk about the proposed
3 rule. And that will be the longest talking-at-you by any
4 one group tonight.
5 So Janet are you going to lead off or -- all
6 right. And Tim is going do your --
7 MS. KOTRA: Right.
8 MR. CAMERON: -- the graphs, okay.
9 MS. KOTRA: Could I sit here?
10 MR. CAMERON: Yes.
11 MS. KOTRA: Thanks, Chip. On behalf of the
12 scientists and engineers at the Nuclear Regulatory
13 Commission that participated in the development of this
14 proposal --
15 MR. CAMERON: Can you hear? I think you're going
16 to have to speak into that because it's just not making it.
17 MS. KOTRA: Okay. On behalf of those of us who
18 participated in drafting the proposal that we're here to
19 speak with you about, I want to welcome you here this
20 evening and thank you for coming out and we are very eager
21 to hear your concerns, to answer questions if you have them
22 and to help you participate in our regulatory process.
23 Before I actually speak to the content of the
24 proposal itself, I want to give just a very short amount of
25 background to clarify who the NRC is in the context of

1 regulating Yucca Mountain and distinguish our role as a
2 player in this from that of two other important players; the
3 Department of Energy with whom you may be much more familiar
4 and the Environmental Protection Agency.
5 I'm going to provide some discussion of the legal
6 requirements, the congressional laws that have brought our
7 agency to the point where we feel it's important at this
8 time to propose regulations for Yucca Mountain and to talk
9 about the multiple decision points that the NRC, as
10 independent regulator, has and where it will use these
11 regulations, once they are final, once we've had a chance to
12 incorporate the comments that we will receive during the
13 public comment period and issue a final rule. And these
14 various decision points we will evaluating and judging, DOE
15 actions, vis-a-vis the repository.
16 I'm hoping that with this background I can then
17 move very quickly to discuss why we're proceeding with these
18 new regulations at this time. I'll talk a little bit about
19 the schedule for the issuance of a final rule after we've
20 received and analyzed comments. And then I'll turn the
21 discussion over to Tim McCartin who's kind enough to turn
22 the slides for me right now. And he'll talk to you about
23 the rule itself, the conceptual approach we used in
24 developing it. The actual -- some of the big-ticket issues
25 within the proposal and throw out some of the issues that we

1 are most eager to hear about.

2 Now, as Chip indicated, we're really eager to hear
3 your views and concerns about the entire proposal. There
4 are copies of it at the back of the room. If you haven't
5 picked one up, I encourage you to do so. It's also
6 available on the World Wide Web. But we're eager to hear
7 your input on all aspects of the proposal, but we're
8 particularly interested in some of the issues that Tim will
9 identify later in the presentation.

10 Next slide. As I indicated and I'm not going to
11 dwell a great deal on it, we have a different role than
12 either the Department of Energy or the Environmental
13 Protection Agency, as the independent regulator, who will
14 decide whether to authorize construction of a repository at
15 Yucca Mountain and may or may not issue a license depending
16 upon our independent evaluation of a license application
17 submitted by the Department if they choose to move forward
18 to develop Yucca Mountain as a repository.

19 As you know, the Department of Energy is
20 responsible for characterizing the site. That effort has
21 been underway for some time now. They are preparing an
22 environmental impact statement. They will make the decision
23 whether to recommend the site for development as a
24 repository to the President. If the decision is in the
25 affirmative to move forward, they will prepare a license

1 application. They will do the design, the construction.
2 They're responsible for operating the repository safely and
3 they're obligated to provide long-term oversight after it is
4 closed if a decision is taken to close it.
5 The Environmental Protection Agency, as was
6 mentioned earlier, is statutorily obligated by the Congress
7 to establish health and safety standards and protection of
8 the environmental standards for Yucca Mountain. And as we
9 heard from the representative from Region IX, I believe it
10 is, those standards are eminent.
11 The Nuclear Regulatory Commission, as the
12 independent regulator, the main reason we're here tonight is
13 to talk about the first responsibility listed there and
14 that's to issue technical criteria for Yucca Mountain. And
15 those criteria ultimately will have to be consistent with
16 final EPA standards. We also have a very extensive
17 obligation to consult with the Department of Energy well in
18 advance of licensing.
19 Now, that role is sometimes misunderstood, but I
20 think if you think about it for a minute, it's pretty
21 reasonable. Because this is a very complicated technical
22 enterprise to characterize a very complex site, to develop
23 the design for a very sophisticated facility and this is not
24 something that we can make an informed judgment on in the
25 time Congress has allowed us if we are not involved in

1 watching and observing how the site is characterized.
2 In fact, Congress gave us an additional job to
3 make comments on the sufficiency of that site
4 characterization prior to the site recommendation. So we
5 have been involved in oversight of this even though we're
6 not a regulator yet. We don't officially become the
7 regulator in a sense until the application has come in. Did
8 I say that correctly, Bill? Okay.
9 We will, as the NRC will make the decision whether
10 to authorize construction of the repository. We will also
11 make a decision about whether to license repository
12 operation, and once the proposed repository has been granted
13 a license, if it is granted a license, we would be the
14 agency responsible for regulating operation and closure of
15 the facility.
16 Next slide. Under two very important acts that
17 control the activities of characterizing Yucca Mountain in
18 its development as a potential repository, the Nuclear Waste
19 Policy Act of 1982 and the Energy Policy Act ten years
20 later. With regard to our responsibilities in developing
21 criteria, the Nuclear Waste Policy Act of 1982 gives us some
22 limited guidance and the two criteria must important in this
23 context are that we have provide for a system of multiple
24 barriers and specify a period during which the waste must be
25 retrievable.

1 By that I mean the Congress recognize that even
2 after the waste would be put in place in a proposed
3 repository, there needs to be some time to evaluate whether
4 the system operates the way we expect it to, the way the
5 Department expects it to. The way the Department has
6 described it in its license application and to allow some
7 opportunity for the national policy to be sure that it
8 really wants this to be a high-level repository for this
9 material.
10 In 1992 the Energy Policy Act developed some
11 additional guidance for the regulator, and both regulators,
12 the Environmental Protection Agency and the Nuclear
13 Regulatory Commission. EPA was directed to develop new
14 standards for the protection of radionuclide releases from
15 Yucca Mountain and those standards have to be health-based.
16 They have to prescribe a maxim annual dose equivalent, and
17 these new standards which shall be issued shortly for
18 comment have to based on and consistent with the findings of
19 the National Academy of Sciences.
20 Now, some of you know, but many of you may not
21 that the National Academy of Science has issued a report --
22 I have a copy of it here, but it is available from EPA. I
23 think EPA has actually the entire text on its Web site. It
24 made recommendations to the EPA and some to us regarding the
25 technical basis for issuing standards for Yucca Mountain.

1 And lastly, the Energy Policy Act also said that these shall
2 be the only such standards for protection against
3 radionuclide releases from Yucca Mountain. With regard to
4 NRC criteria, we were told that we must conform our
5 standards to EPA -- our regulations to the final EPA
6 standards within one year.
7 Next slide. I alluded earlier to the fact that
8 there are multiple decision points where these regulations
9 will be used by the NRC to make judgments about specific DOE
10 actions. When DOE submits a license application, it's not
11 just one decision that the NRC is faced with. NRC will
12 review the license application and make a determination
13 whether to authorize construction. Once construction is
14 complete, the NRC will then evaluate whether the
15 construction conform to the license application and then
16 make a decision whether waste could be received and placed
17 in that facility.
18 The basis for that decision, of course, would have
19 to be reasonable assurance that the regulations, the rules
20 have been complied with and that the public health and
21 safety will be protected. It is going to take a finite
22 period of time for the capacity of the repository to be
23 filled and even after all the waste were to be placed, there
24 is, again, a 50-year retrievability.
25 The NRC may then make a decision to amend the

1 license to allow DOE to close the facility, that doesn't
2 mean that's the end of the application -- or excuse me, the
3 license. There's yet another decision to terminate the
4 license if, in the judgment of the Nuclear Regulatory
5 Commission, that would be appropriate. But all of these
6 decisions involve some aspect of the criteria we're here to
7 discuss tonight.
8 Okay, next slide. Now, here's the question that I
9 mentioned earlier and why this background is important. Why
10 is the NRC choosing to proceed to move forward with these
11 criteria now, put them out for public inspection and for
12 public comment. As I said, we're required to conform our
13 regulations to final EPA standards within one year. It is a
14 very complicated, it's a very involved rule-making. It
15 touches all aspects of the licensing of a proposed
16 repository.
17 And we know that we could not do something of this
18 complexity in a single year. That we wouldn't have the time
19 to allow for appropriate public comment. And we wouldn't
20 have time analyze those comments and make necessary
21 adjustments if we started from ground zero after EPA issued
22 it's final standards. So the Commission determined that it
23 was necessary for the development of both the standards as
24 well as the implementing regulations to proceed in parallel.
25 It just so happens right now that we feel that we're ready

1 to put forward a proposal at this time but we understand EPA
2 will be issuing its proposal very soon as well.
3 Although those final EPA standards are in place,
4 the NAS findings upon which they have to be based, the
5 report I just mentioned earlier, has been available since
6 1995 and we feel very strongly and we've gotten comment to
7 this effect, that it's important that these issues get out
8 in the public domain and that a broad cross section of
9 people are able to provide input to the decision-making
10 process.
11 That's one of the reasons why we're very glad to
12 see you here tonight and as Chip indicated we will listen to
13 the comments that you bring forward, treat them with the
14 same seriousness that we would treat written comments. But
15 if as you go home this evening, you take a copy of the rule
16 and you have additional comments that you want to sent to
17 us, we will welcome those as well. Lastly, I think it's
18 important to stress that we will amend these requirements to
19 confirm to EPA standards as required once they are final.
20 Okay. What have we done to get us to this point
21 so that we could put this proposal out. Immediately after
22 the National Academy recommendations were made public, the
23 technical staff at the Nuclear Regulatory Commission
24 participated as much as possible with the technical staff of
25 EPA. We shared the results of some of our independent

1 calculations. And our objective was to work with EPA to
2 ensure that they were of like mind to produce practical and
3 scientifically demonstrable standards that could be shown,
4 not necessarily to be passed in the vernacular, but that
5 would work in the licensing framework that we have at the
6 NRC. That these would be standards that would bring forth
7 sufficient information that the commissioners in the Nuclear
8 Regulatory Commission would have sufficient information to
9 make a judgment about whether the repository would protect
10 adequately the public health and safety.
11 We have proposed new -- and there's a term here
12 that I just want to take a moment to explain; the
13 risk-informed performance-based regulation. This is
14 consistent with an overall strategy that the Nuclear
15 Regulatory Commission has taken towards it regulations.
16 It's not something that we dreamed up just for Yucca
17 Mountain. We regulate a lot of different types of
18 facilities from nuclear reactors to medical instrumentation,
19 well-logging devices and the like.
20 And we have gained a great deal of experience over
21 the last several decades in quantitative risk assessment.
22 The ability to calculate what is most important to health
23 and safety and this overall philosophy is explained in a
24 policy statement that was issued recently and it applies to
25 all of the regulatory development that we do. I think there

1 are copies of that also available in the back of the room if
2 you're interested.
3 But the only reason that I have it here is to
4 explain that this is not something that we ginned up just
5 for Yucca Mountain. It's consistent with the trend in our
6 agency toward focusing regulations and requirements on those
7 things that are most important to what we care about; namely
8 public health and safety. And not just developing a
9 checklist that has no connection to what our responsibility
10 under the law is.
11 We've proposed, because we don't have the final
12 EPA standards before us at the moment an overall safety
13 objective -- and it's discussed at length in the proposal
14 you have here this evening -- that we believe that it is
15 protective, it's generally consistent with the finding of
16 the National Academy report and it's scientifically
17 demonstrable within NRC's regulatory process.
18 We're now seeking your input and the broad public
19 comment on the soundness of this proposal. And as I said
20 once before or maybe twice before, we'll conform our final
21 standards -- our final regulations to EPA final standards
22 when they're issued.
23 One last slide for me and that's the status.
24 We've put out this proposal on February 22nd, 1999. We're
25 in the middle of the public comment period right now. We're

1 holding public meetings. We had one in Las Vegas Tuesday
2 evening. We're here this evening. Consideration is being
3 given to perhaps holding an additional meeting in Washington
4 but that hasn't made final yet.
5 We're developing a performance-based Yucca
6 Mountain review plan. And this is guidance to our own
7 technical staff, but this will also be made public, made
8 available to the Department of Energy and anyone else who is
9 interested, that will give our staff guidance for reviewing
10 what is going to be a very, very big document; that's the
11 license application. And that review plan will be based on
12 the criteria that we're here to discuss this evening.
13 We'll be incorporating the public comments and we
14 expect to complete our final rule at the staff level so that
15 we can bring it forward to the commissioners who ultimately
16 have to make the decision by late summer or early fall. The
17 public comment period officially ends, at this point, on May
18 10th of 1999.
19 You may notice if you are a discerning reader that
20 the public notice that we have in the back of the room says
21 May 30th, that was a typo on the part of the Government
22 Printing Office. But we have received, in our meeting on
23 Tuesday night, several requests for an extension of that
24 public comment. If there others of you who believe that's
25 appropriate, we want to hear from you as well. And so we're

1 going to take that, that's one thing we know already we're
2 taking back to Washington to reconsider is perhaps extending
3 the public comment period. The addresses, you have in your
4 handouts as to where you can send the comments.
5 And with that, I'd like to turn it over to Tim and
6 have him explain a little bit more about the technical
7 issues in the standards and in the criteria.
8 MR. CAMERON: Thanks, Janet.
9 And I just would point out to you there's coffee
10 back there, okay. If anybody wants coffee just help
11 yourself.
12 MR. McCARTIN: Okay, very briefly I'd like to go
13 over the conceptual approach for the Part 63. There's four
14 aspects to the rule. First and foremost is the repository
15 must include multiple barriers. By multiple barriers we
16 mean one barrier attribute to the engineering, like a waste
17 package, and the other barrier would be something with
18 respect to the natural setting. The attributes of the
19 geologic system to limit water contacting the waste as well
20 when radionuclides potentially leak out of the waster
21 containers, movement through the geological system.
22 Second, as Janet pointed out, a risk-informed
23 performance-based criteria. By that we mean we are setting
24 a limit on the overall performance of the repository in
25 terms of a dose to humans. And that particular -- how we

1 would calculate that then is through a performance
2 assessment where we evaluate those attributes of the
3 repository, both good things and bad things that can happen,
4 to see how the repository would perform relative to that
5 dose or risk standard. And with that, that's the only limit
6 we're placing on the performance of the repository, there
7 aren't any separate additional limits for individual
8 pathways.
9 Second, because of the long time period that we
10 would be evaluating the performance of a repository as we
11 said, the performance objective is in terms of a dose
12 standards. You have to give radionuclides to humans to
13 calculate a dose. Estimating where people might live, what
14 their habits would be, what kind of lifestyles over very,
15 very long time periods is quite speculative.
16 So in the rules you'll notice we have put certain
17 limits on what would be considered in terms of what we call
18 the Critical Group. Those individuals who are mostly likely
19 at the greatest risk from potential releases from a
20 high-level waste repository. And we've set a farming
21 community approximately 12 miles downgradient from Yucca
22 Mountain with dietary habits typical of the current region.
23 The reason we did that are really twofold. One, a
24 farming community tends to get a lot more food from local
25 means. That increases the doses. You would get doses from

1 crops, animal products and potentially contaminated water.
2 So that's one reason. That type of lifestyle would tend to
3 increase your dose so we want to make sure those types of
4 individuals are protected.
5 Why 12 miles from the Yucca Mountain site? In
6 looking at what is typical in most parts of the U.S. in
7 terms of how far will people drill for farming activities,
8 at the 12-mile location, the water table we estimate is
9 approximately, at the time of the rule we estimate
10 approximately 100 meters below ground and we felt that that
11 was pretty much -- people for a farming community would not
12 drill much deeper than that. It certainly is possible to do
13 that, but the economics of farming, the greater you drill
14 becomes more and more difficult, and that's why chose that
15 particular location.
16 And lastly the, as the National Academy of
17 Science, as Janet mentioned, gave us recommendations. Their
18 recommendations for a human intrusion was to evaluate that
19 through a stylized calculation and you'll notice in the rule
20 we have specified that type of calculation.
21 Going into a little bit more detail in terms of
22 exactly what's expected. For the preclosure phase of the
23 repository which is our way of saying the operational period
24 of the repository, when waste is being received and in place
25 into the repository, we have a performance objective that is

1 related to our Part 20 which is what we apply to all
2 operating nuclear facilities for protection of both the
3 workers and the general public.
4 The demonstration, once again getting to the
5 risk-informed performance-base, we expect that the
6 Department of Energy would carry out a systematic rigorous
7 calculation demonstrating the performance of the repository
8 during that operational period to show that it was in the
9 release limits -- or the dose limits of Part 20.
10 Also, there's a requirement for a retrievability
11 period; over 50 years. And finally, an emergency plan is
12 required in the event there is an accident. The Department
13 has to have an emergency plan for how they would treat any
14 type of an accident that could happen during the operational
15 period of the repository.
16 Post-closure criteria. The performance objective,
17 once again, has to include multiple barriers both engineered
18 and natural. The individual dose limit is 25 millirems per
19 year and the compliance period, this, it would be required
20 to comply with that dose limit over the next 10,000 years.
21 The demonstration, once again is done with a
22 performance assessment, a calculation that estimates the
23 releases from the repository and it would also be required
24 to consider natural events such as earthquakes and volcanoes
25 that could happen over this 10,000 year time period.

1 That's pretty much the criteria, the real meat of
2 the criteria. The question is what are we most interested
3 in hearing about and there's really four ways to phrase some
4 of the things we'd like to hear from people tonight or later
5 in the written comments. And number one, the 25 millirem
6 dose limit is being proposed, is that a reasonable criteria?
7 Is it sufficiently protective of the public health and
8 safety for evaluating Yucca Mountain repository?
9 Next, as you noted when I talked about the
10 Critical Group, I was talking about that location and that
11 lifestyle as it related to contaminated water. We believe
12 that the most likely release of radionuclide from a Yucca
13 Mountain repository would be in the groundwater pathway.
14 And if there's some reason people believe another pathway is
15 more likely, we'd also like to hear that. Right now, that
16 Critical Group is based on a groundwater release.
17 Thirdly, in the rule we've put particular limits
18 for the Critical Group for assumptions about lifestyle,
19 dietary habits; does that seem to be reasonable. And
20 lastly, obviously, the Department of Energy has to make a
21 calculation to show compliance with our regulation. We
22 believe we've put things in our regulation that make it
23 clear what the Department is required to do. If it isn't
24 clear what they're required to do, we'd also like to hear
25 that because we certainly -- the Department as well as the

1 public wants to know exactly what's expected in terms of
2 this compliance calculation in demonstrating that the public
3 health and safety is protected.
4 MR. CAMERON: Okay, thanks a lot, Tim.
5 We're going to go through our panel first, very
6 quickly, so that they can put some of these issues into
7 perspective for you. And what I'd like to do to start with
8 Nye County. As Mal pointed out earlier, this is where the
9 repository is so we're going to -- or might be located to go
10 to Nye County.
11 MR. REAMER: What about DOE?
12 MR. CAMERON: Oh, I'm sorry.
13 MR. BROCOM: That's all right. No, that's all
14 right. That's all right.
15 MR. CAMERON: I forgot DOE. How could I do that.
16 Steve Brocom.
17 MR. BROCOM: I thought you were changing the
18 agenda. That's fine. You know, any order would have been
19 fine. I'm going to give a few words on DOE's perspective on
20 the NRC's proposed regulation. We're currently reviewing
21 the rule. We received it about February 22nd. And we're
22 preparing comments. We will probably have, you know, I
23 would say fairly detailed comments when we submit our
24 comments to the NRC on or about May 10th.
25 Let me give some general observations based on our

1 initial look at the rule. We view, DOE views that the
2 risk-informed performance-based nature of the proposed rule
3 to be an appropriate basis to evaluate Yucca Mountain and
4 the basis for licensing. From a technical perspective, we
5 feel that the proposed rule is a big improvement over the
6 existing rule, 10 CFR 60. This proposed rule recognizes
7 world-wide, more or less, expert consensus on how to
8 evaluate repository performance.
9 Most countries in the world that are considering
10 building a geological repository are using a very similar
11 methodology. And that methodology is using a total-systems
12 performance that evaluates all the various multiple natural
13 and engineered barriers. This approach helps to focus our
14 resources on what is really and truly important for the
15 protection of public health and safety. At the same time it
16 provides the NRC and the public visibility into the building
17 blocks of our safety argument and our performance
18 assessments.
19 We will provide comments on the rule from the --
20 you know, we're a potential applicants and the potential
21 applicants point of view regarding the implementability of
22 the rule. It's very important to us that the rule be
23 implementable. So we are concerned or we will be commenting
24 on understanding the level of proof required, or the term
25 that that NRC's uses is reasonable assurance and we believe

1 that that should be consistent with what science and
2 engineering can reasonably provide and what we can
3 reasonably defend in the licensing environment. We strongly
4 believe that the rule is, it's health-based, that the rule
5 should be understandable, but not only by the regulator and
6 the regulatee but by the general public.
7 We expect to focus our review on several key
8 areas. With regard to the preclosure, that's the period of
9 time from the time we begin to emplace waste until the
10 repository is closed. Understanding a new concept that the
11 NRC has introduced called the integrated safety analysis.
12 We need to understand how the use of design bases-event
13 probabilities are going to be considered in the preclosure
14 safety analysis.
15 We have some -- we will probably have some
16 questions about the dose limits to be used in demonstrating
17 compliance and what the scope is -- what we have to include
18 to adequately cover the whole area. What's important to
19 safety in the preclosure operational period.
20 With regard to the post closure, that's the period
21 from the time you close the repository to 10,000 years. You
22 heard the NRC talk about the human intrusion scenario. That
23 is a stylized scenario of drilling a drill hole from the
24 surface through a waste package all the way down to the
25 water table and seeing what happens, how the repository

1 performs.

2 Since that is a stylized and not a real scenario,
3 we would like to have that clearly defined so we don't have
4 to argue exactly what the scenario would look like. We want
5 to clearly understand how the contribution of the multiple
6 natural and engineered barriers will be evaluated and how we
7 should present them so they could be evaluated.

8 And finally, with regard to performance
9 confirmation. Once the waste is in place we are required to
10 confirm that the repository is operating or performing
11 within prescribed limits. And we need to understand that
12 better, you know, what NRC expects.

13 With regard to the overall process of licensing,
14 we would like a license process that provides for a
15 definitive resolution of issues at each step of the
16 licensing process to avoid revisiting issues over and over
17 and not being able to reach a decision.

18 So in closing, I would like to say that we look
19 forward to the upcoming interaction. This is a very
20 important rule making from our perspective and I think from
21 the public perspective. So we look forward to our
22 interaction with the NRC and other interested parties
23 regarding this rule making.

24 MR. CAMERON: Okay, thanks a lot, Steve.

25 Mal.

1 MR. MURPHY: Thanks, Chip. Let me very brief.
2 And first of all emphasize the fact that everything I say
3 here today with respect to Nye County's views on the
4 proposed Part 63 is preliminary. We are still, as is DOE
5 and I'm sure everybody here, in the process of analyzing
6 these proposals and specifically with respect to their
7 impact on the county and the county's residents.
8 And we will have detailed comprehensive comments
9 into the NRC before whatever deadline is finally
10 established. And so -- but we do have some preliminary
11 views and that is subject to change after they go through
12 our routine and appropriate internal review within the Nye
13 County program.
14 Another thing, I want to emphasize again, as we
15 always do with those of you are residents of Nye County and
16 are familiar with it, and that is the county's neutrality to
17 this process. We are not substantively either in favor of
18 or oppose to Yucca Mountain, but the county's program is
19 designed to strictly oversee what the Department of Energy
20 and the NRC and all other federal participants do out there
21 to ensure that whatever decision is ultimately taken with
22 respect Yucca Mountain is based on objective, rigorous, and
23 thorough science and on the application of reasonably
24 conservative scientific principals.
25 So that anything I say tonight and anything our --

1 and when we finally file our written comments on Part 63,
2 should not be interpreted as either intended to support or
3 to DOE's ability to bring Yucca Mountain to a licensing
4 proceeding or to in any way hinder that. And those comments
5 will be our objective view of what the impact of the NRC's
6 proposal from a strictly scientific and technical and
7 programmatic point of view.
8 With those, our preliminary comments in mind, let
9 me just very briefly, because we do, I agree with,
10 wholeheartedly with Mr. Cameron's views expressed earlier
11 that we want to leave as much time as possible for you folks
12 from the public to talk tonight. So let me just briefly
13 express the four questions which the NRC's moves in the
14 final stages of the review draft.
15 And the first is; has the NRC proposed a
16 protective and reasonable criteria for evaluating the safety
17 of a potential repository? And our qualified answer would
18 be yes, but that does not mean that this is the best
19 criteria for evaluating the safety of the repository. Nye
20 County still would prefer an approach based on release
21 criteria rather than doses, but we recognize and appreciate
22 that Congress removed that discretion from the NRC as well
23 as from the Environmental Protection Agency in the energy
24 policy after 1992 and with that congressional act in mind,
25 we agree that this a reasonable approach but necessarily the

1 best approach.

2 Is the NRC correct in assuming that radionuclide
3 releases to the groundwater is the most likely pathway? We
4 agree with that and for that reason, because groundwater is
5 the likely pathway and because groundwater is so
6 extraordinarily important in this area as anyone driving up
7 from Las Vegas, if you've never been here before, can
8 certainly appreciate. We do not agree with the Department,
9 with the Commission's preliminary views that no additional
10 groundwater protection is desirable.

11 It is still our position that some additional
12 protection for the county's and Amargosa Valley, in
13 particular, groundwater resources is appropriate and at this
14 point in time at least and subject to our further review, we
15 see no reason why this program and these standards should be
16 treated any differently than would otherwise be treated
17 under the Safe Drinking Water Act.

18 Do the proposed regulations meet reasonable
19 assumptions about the Critical Group, the group of people
20 who live near the repository? Our answer again is yes.
21 That that group identified in the regulations is unlikely to
22 exist at the corner of 95 and 373, I guess it is, 10,000
23 years from now. You know, more likely there will be some
24 other biosphere in that area. But because assuming a small
25 farming community with a diet based on today's diet is the

1 more conservative approach with respect to risk exposures,
2 that is the kind of approach -- and based on our insistence
3 on scientific conservatism, that's an approach that we can
4 support.
5 And do the proposed regulations make clear what
6 NRC expects of DOE? And we would answer that yes.
7 So with those comments then I'll turn it over.
8 MR. CAMERON: Thanks, Mal.
9 And why don't we go to Steve.
10 MR. FRISHMAN: Yes, I'm Steve Frishman and I'm
11 here representing Nevada Agency for Nuclear Projects.
12 That's a state agency that was established in 1985 when we
13 perceived the high-level waste program as it effects the
14 state.
15 Now, rather than giving some type of a statement
16 or presentation what I'd like to do to save time and also
17 satisfy my curiosity on one part of the rule is just ask a
18 question to the representatives from the Nuclear Regulatory
19 Commission about a particular element of the rule.
20 As we were told the performance or predicted
21 performance will be calculated at a point approximately 12
22 miles away from the where the waste is placed. And that
23 would be downgradient and approximately where Lathrop Wells
24 is right now. The idea for geologic disposal is that the
25 site is suppose to contain the waste. So now what we're

1 looking at is a situation where even the regulator
2 understands that the groundwater is going to be contaminated
3 and is going to flow downgradient and the performance of
4 that waste containment weighing 12 miles away, isn't going
5 to be measured until you get -- if the contaminated water
6 and you have groundwater diluted and then pumped to the
7 surface a long distance from where the waste is.
8 What I'm curious about is given that this is the
9 point of the regulation, what are the boundaries of the
10 repository site?
11 MR. CAMERON: Tim, do you want to handle that?
12 MR. McCARTIN: Well, in terms of the 12 kilometers
13 or 12 miles, I'm sorry. That was set as where we thought it
14 would be most likely that people would come into contact
15 with the waste. That's why it was set. Now, in terms of --
16 the boundary of site did not come into play in terms of
17 setting that 12-mile limit.
18 MR. FRISHMAN: Well, if you're setting a
19 regulatory limit 12 miles away, what goes on even 20 -- are
20 you -- suppose there will be people there. Are you
21 protecting them? I don't know how.
22 MR. McCARTIN: Well, is it -- well, is it ---
23 MR. FRISHMAN: So what is the area that you're
24 going to require under that rule that the Department
25 demonstrate ownership and control over?

1 MR. McCARTIN: Well, the ownership and control is
2 during the operational phase. In terms of requirement of
3 10,000 years ownership of that entire land is not required?
4 MS. KOTRA: It is so.
5 MR. McCARTIN: Well --
6 MR. FRISHMAN: Read your rule.
7 MR. McCARTIN: Okay. Well, what you're saying
8 though is, let's say what if six miles was the most likely
9 place, would we have put the Critical Group there and the
10 answer is yes.
11 MR. FRISHMAN: Okay, but what I'm asking is: what
12 is the area that is going to be called the site in the
13 evaluation of post closure performance of the repository.
14 MR. McCARTIN: The Department of Energy will
15 define what that limit of the site is.
16 MR. FRISHMAN: So your enforcement of the
17 performance is some place way outside the site?
18 MR. McCARTIN: The geologic setting?
19 MR. FRISHMAN: I just want to know what you're
20 going to require the Department to own and control at the
21 outset for a repository that's intended to perform for
22 10,000 years. Is it going to go to 20 kilometers or not?
23 MR. McCARTIN: They will identify that in their
24 license application.
25 MR. FRISHMAN: Well, you're going to have to --

1 MR. McCARTIN: How much of the geologic setting
2 that they are going to control.
3 MR. FRISHMAN: Okay, so it's possible that someone
4 could live, drink water and whatever, inside of the 12
5 kilometers when you have -- or 12 miles when you have no
6 regulatory basis for saying that it was safe or not safe?
7 MR. McCARTIN: We have not said that it's not
8 technical possible for someone to drill a well inside 12
9 kilometers. Clearly, you can drill a well to much greater
10 depths. Wells exist to that level. What we've done though
11 is now it becomes much more speculative. Why would you put
12 someone at say five miles from the site in that particular
13 location? Why would they be there?
14 MR. FRISHMAN: Because you have another rule that
15 applies to another repository that puts the regulatory
16 boundary at three miles instead of 12 miles.
17 But what I'm still after is; what are you going to
18 accept as the boundary of the site? Is it going to be
19 something less than where you measure performance or not?
20 MR. McCARTIN: If DOE needed to control out to 12
21 miles, then they would have to control out to 12 miles.
22 MR. FRISHMAN: Are you going to require that?
23 It's your rule.
24 MR. McCARTIN: If it's required for public health
25 and safety, yes. The performance --

1 MR. CAMERON: Let me interrupt you just for a
2 minute because --
3 MR. SCHANKLE: Let him answer the question.
4 MR. CAMERON: Well, I want to make sure that all
5 of you out here understand.
6 MR. SCHANKLE: We can understand. Let him answer
7 the question.
8 MR. CAMERON: Does everybody understand what the
9 12 mile distance is all about? All right.
10 MR. McCARTIN: If needed for performance, yes, it
11 will be required.
12 MR. FRISHMAN: What would make it not needed for
13 performance if you're calculating and regulating based on
14 performance 12 miles away. Why would it not go that far?
15 MR. CAMERON: Okay, let's go to -- Janet, why
16 don't you say what you have to say.
17 MS. KOTRA: Let me try and clarify the basis upon
18 which we tried to identify as the National Academy asked us
19 or suggested that we do.
20 MR. FRISHMAN: I'm not really asking that. What
21 I'm asking is; when you get a license application --
22 MS. KOTRA: May I finish? May I finish?
23 MR. FRISHMAN: -- what is going to be acceptable
24 to you as a boundary relative to where you measure
25 performance?

1 MS. KOTRA: We will require that the Department
2 have ownership and control over the rights and the easements
3 that are necessary to ensure that the person at greatest
4 risk will not receive a dose in excess of what we've put
5 into the standard.
6 Why did we choose that particular group. Why do
7 we believe that that is a reasonable approach for finding
8 the group, a group that is at the greatest risk. Yes,
9 people can exist closer, they can exist further away, but
10 what group will have the greatest potential exposure through
11 the largest number of pathways.
12 And we believe, based upon the analysis that we've
13 done -- and the analyses that supported that judgment will
14 be published also and made public and will be available for
15 review -- came out to be a farming community large enough to
16 intercept the whole plume not just a part of the plume that
17 would be large enough to support the maximum credible diet
18 from the most pathways that we consider to be important from
19 a concentration of radionuclide point of view.
20 If that group that was the most at risk from our
21 analysis was on top of Yucca crest, we would have put it on
22 top of Yucca crest. But the fact of the matter is is that
23 we were tasked to look at the group that was most likely to
24 be at greatest risk. There are other people that are going
25 to be at risk, too, but the view is and the concept of the

1 Critical Group -- and that's an international concept. It
2 is something that is in use by -- in radiological protection
3 parliaments all over the world, that group -- the theory is
4 if you protect the group at greatest risk, you are
5 protecting everybody else as well. And that's the basis of
6 the determination.
7 MR. FRISHMAN: Well, and I don't want to belabor
8 this much. I don't think you answered my question. And it
9 sounds to me like there are other people that might be
10 interested in the answer, too. And that's are you going to
11 require the Department to own and control the land out to
12 where you calculate performance? Meaning; is the site going
13 to have to include the out-to the 20 kilometers or 12-mile
14 boundary or is it going to be approximately 1,000 acres that
15 the Department says it is right now? How big is this site
16 going to be required to be and they have control over?
17 MR. McCARTIN: In the license application DOE will
18 have to identify the geologic setting that they are relying
19 on for performance of the repository. If that is out to 12
20 miles then they have to control it. If they do not need 12
21 miles to control the doses up to that point, then they would
22 not have to necessarily. But, you know, right now it's
23 somewhat speculative that -- that analysis is still going
24 on, information is still being collected. But they will
25 have to control as much as needed.

1 MR. FRISHMAN: Okay, so what that says is closer
2 to the repository the doses could be higher?
3 MS. KOTRA: They could be lower, too.
4 MR. McCARTIN: The could be. But let's -- for
5 example --
6 MR. FRISHMAN: Well, I think, you know, people
7 around here sort of have the concept of if you're going to
8 do something, we want to know how much resource you going to
9 need. How much land do you need for this thing.
10 MR. McCARTIN: Right.
11 MR. FRISHMAN: You're the regulator. You are
12 apparently regulating some place, but you're saying it's up
13 to the applicant to tell you where between your regulating
14 and his dump is, what he's going to control and what he's
15 not, even though the risks may be higher the closer than at
16 the 20 kilometers where you're regulating.
17 MR. McCARTIN: The risks aren't higher.
18 MR. FRISHMAN: Well, we're not getting anywhere
19 here. What I conclude from this is; you're going to let the
20 Department of Energy tell you how big their site is even
21 though you're regulating 12 miles away from the site?
22 MR. McCARTIN: Well, it's their analysis.
23 MR. CAMERON: And we can come back to all of you
24 for this question again when we get out here.
25 Okay, Judy, you want to say anything? Go ahead.

1 MS. TREICHEL: Oh, I'm up? Yes. In the rule the
2 environment is mentioned several times. We had a brief
3 chance -- certainly we more chance than the audience has had
4 to go through the rule since it's come out. And you
5 mention, in environment benefits, you mention environmental
6 costs, environmental values.
7 There's one you've left out which is environmental
8 justice because the treaty of Ruby Valley -- the Shoshone
9 are not here tonight, but they would clearly tell you that
10 the treaty of Ruby Valley is in full force and effect. That
11 has not been dissolved, gotten rid of. The United States
12 has not captured the land and they would make a very strong
13 point that regardless of what the size of the repository is
14 going to be, they, the Department is not going to be able to
15 prove full and complete title of that land. But having said
16 that, that's environmental justice.
17 Can you explain to me what an environmental
18 benefit is from a repository?
19 MR. CAMERON: Can we have NRC, someone want to
20 tackle that? Bill.
21 MS. TREICHEL: And this is language out of the
22 rule.
23 MR. REAMER: Judy, I'm speaking -- I'm
24 anticipating what the Department of Energy would say here
25 because they are the ones who are responsible to prepare the

1 environmental impact statement so I could be wrong. But the
2 environmental benefit would be the benefits associated with
3 all of the activities in the nuclear fuel cycle, including
4 the generation of nuclear energy and nuclear power.
5 MS. TREICHEL: So this environmental benefit would
6 probably be a long ways away from here, but the
7 environmental costs would wind up being in Nevada, I would
8 imagine. And this is actually in consideration for the
9 construction authorization not the EIS. And I just think
10 it's interesting language.
11 MR. REAMER: The Department of Energy is
12 responsible for doing the environmental evaluation and the
13 environmental impact statement and they will address
14 environmental benefits and environmental impacts in that
15 statement.
16 MS. TREICHEL: Okay. It seems to me -- and I'm
17 not going to go back to the question that Steve asked
18 because that was hashed over pretty well and I'm sure the
19 people here can put it in terms that are much clearer to
20 them and more important.
21 But it seems like we're splitting hairs. The big
22 word that's being used here is dose. And if Yucca Mountain
23 is such a good place and if what the country anticipated
24 when we have national repository was that it would isolate
25 waste, we here in Nevada have dealt with this thing an awful

1 long time.

2 But when you go out and talk to audiences across
3 the country as I do very often, they assume that the reason
4 that they're going to have all of this transportation across
5 the country is because the Department of Energy has found a
6 place and the NRC, of course, is in with this game with
7 them, that isolates waste. And when you're talking about
8 doses and you're talking about where they occur and what
9 they do and all of that sort of thing, that's not waste
10 isolation.

11 So it seems to me like we're just sort of
12 splitting hairs on this thing. And the farming community is
13 moving closer. The last time -- well, tonight and in other
14 times when I've come out this way, I see somebody growing
15 something right at the corner of 95 and 373. So it's
16 getting very close and it isn't going to take 10,000 years
17 for people to want to do things there. So I think we're
18 sort of arguing about things that are -- and maybe just
19 splitting hairs.

20 The last question I have is; you mentioned in your
21 presentation and you've mentioned many, many times that
22 you're doing a lot of this so you can get a lot of public
23 opinion. What about this rule could you see that public
24 opinion would change?

25 MS. KOTRA: Let me try that one. I wanted to ask

1 you a question of clarification of one of your earlier
2 statements. But I'll answer the last question first.
3 As with every rule making that the NRC engages in,
4 we are obligated as part of that process to take a cut at
5 what we think our best shot is technically. We don't just
6 go out and make it final. We are obligated and we believe
7 it's very important that we put forward a concrete proposal.
8 Not just say, we're thinking about having a rule, what's the
9 best rule.
10 We feel we have an obligation because of our
11 technical expertise and our responsibility to do the best
12 job of a proposal. Once that proposal is out there, there
13 are lots of aspects of that proposal that may be improved.
14 That may miss the mark. That may be made more clear. That,
15 in some cases, may be unnecessary to accomplish the stated
16 objective. We make that proposal available to the broadest
17 possible community to get input to help us make a better
18 decision about what that final rule should be. And that's
19 why public comment period is so very important to us.
20 MS. TREICHEL: Well, if you hear a lit of people
21 here tonight say that they think it should stricken, that it
22 should be less than 25 millirems, are you likely to bring
23 that down? Are you likely to bring it down to 10, 15,
24 whatever?
25 MS. KOTRA: What we will do, as the technical

1 staff working for the commissioners who are the individuals
2 appointed by the President to make these decisions, we will
3 take that back. We will do a very thorough analysis of all
4 the comments that are received on this rule. That's why
5 we're keeping a transcript here and we will have a -- and if
6 you look at our track record as an agency for any of these
7 types of rules, particularly the big ones, there's a very
8 lengthy analysis to comment document that goes along with it
9 and will take a lot of time to prepare.
10 Then we will analyze those and we will go back to
11 the Commission and say, here is what the reaction has been
12 to our proposal and we have, in some cases, we take a look
13 at these comments and we think it would be better if we did
14 this. We would make a recommendation. Ultimately, the
15 decision has to be taken by the five individuals that are
16 appointed by the President.
17 As the technical staff we will rely very heavily
18 on the comments that we received to make those
19 recommendations, but ultimately the decision will be made by
20 the five commissioners. But it is an extremely part of the
21 process.
22 I wanted to ask you a question though, as a
23 scientist, I wanted to make sure I understood you to say
24 that isolation means finding a site for which there is no
25 release.

1 MS. TREICHEL: Right.

2 MS. KOTRA: Okay. We, as a regulator, have to
3 look at what can go wrong with any site and say what would
4 be protective if those things -- if over time this facility
5 does deteriorate, what is going to be the likely consequence
6 of that deterioration and what has to be done. What are the
7 standards for protecting people if that facility does indeed
8 deteriorate and that's what this is about.

9 MS. TREICHEL: Okay, I don't want to take any more
10 time, but if you set a real tough standard, you'd get a lot
11 closer to isolation because Yucca Mountain would fail and
12 you'd have to do something else. Like in Sweden where it's
13 less than 1 millirem. But don't talk anymore.

14 MR. CAMERON: Okay, thanks, Judy.

15 Brad, Brad Mettam from Inyo.

16 MR. METTAM: Thank you. My name's Brad Mettam
17 from Inyo County, and Inyo County is one of ten counties
18 that are involved in this program. I'd like to recognize
19 there are at least three other counties represented out in
20 the audience tonight as well as Nye County at the table.

21 I'd really like to hear what you folks have to say
22 so I'm going to just raise a couple of items for
23 consideration and then move on. The first one to think
24 about is the issue of the multiple barriers. They talked
25 about defense and depth. But if you look in the rule, it

1 doesn't really talk about how they're going to decide if
2 that's been met. That, you know, the defense and depth
3 criteria is met. So that's something to think about.
4 We agree with Nye County that groundwater is the
5 most likely pathway and because of that we're concerned
6 about the use of total system performance assessment as the
7 sole way of deciding if this site is suitable. Too many s's
8 in that.
9 The performance assessment effort is something
10 that has been developing over the last 10 years or so. The
11 Commission in its discussion document says that they now
12 believe that it's matured sufficiently to use that rather
13 than specific criteria.
14 But I'd like to know that the peer review panel,
15 which released the report on total system performance
16 assessment last month, in their report which looked at the
17 total system performance assessment for the viability
18 assessment -- I don't want to lose you there. They said
19 it's unlikely that the TSBAVA, taken as a whole, describes
20 the long-term probable behavior of the proposed repository.
21 So I'm not certain that this really has matured
22 enough to be used as the way to decide if the site is
23 suitable or not. Inyo County strongly, they feel as does
24 Nye County, that you need, at the very least, a groundwater
25 protection standard that's very specific. Thank you.

1 MR. CAMERON: Bill Vasconi.

2 MR. VASCONI: Yes, Bill Vasconi with the study
3 committee. There's several of the entities involved in this
4 and you've got to read the paper over two or three times to
5 get your head straight on what they are, at least I did.

6 Naturally, you know there's DOE, but you got the
7 Nuclear Regulatory Commission and basically they're
8 regulators. They set the regulations. Then you've got the
9 EPA, Environmental Protection Agency, that builds the
10 standards. They've all got to work together and they have
11 been cooperating and talking amongst themselves. Then they
12 throw in the National Academy of Sciences trying to bring
13 this all together.

14 Well, the bottom line is that the NRC needs to
15 make revisions in its regulations in order to be consistent
16 with a new risk-based EPA standard. And although the NRC
17 may not know all the details of the upcoming EPA final
18 standards at this time, the National Academy of Sciences'
19 recommendations with which EPA must be consistent have been
20 public for more than three years.

21 So my question is, okay, 25 millirem, and what
22 does it mean? The average dose to an individual, annual
23 dose, yearly dose to an individual in this area is 300
24 millirems; 300 millirems over a year. And that comes from
25 things like the house you live in, the food you eat. Chest

1 x-ray, for example, 10 millirem. A mammogram is 30. Cosmic
2 rays received, 31. Radium in a household, 200.
3 If you take an airplane trip, the higher your
4 elevation. If you smoke cigarettes, it goes to the
5 thousands. If you work with phosphorous, if you work with
6 fertilizers, there's also an increase, 25 millirem. And
7 we're talking hundreds and thousands for smoking,
8 fertilizers. Dentures is measured in the thousands of
9 millirem to the gums. I did not know that before I got a
10 report to see that's the way they're manufactured.
11 So 25, where did we establish the 25 figure from?
12 Is this something national? That would be my question.
13 MR. McCARTIN: Well, the public dose limit that
14 NRC has in Part 20 is 100 millirem. And for high-level
15 waste, we have elected to use a fraction of the public dose
16 limit of 100 millirem for Yucca Mountain; so we have 25
17 millirem. Generally, that's consistent with most
18 international countries setting dose limits and it's
19 consistent with other regulations we've set for other types
20 of nuclear facilities, et cetera.
21 MR. VASCONI: Thank you very much.
22 MR. CAMERON: Thanks a lot, Bill. Brad mentioned
23 that there were other county representatives out here. I
24 don't know if any of them have anything to say at this
25 point.

1 (No response.)

2 MR. CAMERON: All right. We have Clark County,

3 Lander County, and Eureka County with us.

4 MR. MURPHY: Mineral County is here, too.

5 MR. CAMERON: Oh, Mineral is here. Who is from

6 Mineral? Oh, great. Okay.

7 We just had this discussion about a number of

8 terms; 25 millirems, dose standards, this 12-mile issue,

9 Critical Group, human intrusion. You heard a lot of these

10 terms. Does anybody have questions? You understand what

11 this rule is about. I don't think that we -- at least from

12 my hearing it and there might be others, I'm not sure that

13 the 12-mile Critical Group issue has really come across

14 clearly.

15 Does anybody have a question about that or a

16 comment on the 12-mile issue.

17 MR. DUGAN: Yeah.

18 MR. CAMERON: Sir, could you -- let me get you a

19 mic and if you could just state your name for us for the

20 transcript, please. Thank you.

21 MR. DUGAN: Yes, sir, I'm Kenneth Dugan. What I

22 was wondering and what I wanted to ask you was now at that

23 12-mile limit, if that shows or goes into a higher

24 contamination, what are they going to do about it?

25 MR. McCARTIN: If it's a higher contamination at

1 12 miles?

2 MR. DUGAN: Yes, if when they make a test on it,
3 what if the contamination is already way higher than your
4 allowance states, what are they going to do to shut it off?

5 MR. McCARTIN: You mean as it's monitored over the
6 next 10,000 years? I mean right now the doses are
7 hypothetical. These are estimates of potential doses. If
8 those estimates are beyond 25 millirem, there would not be a
9 license granted.

10 Now, I emphasize potential doses because I know
11 the peer review panel discussion was brought up about their
12 comments on performance assessment. They were talking about
13 actually estimating the performance. We believe the
14 calculations we're doing are conservative and we're
15 overestimating the doses. We'd like to think that whatever
16 doses we estimate are much larger than ever would occur.

17 MR. DUGAN: I guess we all hope that. But that
18 still don't answer my question. I wanted to know if they
19 run over that, say 20 years from now, if they take the test.

20 MR. McCARTIN: Oh.

21 MR. DUGAN: And it is way above that, what are
22 they going to do about it to clean it up?

23 MR. McCARTIN: Well, during the operational phase,
24 their retrievability option is there and that's why that
25 retrievability clause is there. Is that over this next,

1 let's say 100 years, there's a retrievability option for 50
2 years in which time DOE would have the option to retrieve
3 it.
4 And if there was anything learned, either more
5 analysis that showed that now we believe that the repository
6 would not be in compliance at later times, then the
7 retrievability option could be used to remove the waste.
8 And in addition to the performance, confirmation period and
9 monitoring where they're examining the site to make sure
10 it's behaving the way we've represented it in our
11 calculations.
12 MS. KOTRA: And must closer than 12 miles, also,
13 yeah, all the way along the line.
14 MR. MURPHY: Could I just add just a very brief
15 Nye County perspective on that, on that last discussion.
16 Sir, we, Nye County based on some work that a couple of our
17 scientific advisors have done, has been looking very
18 closely, has been urging the Department of Energy and the
19 Nuclear Regulatory Commission and others to look closely at
20 a design of any closed repository which we call it a
21 naturally ventilated repository, a design which would allow
22 the atmosphere, the natural air to get into the repository,
23 keep it cool, keep it dry, keep the water out of contact
24 with the waste canisters and thus provide a far more
25 certainty about the repository performing the way it's

1 expected.

2 But one of the additional benefits of such a

3 design would be to provide -- would be to allow the

4 government to retrieve that waste literally forever,

5 forever. So that if --and it's not going to happen in 20

6 years. But if at some point in time in the future, the

7 doses at this hypothetical 12-mile downgradient did exceed

8 25 millirem, the option would be available for the

9 government to just go in and retrieve the waste.

10 So that's a -- and we aren't pushing it. You

11 know, I don't want to say that Nye County is sponsoring that

12 design yet because a lot more work needs to be done. But

13 it's a design that we think needs to be given a very close

14 look at by everybody involved in the program.

15 MR. CAMERON: Okay, thanks, Mal. And I'm going to

16 go to the people in this row and then we'll see if anybody

17 else out there has something to say.

18 Yes, sir, and please state your name.

19 MR. BURSM: My name is Zolin Bursm. I'd like to

20 recommend that the regulations would include a sampling

21 program such that you could determine that the water was

22 contaminated far earlier then anybody would get any dose.

23 And then you could eliminate everything. Why doesn't the

24 sampling program be a part of your regulation?

25 MR. CAMERON: NRC sampling program issues. Can

1 you talk to that?

2 MR. McCARTIN: We would agree. We would agree.

3 MS. KOTRA: And it is part of the --

4 MR. McCARTIN: Performance confirmation.

5 MS. KOTRA: Yeah.

6 MR. CAMERON: Okay, thank you.

7 Let's go over here to Sally Devlin.

8 MS. DEVLIN: Yeah, I'm Sally Devlin from Pahrump

9 and welcome everybody. And I came here -- as part of my

10 presentation from the Federal Register on page 8645 and 46,

11 regarding the term and you have this term and I don't know

12 why it's in your stuff, the biosphere and Critical Group for

13 Yucca Mountain. And this is the 20 kilometers and 12 and a

14 half miles that we're talking about.

15 What bothers me the most about the Federal

16 Register's report is that it doesn't give details that the

17 TSBAVA did, a peer review. And that talks about that

18 titanium 237 and the iodine 5.39. And they are in large

19 doses. And my concern, and this was going to be part of my

20 presentation to ask you the question is; you're talking very

21 arbitrary numbers as far as I'm concerned. We can throw out

22 that 420 millirems a year. Beatty is 460. So you have

23 limit standard at 365.

24 My problem with all this stuff is the cancers and

25 so on that they cause. And I was going to say that I feel

1 very strongly that 25 millirems is much too high and the
2 reason I say that is I have been tutored in radiobiology and
3 one of the things that I found is in the report on the
4 children's deaths from cancer was children 15 and under
5 cannot endure more than 10 millirems and it's certainly
6 going to be close to children.
7 The second point I want to make and I want
8 investigated is we're talking as they said an arbitrary 20
9 kilometers or 12 and a half miles. But look how close you
10 are to Death Valley. And this really bugs me. You look
11 over there right out of the window at Beatty and you look at
12 the two little mountains and the Superstition Mountains and
13 so on and that's just 20 miles.
14 Now, when you're talking about Yucca Mountain and
15 to me is no analog and it leaks like a sieve. And how long
16 will it take for the neptunium iodine and the other deadly
17 poisons that will be going in the mountain to hit Death
18 Valley. You're not allowed to kill our pope fish and you're
19 not allowed to kill Death Valley, and Inyo County, my
20 friend, Brad.
21 So these are three questions that is actually
22 asked about dosage; less than 25 for the children. I don't
23 -- this is arbitrary because even if I were not at Hiroshima
24 and I -- we were both exposed, I'm might be dead and you'd
25 be alive. The radiation side of this knows nothing about

1 why one would get cancer another doesn't. And once I
2 realized that it's very important and this is such an
3 arbitrary thing and I think it should be really looked into
4 far more seriously than you have done.
5 MR. CAMERON: Okay, thank you, Sally.
6 Does anybody from the NRC want to clarify for the
7 audience the dose issue and what it's based on and what the
8 data show. I don't mean to do a long thing, but can you
9 clarify that in response to Sally's question?
10 MR. McCARTIN: Well, the 25 millirem you have a
11 likelihood of causing problems like cancer. It's a very,
12 very low likelihood. I mean, that as you noted the experts,
13 there's very little -- you have to go to a much, much higher
14 dose and Chris McKinney from the staff, he's the health
15 physicist here, he can talk to -- I think it's at somewhere
16 on the order of 25,000 millirem where you actually start to
17 see some effects from radiation. But I'll turn to Chris,
18 I'm not a health physicist.
19 MR. CAMERON: Okay, Chris, if you could explain
20 this simply, it would be helpful.
21 MR. REAMER: There's a challenge.
22 MR. McKINNEY: Okay, I'm Chris McKinney. I'm a
23 health physicist with the NRC. First of all, no more
24 evidence that any of us, that nobody will get anything.
25 It's not a physical thing you can hold onto. That's the

1 problem.

2 Most all the data --

3 REPORTER: I can't pick you up very well, could

4 you come back over toward the table a little bit. Right

5 there is fine.

6 MR. McKINNEY: Okay, the whole basis in protecting

7 the public from radiation is based on risk estimates of how

8 potent radiation may cause cancer in people. And most all

9 the data is on the order of, that we have good data on

10 distinctive cancer showing up or is on the realm of people

11 who get 10 rem or 10,000 millirem in a year or more. We've

12 extrapolated that down and said there may be a threshold,

13 there may be a lower effect, but as a conservative measure

14 we're taking it to be the same effect as up there. If you

15 get -- at the same rate of chance.

16 So 25 millirem equates to a lifetime risk increase

17 in a cancer risk of four in ten thousand. Now, none of --

18 everybody in the United States currently has a risk of

19 between 20 and 27 and 100 of having a fatal cancer, of dying

20 of cancer right now. The 25 millirem dose limit is talking

21 about very much lower than that so you may have 20.04 than

22 20.

23 The 100 millirem dose limit that the NRC uses is

24 based on protecting everybody not just adults, children,

25 too. We've evaluated children, child doses. Although the

1 rule points towards adults, we've evaluated them and they're
2 not different than the adult doses because children are more
3 sensitive per gram they eat. But they tend to eat less
4 overall when you talk about all pathways. They may drink
5 more milk than you do on a per-weight basis, but you eat a
6 lot more different products. You drink more water and get
7 other ways to get the radiation.
8 MS. KOTRA: Well, let me just add here that the
9 Nuclear Regulatory Commission is responsible for regulating
10 the use of radioisotopes and radioactivity in a lot of
11 different applications; from nuclear power plants to medical
12 use of radioisotopes to small commercial products. And we
13 use, as a health and safety limit for all of those
14 activities, from all sources, an individual is believed by
15 many, many countries and by our agency to be safe if that
16 limit is kept below 100 from all sources.
17 We believe it's reasonable to apportion a fraction
18 of that given the fact that there are people who may be
19 exposed to other manmade sources in addition to exposure to
20 a repository. But the 100 millirem public dose standard has
21 been in effect for a long time. It's consistently used
22 around the world, and as a conservative measure, because we
23 want to take account of the fact that people might be
24 exposed to more than source, we have allocated only a
25 quarter of that public dose limit that is operating for all

1 licensed facilities to a repository.

2 So I just wanted to emphasize that this is based

3 upon a international consensus, there are international

4 radiation protection organizations all over the world that

5 agree that 100 millirem public dose limit, it's a basis of

6 our regulations and has been from as long as NRC has been in

7 business.

8 MR. CAMERON: Okay, thanks, Janet. Thanks, Chris.

9 We have some questions back here. We're going to

10 go to this gentleman here and if you could just simply state

11 your name.

12 MR. YOUNGHANS: My name is the George Younghans.

13 I'm the closest living relative to Yucca Mountain. I have a

14 couple of questions. First, Steve Brocom, at least I hope I

15 pronounced that right. I did not understand much of what

16 you said. So if you could reiterate in layman's language, I

17 would appreciate it.

18 Two, I live up in the Oasis Valley which is

19 downstream from the wetness test program particular in area

20 20. We quit the wetness test in 1992. The DOE computer

21 models indicate that we should have tritium in the Oasis

22 Valley and Beatty, per se, right now. And as far as I know

23 there's no major wells to intersect the radionuclide iron

24 that is coming off of the test site.

25 Also the DOE has admitted that plutonium has

1 traveled one mile in say 20 years. It's not many years
2 until it gets to our back door. The DOE has not resolved
3 what's happening on the wetness test program and the
4 radionuclide that is coming at us right now, how can you
5 people even dare stand up there and tell us what's good and
6 bad and indifferent, I don't understand.
7 I do not comprehend and you're part of the same
8 package. The off-site radiation is coming at the town of
9 Beatty and nobody has taken any major steps to intercept
10 this or to determine what is happening and I would like to
11 know. And if we don't know what's happening there, and I'm
12 only talking seven years since we quit the wetness testing
13 and you people are talking 10,000 years and it will show you
14 this.
15 Do you understand that, you know, that the
16 plutonium is still lethal 10,000 years from now, is it not?
17 Is it not?
18 MS. KOTRA: It is hazardous for that long --
19 MR. YOUNGHANS: You don't know.
20 MS. KOTRA: It is hazardous for that very long
21 time, it is.
22 MR. YOUNGHANS: Because the DOE has not done that
23 for the locals, how can you try to sell a program like this.
24 MR. McCARTIN: Certainly the plutonium will be
25 around, but in our analysis if it's in concentrations beyond

1 25 millirem which is acceptable for public health and
2 safety, it would not be licensed. We're not allowing it out
3 in lethal amounts.
4 MR. YOUNGHANS: If the DOE lets in off in Nevada
5 test sites --
6 MS. KOTRA: No one has gotten doses in excess of
7 25 --
8 MR. YOUNGHANS: Pardon?
9 MS. KOTRA: No one has gotten doses --
10 MR. YOUNGHANS: No one has gotten doses yet
11 because it's only seven years since they quite testing and
12 you're talking 10,000.
13 MR. CAMERON: Perhaps the simplest, and I want
14 Bill to say something, but perhaps the simplest way to
15 respond to this is; are there studies that have looked at
16 radiation releases from the test site?
17 MR. YOUNGHANS: No, not releases, underground
18 water.
19 MR. CAMERON: Okay.
20 MR. YOUNGHANS: I know what the release is, we
21 don't know the underground water.
22 MR. CAMERON: Are there any studies that Mr.
23 Younghans --
24 MR. MURPHY: Let me try to answer that.
25 MR. CAMERON: -- could be referred to?

1 MR. MURPHY: Chip, let me try to answer that and
2 if I -- listen up here, Nancy, because if I say anything
3 wrong I'm going to call on you to correct me. But yes, the
4 answer to that is there are -- there have been, in fact, and
5 there are ongoing studies of the migration of radionuclides
6 off the Nevada test site in your area, sir, up in Oasis
7 Valley.
8 And not that I mean to defend Steve or anything,
9 but the folks from DOE who are responsible for that problem
10 are the Nevada Test Site Environmental Management people not
11 the Yucca Mountain project. But let me just --
12 MR. YOUNGHANS: But the standards ---
13 MR. MURPHY: I understand that, no I understand
14 that. Let me just continue. We -- and this speaks to one
15 of the issues we discussed earlier, too, about the certain
16 early warning. We have, as you know, and Nye County has
17 what we call the early warning drilling program where we've
18 drilled a series of wells down around the Amargosa Valley to
19 give us an early warning of releases from Yucca Mountain.
20 We have also proposed to the Nevada test site
21 people that they fund Nye County to drill the same kind of
22 series. I don't have in my mind the number and locations
23 but an early warning drilling program in, up in that area to
24 give us a warning, if you will, to provide that trip wire so
25 that you would know when releases in the groundwater from

1 the Nevada tests on weapons program on the Nevada test site
2 are heading your way and, you know, Nick could fill you in
3 on that.
4 But we have, Nye County has proposed that we be
5 funded by the Department of Energy to do exactly what it is
6 that you're concerned with, but we haven't -- we're still
7 hopeful that in the near future we will get funding to
8 conduct that program.
9 MR. YOUNGHANS: But they have not done that and
10 secondly, their computer programs, their computer programs
11 indicate that it is here right now. That's what my point
12 is. Do we wait until Yucca Mountain is in Amargosa Valley
13 or in Beatty before we respond? Well, it's too late.
14 MR. CAMERON: Okay.
15 MR. MURPHY: Well, that's the whole point of our
16 early warning drilling program so we can respond to that
17 kind of thing.
18 MR. YOUNGHANS: Well, they don't care.
19 MR. CAMERON: Okay, we're going to go to Nick now
20 for last comment on this issue at this point. Go ahead,
21 Nick.
22 MR. STELLAVATO: Nick Stellavato with Nye County
23 with the waste offices. Mr. Younghans and Ms. Younghans was
24 up here, gosh, it was a year or so ago and when we made the
25 proposal to the DOE NTS ER program for a similar drilling

1 program that we proposed to Steve Brocom's DOE side and we
2 were funded for the Yucca Mountain side, we were not funded
3 for the Oasis Valley side.
4 The ER program, at the NTS site they have drilled,
5 or started one of the first holes, I guess, right off Pine
6 Mesa. They're down to 1600 feet right now and that's that
7 program that Bob Bangler talked to you about up here one
8 night that we also wanted to drill down in Oasis Valley so
9 we could get up to 22 holes there, somewhere in that
10 vicinity to get some independent third-party data.
11 UNIDENTIFIED VOICE: Well, it's too late on the
12 tritium.
13 MR. STELLAVATO: Well, the response of Rick Rodell
14 with the NTS, and I saw the presentation a year and a half
15 ago that they did. Their model says that tritium should
16 have been down but they ran out and did some sampling. I
17 don't think they ever picked up any tritium. Bob Bangler
18 and his program to get the wells in will definitely be
19 picking up, you know, the groundwater samples and we'll all
20 get to see that analysis.
21 MR. CAMERON: All right, we're going to be coming
22 back to it. We're going to go this gentleman and then we're
23 going to Nancy -- is it Louden or --
24 MS. LOUDEN: Yes.
25 MR. CAMERON: Louden. Okay, you have a question,

1 sir. State your name for the transcript.

2 MR. SCHANKLE: My name is Vernon Schankle. The

3 question I have is a multi-part question. In your

4 presentation, the first thing that I found that I was

5 confused about is; what elevation is the repository going to

6 be located at? At what elevation is the groundwater at the

7 repository site?

8 At the 12-mile mark, you've indicated that you've

9 established 300 meter mark over the well and at that point

10 you were measuring or concerned about a 25 millirem

11 observation when you sample. In order to obtain that 25

12 millirem, what would it take in terms of time and in terms

13 of quantity of materials to be discharged at the repository

14 for this to become a potential problem?

15 And should there then be a series of observation

16 wells on that early warning detection that would then need

17 someone to, at what point is it -- back to towards the

18 repository where you had 25 millirems become suddenly higher

19 and potentially there's a problem for human life.

20 MR. CAMERON: Okay, thank you. Who's going to try

21 to answer that question?

22 MR. McCARTIN: Briefly, I'll -- some of the DOE

23 people may be able to help out about the elevation. But

24 generally the repository is approximately 300 meters above

25 the water table. Now, at the 12-mile mark, we're talking

1 about the water table being about 100 meters below the
2 surface in terms of the actual elevations. I don't know if
3 you need more than that, but that -- those aren't exactly
4 elevations, but in terms of relative to the water table,
5 that's --
6 MR. SCHANKLE: What is the amount of time that it
7 would take for the material to travel from the site to the
8 12-mile mark?
9 MR. McCARTIN: Right.
10 MR. SCHANKLE: And have a 25 millirem --
11 MR. McCARTIN: Well, right now, and obviously the
12 Department of Energy is still characterizing the site and
13 there's a lot of information and studies to go on.
14 Generally in terms of the amount of time, I think right now
15 if you had to make an estimate, I'd say 1,000 to 7,000 years
16 would be, capture the minimum. In all likelihood it could
17 be much longer but I'll take a guess at 1,000 to 7,000
18 years.
19 In terms of the amount that's released, generally
20 25 millirem is a low dose. There is not a lot of material
21 that can be released and that dose not be exceeded. And
22 that over a very, very long period of time, the overwhelming
23 majority of the contents of the repository would be expected
24 to remain at Yucca Mountain for millions of years.
25 MR. SCHANKLE: I understand but you're talking

1 failure analysis and what the failure, you're talking about
2 a container that has been punctured and allowing either
3 surface water or groundwater to penetrate through and pick
4 up that discharge into the continuation of the groundwater.
5 MR. McCARTIN: Right. Well, the analyses to date
6 are still ongoing. Now, in terms of what we do, generally
7 at NRC we think we're doing analyses that are conservative
8 in that we assume a relative high number of packages that
9 are failed from day one. The amount of water getting
10 through the unsaturated zone, fairly high.
11 Are you asking how many containers would it take
12 to fail?
13 MS. KOTRA: No.
14 MR. McCARTIN: And before, out of the -- let's
15 assume there's 7,000 containers, to get a 25 millirem dose
16 for a farming community? I'll say -- I mean you're really
17 asking me to guess prior to a lot of analysis being done,
18 but I'll say 100 to 500 containers.
19 MR. SCHANKLE: Out of what total volume?
20 MR. CAMERON: Out of what total volume. We're
21 going to have to close this off and go on to some other
22 people.
23 MR. McCARTIN: I guess what kind of volume?
24 MR. MURPHY: Chip. Chip, before we do that, I
25 think there's still confusion about what it is we're talking

1 about here with respect to a 25 millirem dose.

2 What the Department, what the Nuclear Regulatory

3 Commission is suggesting is not that at where this so-called

4 Critical Group lives, that is 12 miles away from Yucca

5 Mountain, they would measure the groundwater and if the

6 groundwater contained 25 millirems of radiation then, you

7 know, that the repository would somehow be in violation.

8 But that what that means is that if this

9 hypothetical Critical Group, a farming community located up

10 there, down there at the Lathrop Falls intersection, if

11 those folks lived there for a year, grow their food in that

12 area, eat the food they grow on that ground, drink milk

13 produced locally, and drink the water out of that ground and

14 do so for a year, that the Yucca Mountain, that the

15 repository at Yucca Mountain could not produce to those

16 people over the course of a year a dose to their bodies in

17 excess of 25 millirems.

18 It's not a measurement of the amount of radiation

19 in the water or the measurement amounts of the amount

20 radiation in the case of Yucca Mountain. That's why -- and

21 that's sort of the thing that Steve Frishman was discussing

22 earlier. That's why we would prefer a system which would

23 allow them to do that, to draw a circle say three to five

24 miles around Yucca Mountain and measure the radiation

25 escaping, if any, measure the radiation escaping from Yucca

1 Mountain, and then determine whether or not it was complying
2 and not get into these kind of arguments about how much milk
3 adult versus children drink and what and who and how many
4 people are going to live in Lathrop Wells ten years from
5 now.
6 We would prefer a situation, a regulatory scenario
7 where they didn't have to do that. Where the determination
8 of compliance or non-compliance was sharper and clearer and
9 much simpler.
10 MR. CAMERON: Okay, Mal, thanks for putting that
11 into perspective. We have a number of people who have
12 wanted to talk out here and we're going to go to Nancy
13 Louden first and we have a gentleman in the back and Abby
14 from --
15 MS. JOHNSON: Eureka County.
16 MR. CAMERON: Eureka County wants to say something
17 and I know that Bill has wanted to say something. I'm going
18 to let Nancy Louden, who's come a long ways tonight to talk
19 for a minute.
20 MS. TREICHEL: Can I also ask that the answers
21 from the table be way briefer. We shouldn't go more than --
22 even as long as the questions because we're wasting a lot of
23 time up here.
24 MS. LOUDEN: My name is Nancy Louden and my family
25 and I own the Crescent Valley Mineral Hot Springs. It's one

1 mile from the proposed nuclear rail line through Crescent
2 Valley. My husband and I drove 300 miles to get here
3 because we are opposed to the transportation and storage of
4 nuclear waste in the state of Nevada. If people from other
5 states could put themselves in our shoes, I'm sure they
6 would feel the same way.
7 No one would want to take a therapeutical healing
8 mineral bath next to a nuclear railroad. The whole idea is
9 appalling. We came here nine years ago and have enjoyed our
10 time and put up all our resources into developing our place,
11 into a healthy peaceful environment.
12 We are looking forward to living long healthy
13 lives with no fear. Fear of the accident that is not
14 suppose to happen, but, in fact, there have been numerous
15 train accidents in Nevada and a wreck involving high-level
16 nuclear waste would be devastating. It isn't right for
17 anyone to play God and lower the health and safety standards
18 for their fellow Americans.
19 The number one criteria for choosing any source of
20 power should be health. When safety and radiation standards
21 are lowered, more people will die of radiation-related
22 diseases. The first to go will old people like me and my
23 mom. Then babies, then those whose health has been weakened
24 by a serious disease or accident like our 17-year-old
25 daughter and only child, Nina.

1 The people living in Nevada will pay the high
2 price for nuclear power used in other states. By getting
3 diseases caused by anxiety and living next to a nuclear
4 waste route and repository and dying from cancer caused by
5 background radiation and the possibility of nuclear
6 accidents which would kill all life for hundreds of years.
7 No one knows what will happen over a period of time if all
8 the waste is condensed into one place.
9 All states should share the burden equally for
10 storing nuclear waste because it will keep people tuned in
11 to the serious problems that the nuclear industry creates.
12 Only when people whose personal lives are close to this
13 deadly waste will all the less toxic energy options be
14 developed. Even though we are told they aren't economical.
15 To quote National Geographic here in this past 20
16 years, tens of billions of dollars have been wasted in
17 attempting nuclear projects that were never used. DOE has
18 spent more than $2 billion attempting to establish a
19 permanent repository and little progress has been made.
20 That was a few years ago.
21 Only 20 percent of our energy is generated by
22 nuclear power and it is a good time to phase it out. People
23 can easily dismiss the fears and health hazard caused by
24 nuclear waste. They can ship it out to Nevada, a place far
25 away. Then they can even justify making more of it. Those

1 who think the right thing to do is to put this deadly waste
2 in the state of least population and representation, believe
3 that it is okay to sacrifice some people to make the quality
4 of life easier and better for the others like themselves.
5 This is pure shortsightedness, selfishness and
6 greed. People are learning that it isn't right to exploit
7 and kill people of other races. Now, they have to learn
8 that it isn't right to exploit and kill people who live less
9 densely populated areas.
10 (Applause.)
11 MR. CAMERON: Okay, thank you, Nancy.
12 We're going to go back here to this gentleman and
13 then we're going to go to Abby.
14 MR. McCRACKEN: Thank you. My name is Ralph
15 McCracken. I'm from Amargosa Valley and in deference to our
16 moderator, I believe we're still talking primarily about our
17 12-mile or 20 kilometer parameter-type question.
18 MR. CAMERON: Go for it.
19 MR. McCRACKEN: Okay. The people throughout this
20 country have the ideas that's been projected to them that
21 Yucca Mountain is a place to put radiation, a place to keep
22 radiation, a place to contain it, okay.
23 Containment is one thing. Any gardener, any
24 fireman can tell you what containment is. If his hose
25 doesn't leak, he has containment. I suggest that you guys

1 are offering to us a leaky mountain. Something that will be
2 allowed to permit to deliver to the people up to 25
3 millirems or whatever number you guys settle on before we go
4 into alarm mode.
5 Which brings us to the next question. If there's
6 25 millirems at 12 miles or at 20 kilometers, however you
7 want to look at it, if there's that much coming out there
8 then, how much more in transport already to get to the point
9 that we know that 25 millirems is there? And finally, you
10 go in and go extract a leaky package, that's fine for what's
11 left in the leaky package but not what's in transit. Think
12 about that. Okay, that's enough on that part.
13 During the period of time that you've been
14 studying this mountain, other things have been happening in
15 the area within that 12 miles and/or going on out to the 30
16 kilometers things are happening, things have been happening.
17 Even Nye County's got a big project in that area.
18 Now, it's very convenient that this 12-mile radius
19 is a limit that stops just before you get to Highway 95.
20 Anybody that's running from Las Vegas to Reno on the
21 highway, or back and forth, are going to go through this
22 area. And just because you say, okay, we have this 25
23 millirems in here at 12 miles doesn't mean that it stops
24 there. The folks that are just over that are going to get a
25 shot of it, whatever it amounts to.

1 Specifically, we're talking about, there's this
2 high-tech corridor that's happening right here at gate 510.
3 It's also projected to bring industry and with industry
4 support services and support services and industries don't
5 happen without people all running down Highway 95. Starting
6 as far south as just beyond Lathrop Wells through Beatty and
7 on up further north. As far as a technology corridor, has
8 been bandied about very much over the last couple of years.
9 I'd also like you to take a look at the population
10 figures that your rules and projections were based on. In
11 the environmental study you talk about 900 people in
12 Amargosa Valley. I seriously question that number and I
13 suggest to you guys that it's low. Our next census will
14 give us a final answer on that.
15 What is this gentleman's name here, the second one
16 over?
17 MR. McCARTIN: Tim McCartin.
18 MR. McCRACKEN: Tim?
19 MR. McCARTIN: Yes.
20 MR. McCRACKEN: Okay. Tim, you suggested that
21 well -- you said a 100 meters deep which is roughly 325
22 feet, something like that, as being economically
23 environmental or --but you wouldn't drill that deep. Well,
24 I'm going to tell you right now that in Amargosa Valley on
25 the TT Ranch there is at least one well that goes down 400,

1 450 feet. That most of the wells in that valley were
2 drilled in the '60's with '60's technology, that the pumps
3 for the most part were dry-shaft pumps. And there was a
4 reason that you tend to stop at that 250 to 400 foot range.
5 It's called horse power loss and inefficiency.
6 Well, since then we've come up with submersible
7 pumps. You can go deeper and you can pump more with the
8 innovation or the same additional horsepower and draw your
9 water from lower down with the same over-all horsepower
10 efficiency. So I suggest that you revisit those numbers
11 there with today's technology.
12 MR. McCARTIN: May I just add that's one of the
13 reason we're putting this information out. If there's other
14 information that suggests some of the basis for what we
15 elected to choose is wrong, we need to hear it and we
16 appreciate it.
17 MR. McCRACKEN: That's why I'm telling you.
18 MR. McCARTIN: Right, we appreciate.
19 MS. KOTRA: And we appreciate it.
20 MR. McCARTIN: We appreciate the information,
21 yeah.
22 MR. McCRACKEN: I'm not criticizing. I'm taking
23 issue with it.
24 MR. McCARTIN: Yeah, okay.
25 MR. McCRACKEN: And giving some facts to go with

1 it.

2 MR. McCARTIN: Good.

3 MR. McCRACKEN: That's pretty much my comments for

4 that area of the discussion.

5 MR. CAMERON: Thanks, Ralph. I think that that

6 information was helpful already to the NRC.

7 Abby?

8 MS. JOHNSON: My name's Abby Johnson. I'm the

9 nuclear waste advisor to Eureka County, Nevada. I'm

10 absolutely thrilled to have people from Crescent County and

11 Eureka County at tonight's meeting. And especially such

12 articulate spokes person.

13 I have a couple of areas to touch on. Anybody

14 who's heard me talk before knows I talk a lot about public

15 participation and public access and that sort of thing. Let

16 me be the first person to stand up and say that we need more

17 time to comment on this rule. And I hope I'm not the last

18 person to stand up and say that we need more time to comment

19 on this rule. We've got several rules coming down. It's

20 very hard to sit down and put together comprehensive

21 comments on all those things at the same time and so Eureka

22 County is one who wants more time. Six months would be

23 great, we'll take what you give us.

24 Secondly, Helen Decloney at the last nuclear waste

25 technical review board meeting made a very good point about

1 Internet access. She said, and I don't think this board
2 which is a very good board at listening, really believes
3 that there's places in Nevada that are not on the Internet.
4 So I wanted to bring to everybody's attention a
5 newsletter that just came out from the Offices of the
6 Attorney General, his office of the Consumer Advocate in
7 Nevada. I brought a copy tonight for your records that says
8 this. All the communities in Nevada that aren't there yet.
9 And my message to both the DOE and the NRC is just
10 because it's on the Internet doesn't mean that people in
11 communities that need to know about it are finding out about
12 it. Those of us that are doing oversight try our best, but
13 you need to try many different ways to communicate to get
14 your message across. And if you tell somebody it's on the
15 Web isn't enough for rural Nevada.
16 MS. KOTRA: Can you give us some other suggestions
17 on ways --
18 MR. CAMERON: Could you always speak into the mic
19 up there.
20 MS. KOTRA: Can you give us some other
21 suggestions. We want to get the, you know, the opportunity
22 to comment to the broadest possible audience. We've brought
23 flyers with mailing addresses on, but if there's some other
24 way other than through the U.S. mail that people can get
25 their concerns to us, we make it available on the Internet

1 but we do not assume that that's the only mechanism. We're
2 here tonight, we want to hear other ways to get access.
3 MS. JOHNSON: Well, I'm glad you asked because as
4 this project goes on we, we in the county anticipate more
5 interaction with the NRC just like DOE anticipates more
6 interaction. One way would be to work with the folks who
7 are staffing the county offices to try to get the word out.
8 And also to do the obvious things, like notices in the paper
9 and that kind of thing, press releases focusing the press at
10 the local level; that sort of thing. And I can have you
11 talk to me more about that at some other time as well.
12 MS. KOTRA: Great.
13 MR. McCARTIN: Okay. I thought we had a mailing
14 list for all the local governments that went out with the
15 rule, et cetera. I will double check but I thought there
16 was an extensive mailing list. If there's others we need to
17 get on that, let us know.
18 MS. JOHNSON: I think -- I'm not saying that
19 Eureka County was not notified of this meeting. All I'm
20 pointing out to you is that there are people in Eureka
21 County and in other counties represented tonight who are
22 harder to reach than the average inside-the-beltway person.
23 And so, my point is that you have to try harder to reach us
24 than you try to reach people who live in the cities. Right?
25 MS. KOTRA: Got it.

1 MS. JOHNSON: Okay. I have another point
2 regarding public participation. The woman from the ATNW
3 said they want to hold a meeting in September in Beatty.
4 Great. But while I would strongly encourage the DOE, the
5 ATNW, the NRC and the Nuclear Waste Technical Review Board
6 is to coordinate with each other. If we are not successful
7 in getting an extension to the Department of Energy's draft
8 environmental impact statement hearing and review process,
9 those hearings are likely to take place during the month of
10 September.
11 So September would be an exceptionally bad month
12 to try to have public participation. We could drive all the
13 way here and have no one show up because there's some higher
14 priority in the month of September. Now, that's just an
15 example. So I just encourage all of you agencies to work
16 together and look at each other's schedules. I know you got
17 a schedule like a year in advance, but then some people
18 think their meeting is more important than your meeting.
19 So, you know, they do leave -- if you guys could
20 work it out that would be great because we want to be able
21 to participate to the fullest and sometimes there are
22 incredible conflicts, that to those of us who are trying our
23 best, appear to have been avoidable.
24 Okay, I have two more points and then I'll shut
25 up. One is -- and this purely a layman's comment. I have a

1 really hard time explaining to my constituents here in
2 Crescent Valley why WIPP has a 15 millirem standard with 4
3 millirems for groundwater and five kilometers for the border
4 and we don't. I just don't get it. I'm sure there's some
5 answer about what Congress did in their infinite wisdom, but
6 it doesn't make any sense. So I'm trying to sit here and
7 figure out about this 20 -- the 12 miles and the 20
8 kilometers and the 25 millirems. Why do we have those
9 standards? You know, it doesn't make any sense.
10 I have another comment --
11 MR. CAMERON: Do you want an answer to that before
12 you go on?
13 MS. JOHNSON: Yes, I think I need an answer to
14 that.
15 MR. CAMERON: Can someone address what is a good
16 question about why, why a particular repository might have a
17 different standard than is proposed for this one?
18 MR. McCARTIN: Well, we did not look at the WIPP
19 standard in setting this standard. We looked at the NAS
20 recommendations that they had an overall risk number that
21 was in terms of a probability. If you take the symmetry
22 values and change that into a dose number, what the NAS
23 recommended was a dose value of, for a starting point for
24 the EPA to consider the limit was 2 to 20 millirem.
25 The NRC, as you know, we will adapt an EPA

1 standard when it becomes available. Right now it is not.
2 We look at what we -- how we license other facilities. We
3 use generally a 25 millirem standard that's generally
4 consistent with NAS recommendation of 2 to 20 as the
5 starting point. That's how we came up with the 25 millirem
6 standard.
7 Also at Yucca Mountain as people have noted, the
8 groundwater pathway is the most likely pathway for the
9 release of radionuclides. So this standard is really
10 applied totally to groundwater. We believe 25 millirems is
11 protective of public health and safety, and in addition, the
12 groundwater pathway is protected because that is the
13 dominant pathway for releases.
14 MS. JOHNSON: Now, is -- correct me if I'm wrong.
15 So it's 25, right now, you're saying it's 25 for
16 groundwater.
17 MR. McCARTIN: Well, 25 is an all pathway
18 standard.
19 MS. JOHNSON: Okay.
20 MR. McCARTIN: However, at Yucca Mountain where
21 it's expected that the releases will be primarily if not
22 totally from groundwater, that would be applied totally to
23 the groundwater pathway.
24 MS. JOHNSON: Okay. And at WIPP it's 4 millirem
25 for groundwater?

1 MR. REAMER: No, that's not a dose.
2 MS. JOHNSON: Is that right?
3 MS. KOTRA: No, not correct.
4 MR. REAMER: That's not a dose.
5 MS. KOTRA: No.
6 MR. McCARTIN: Right, the 4 millirem standard is
7 what they apply for groundwater protection at WIPP.
8 MR. REAMER: But it's not a dose standard. It's
9 not a dose.
10 MS. KOTRA: No, it's a concentration measurement.
11 MR. McCARTIN: They use that -- concentration
12 limits to apply.
13 MR. MURPHY: 4 millirems is in the rule.
14 MS. KOTRA: But not for a license though. I think
15 it's --
16 MR. McCARTIN: In the Safe Drinking Water Act.
17 MR. CAMERON: Can someone explain that?
18 MR. MURPHY: No, that, the 4 millirems, the 4
19 millirems maxi is in the WIPP standard under the Save
20 Drinking Water Act is what we call a maximum concentration
21 limit. So if you measure your groundwater and if there is
22 -- if it exceeds, if radioactivity in the groundwater in
23 your cup exceeds 4 millirems, you've violated the safe
24 drinking water standard regulations.
25 That standard has nothing to do with whether or

1 not any human being will ever come in contact with it. You
2 can exceed and violate the WIPP standard, the maximum
3 concentration level in the WIPP standard if no human ever
4 comes in contact with that radiation. So, but, you know, we
5 fully agree with that. We, Nye County says we should have
6 some that's similar and we agree with this standard. We
7 should have some similar and I don't know whether it's 4 or
8 3 or 8 is the right number, I don't know.
9 But there should be some similar additional
10 protection, a way to measure whether or not the groundwater
11 is being, you know, contaminated in the centers, we agree
12 with that. But, you know, I hope people don't confuse the
13 formula in the groundwater standard as WIPP with the 4
14 millirem dose to people living Amargosa Valley and Yucca
15 Mountain because that's not in this standard. It has
16 nothing to do with human contact whatsoever.
17 MR. CAMERON: Could the -- could Tim give us one
18 comment briefly for us on this.
19 MR. McCARTIN: Yeah. And it's also very nuclide
20 specific in terms of those MCLs that you refer as 4
21 millirem. For neptunium, a 45 millirem is one that would --
22 is comparable to what they allow in the concentration limit
23 for wetness. So that 4 millirem safe -- the Safe Drinking
24 Water Act is a very difficult regulation to follow. But
25 each nuclide has its own concentration limit and you'd have

1 to take doses from all those to see exactly what it pertain
2 to, but it doesn't -- it's quite variable.
3 MR. CAMERON: Abby, do you have one more questions
4 and then we'll --
5 MS. JOHNSON: I have one more comment.
6 MR. CAMERON: Okay.
7 MS. JOHNSON: And then I'm done. And that is I
8 really didn't understand the stuff about how kids eat less
9 so --
10 (Laughter)
11 MS. JOHNSON: So that the dose standards applies.
12 And I'd actually request that my dumb question there is that
13 in the regulation somewhere or is that an opinion of the
14 Nuclear Regulatory Commission? I heard Carol Browner of EPA
15 speak about a year ago and she was so articulate about EPA's
16 approach in general being if it's safe for children then
17 it's safe for everybody. And so this is -- I mean this as a
18 guarantee says if it's safe for adults, is it safe, safe for
19 everybody. So I'm confused.
20 MR. McCARTIN: The regulation is targeted to an
21 adult. We have done a calculation to see how this
22 translates doses for other individuals like infants and
23 children. What we have seen is that -- as Chris pointed
24 out, the sensitivity to radiation is higher for the infant,
25 but the food intake for an infant is less than adult and

1 there's sort of cancellation effect there that the doses
2 calculated are not that much different.
3 MR. JOHNSON: Well, I just don't believe it but --
4 MR. McCARTIN: Well --
5 MR. CAMERON: Okay, that last remark was that Abby
6 doesn't believe that.
7 And Janet, I cut you off. Did you have something
8 brief to say on this? An ultimate point that Abby was
9 talking about. Speak into the mic, please.
10 MS. KOTRA: We will get -- and I will see -- I
11 will make a point of getting information back to you about
12 the way NRC takes into account doses for children. The
13 models that we rely on that are supported internationally do
14 make -- it's a very sophisticated dosimetry that allows us
15 to set the standards that we do across the board. But
16 children are protected under these assumptions but it's not
17 a simple explanation.
18 And I will take your name and I will make a point
19 of getting a clearer explanation than we've been able to
20 provide this evening. I know that's not as satisfactory as
21 being able to give it to you right now, but I think you
22 deserve an answer on that.
23 The other point that I wanted to make with regard
24 to WIPP is that maximum concentration limits that apply at
25 WIPP -- and Mal is absolutely correct, that is a separate

1 standard for the groundwater. We are talking about a
2 standard here that applies; two doses that would be received
3 by a hypothetically population. That is not one dose. It
4 depends on nuclide as Tim said. So the MCLs that the EPA
5 would apply at WIPP could be -- depending on the nuclide --
6 could 40 millirem, it could be .2 millirem. It could be a
7 lot of different things. So it's not one value but it's
8 also a complex issue.
9 The other point that I think is very important to
10 remember is that that standard could be 100 time higher or a
11 100 times lower and it wouldn't make any difference because
12 there's no potability groundwater at WIPP. So, yes, you
13 know, you can apply any standard you want but if there is a
14 potable groundwater there, it's kind of meaningless. What's
15 meaningful is what -- you know, the other part of their
16 standard.
17 What we have in the situation here where we're
18 trying to come up with an appropriate standard for a site
19 that does have potable groundwater. What is safe? What
20 will be protective of people if many, many thousands of
21 years into the future or whenever the calculations show
22 releases would occur, what would be protective for people's
23 drinking and consuming that groundwater.
24 MR. CAMERON: Okay. We had a --
25 MS. JOHNSON: Just one point. It seems like if

1 you have groundwater that you know is potable then you must
2 have a more restrictive standard than if you have
3 groundwater that you can't drink.
4 MS. KOTRA: Thank you for that point.
5 MR. CAMERON: Okay, we had a couple of comments up
6 here and then we're going to go out to you, sir, okay,
7 because I know you've been waiting patiently.
8 UNIDENTIFIED VOICE: I give my time to them.
9 He'll cover it, he can cover it.
10 MR. CAMERON: Okay, good.
11 UNIDENTIFIED VOICE: Go to the next person.
12 MR. CAMERON: Bill Vasconi, brief comment.
13 MR. VASCONI: Brief comment is and it's very
14 obvious to everybody and I appreciate Nye County's response,
15 but keep in mind we're building, building this facility,
16 study this facility, taking the recommendations of
17 individuals under today's technology. That's why a good
18 many people think that we should give our educational system
19 a little more credit and indeed, leave this be open for any
20 number of hundreds of years, one, two or three. Three
21 hundred years has been mentioned, monitored for temperature,
22 monitored for water, with the capabilities, yes, of a
23 retrievable.
24 One of the things we do know is that there's a
25 good possibility coal or oil won't last 10,000 years in a

1 station either. Yucca Mountain may be a resource, if you
2 will, for energy of the future. But, again, the NRC, the
3 EPA, you should realize, DOE, there's a good many people
4 that would like to see the fact that that is a monitored,
5 retrievable installation.
6 MR. CAMERON: Okay, thank you, Bill.
7 Sir, would you like to make a comment?
8 MR. CARRUTHERS: Yes. My name is Joseph
9 Carruthers. I'm a resident of Crescent Valley and I'm happy
10 to have those people because I took a poll there in the
11 Valley there. Overwhelmingly everyone signed except the one
12 person who would be against this and we have a proposed
13 nuclear well out there that's coming to our Valley.
14 I have a two-part thing here I want to say. The
15 first one is safety and then the economics. One issue I
16 have not heard addressed here because all the focus mostly
17 tonight has been on Yucca Mountain. We're talking about 43
18 states, folks, trailers and trucks moving the stuff,
19 dangerous stuff. And we're not talking just about, you
20 know, an accident. We're talking also about terrorist,
21 theft. Many things that can happen, many things. Many
22 things that we don't even perceive at this point. We see it
23 happen every day out there. Our scientist, everybody, our
24 law enforcement. It goes beyond -- we can't even control
25 the drugs in this country.

1 If people get a hold of this stuff we're going to
2 have trouble. We're going to have big trouble and it's
3 going to cost us all in a lot of different ways. So you
4 really, really, really better think long and hard about
5 what's going on here. If outside forces get a hold of this
6 stuff or there's a accident or there's a terrorist attack on
7 it, people are going infected.
8 And number two is the economics of this thing.
9 Oh, they're dumping 18 plus billion dollars just for this.
10 If something goes wrong, it's going to be a lot, lot more
11 money. Who's going to be willing to pay for it? Steve?
12 Will you liquidate all of your assets because you made the
13 decision? How about you, Jim? How about you, Bill? Yeah,
14 there's economic opportunity for our communities. But if
15 they don't make out on it, would you do that if things went
16 wrong? Any of you? Would you say that even these decision
17 that you make for our children from here on, would you take
18 personal responsibility and not push it off on the agencies?
19 I've seen this personally. And something like a
20 movie I saw last night; the old Titanic movie. Not the new
21 one. There it was the unsinkable ship. It's the Titanic,
22 it can't sink. Well, it sunk, guys. It sunk. You know, I
23 mean it sunk. And you got to look at it this way. And it
24 could go this wrong and if it goes like this, we have a big
25 price to pay and you are going to be responsible and your

1 people for the decisions you make for all the people. We
2 have voted and we will pay for it, all of us. We're the
3 taxpayers. Chances are you guys won't have to pay with your
4 assets. We will. Thank you.
5 (Applause.)
6 MR. CAMERON: Okay, thank you, very much. It's
7 Mr. Carruthers?
8 MR. CARRUTHERS: Yes, that's right. Yes.
9 MR. CAMERON: Right. Could someone just briefly
10 address the transportation jurisdiction issue without
11 getting into a whole lot of detail for Mr. Carruthers and
12 the audience.
13 MR. REAMER: Well, transportation has not been
14 discussed tonight because transportation is not a subject of
15 this rule. This regulation that we're discussing tonight
16 just deals with Yucca Mountain. But that's not to say that
17 transportation is not important. It is very important.
18 We have regulations within the NRC regulations
19 that govern transportation that protects the people along
20 the corridors. So does the Department of Transportation.
21 They have regulations that govern the trucks and the trains
22 that move all kinds of hazardous materials. The hazardous
23 material that might come to Yucca Mountain is shipped today
24 on U.S. highways. It has an excellent safety record. But
25 perhaps you know that, I'm not sure whether you're aware of

1 that.

2 MR. CAMERON: Okay, thanks, Bill.

3 Neal, you want to add anything? Okay.

4 MS. LOUDEN: Could I ask one question.

5 MR. CAMERON: Sure. Nancy Louden.

6 MS. LOUDEN: How much radiation leaks out of the

7 casks -- I mean the casks, because this radiation is

8 something you can't see, can't feel, and, you know, it seems

9 serious to me. But does it -- I mean they say it can be

10 contained. Can it come out of the casks while it's going

11 down the highway? Is it higher, the -- those rads that are

12 come out along the highway, when you're parked next to a

13 train full of casks of nuclear waste, are you going to get a

14 higher dose?

15 MR. CAMERON: You know, that's a basic, I think

16 that's a pretty basic question because radiation is

17 mysterious to people. Can you answer that?

18 MR. McCARTIN: Very briefly. But in terms of the

19 transportation casks, there are requirements for what the

20 dose level would be within "X" feet of the cask. And it's

21 limited to keep the doses very low. What they are, I'd have

22 to get back to you on that. I'm not -- I deal with this

23 regulation not the transportation one. But there are very

24 strict regulations for what kinds -- what dose levels there

25 would be near the path for cask, but it's not zero.

1 MR. CAMERON: I think the question is, is that how
2 does radiation, be it in a shipping container or in a
3 container that's setting inside Yucca Mountain, what has to
4 happen for radiation to be released to the environment?
5 MR. McCARTIN: Well, there's certain gamma rays
6 that go through very great distances so they are not
7 contained, necessarily, by container at all. They diminish
8 the thicker the container gets. Now, in terms of the
9 radionuclide that we're most worried about at Yucca
10 Mountain, those gamma rays, once you get a few feet away
11 from Yucca Mountain the dose is essentially zero.
12 The other things are the radionuclides that leak
13 out of the container. That requires water to fall upon the
14 container, the container, itself, to de-breach. That water
15 to get inside the container, somewhat have the spent fuel
16 leached and picking up radionuclides in that water which
17 then is transported out, et cetera.
18 MS. KOTRA: I think the questions was though is
19 I'm setting next to a package, it's on a truck, am I at
20 risk. And the answer to that is; we do not allow packages
21 to transport waste as -- as Bill indicated, we regulate the
22 package. The Department of Transportation regulates the
23 trucks. Those casks can't be licensed if an unsafe dose is
24 received by anyone, and most importantly the workers. The
25 workers themselves that have to handle the stuff, have to

1 drive the truck. They're the ones that are exposed to it
2 far more than just driving up in a car and parking for a few
3 hours.
4 So the standards are very stringent with regard to
5 that. And no, the risk is not zero, but it is so well below
6 our public health and safety limits that allows us to
7 license this cask. There are also very stringent testing
8 requirements for how robust those casks have to be in the
9 case of an accident so that they won't be penetrated and the
10 material will not get out in an uncontrolled fashion.
11 MR. CAMERON: All right. And Steve Frishman on
12 this issue.
13 MR. FRISHMAN: There are standards to be kept and
14 they're actually in three different places. The one that
15 comes to mind is probably the most interesting to people who
16 think about getting caught in a traffic jam next to a truck.
17 The standard is, and you can look at it relative to what is
18 being proposed for a Yucca Mountain standard; 25 millirems
19 per year.
20 The standard 60, the weight for a transportation
21 cask is 10 millirems per hour. The equivalent of a chest
22 x-ray an hour for as long as you're next to that. And it
23 falls off very sharply as you go farther away. But that
24 standard is set because the presumption is you're not going
25 to be close to that for very long. And I also know drivers

1 who exceed their occupational dose every year.

2 MR. LOUDEN: How do you live next to the railroad

3 though and it's going back and forth during your whole life,

4 the rest of your whole life?

5 MR. FRISHMAN: You're getting it every time it

6 goes by.

7 MR. LOUDEN: Yeah.

8 MR. McCARTIN: Well, but wait a second. That dose

9 is very close to the container.

10 MR. FRISHMAN: That 60 was for the containment.

11 MR. McCARTIN: Yes.

12 MR. CAMERON: Okay. Let's go to this gentleman

13 right here.

14 MR. DEVLIN: I'm Grant Devlin and I'm a chemical

15 engineer. I've had nuclear engineering, training and

16 experience. The -- one of the things that Bill touched on

17 earlier, Congress took away any science connected with Yucca

18 Mountain. They cut it right out for it. So the terms that

19 we're hearing now are not scientific terms.

20 Scientifically demonstrable, sometime 10,000 years

21 from now that we don't know the chemistry, we don't the

22 reactions and we certainly don't know what the microbes are

23 doing. Calculate the performance, we can't do that. Level

24 of proof, reasonable criteria, reasonable assurance, these

25 are not scientific terms. There's no science involved

1 anymore in Yucca Mountain.

2 Having said that, there are some things that we

3 could add to this mix of information. There has been

4 omission and I've asked the DOE for several years to provide

5 it and they're still trying. The Nelson Limits. Nelson

6 Limits are catastrophic failure of the primary cask. Now,

7 there's a whole list of those conditions and so forth.

8 There's a whole report on it, that's missing. All of that

9 information is missing. And I -- and the NRC is asking how

10 can we better respond to -- how can you better respond to

11 our concerns. Getting a copy of the Nelson Limits to put

12 into this mix would certainly help.

13 The corridor of transport which we talked about

14 it, the plutonium moves a mile. We have a far better

15 example of that and that report is also missing. In about

16 1980, Los Alamos drilled a hole in Tosh just like Yucca

17 Mountain. Dumped some radioactivity in there and two months

18 later it was in the fish, they were uneatable in Toshibia

19 Lake several miles away. Now that report, I almost got a

20 copy of it. But that report has not surfaced either. And

21 that would be -- if you're going access some risk, I'd like

22 to see that report included in your risk assessment.

23 We also have another report right at Yucca

24 Mountain. They're doing a heat test in the rains up at the

25 surface. Two hours later the heat test dropped 20 or 30

1 degrees and that's 1500 feet from the surface. I'd like to
2 see that report in there, too. That indicates not only a
3 leaky mountain but the thing's a faucet.
4 Now, I have some good news for you. There is a
5 way to take the 72,000 tons or so, whatever the number is of
6 the waste from the nuclear reactors and transmute it, get
7 some energy out of it and you'll end up with 200 pounds of
8 waste to deal with instead of 72,000 tons. Those reports
9 are also missing. This was done in Livermore in the '60's.
10 It was done in Las Alamos up to the '80's and in the early
11 '80's we did it at Sandia when I was there. And I'd like to
12 see those reports as a part of the -- of this assessment.
13 And it certainly seems to me that with $18 billion
14 ready to go into a mountain that we should not only use far
15 less than that, but the one transmutation system that we
16 worked on at Sandia was economically viable. Because of
17 some personnel changes I'm not sure what the report said. I
18 never saw the final report. And -- but it looked to me like
19 at the time that was economically viable.
20 Livermore concluded it was not economically
21 viable. They were trying to make a power source out of this
22 kind of stuff and so did Las Alamos. They both had their
23 separate approaches and I think we should see those reports
24 and have the engineers and technical people take a look at
25 them for the point of view of maybe consider having

1 scientist look at them, maybe some engineers look at them
2 and maybe could do something that would be reasonable.
3 MS. KOTRA: Can I ask a question of the
4 commentator?
5 MR. CAMERON: And could you speak into the mic,
6 please.
7 MS. KOTRA: I just want to make sure I understand
8 what you're suggesting. Are you suggesting that NRC require
9 that DOE address these studies in their application for a
10 repository. Is that what I'm hearing?
11 MR. DEVLIN: Absolutely.
12 MS. KOTRA: Okay.
13 MR. DEVLIN: In fact, NRC should have the
14 knowledge of these reports so that they can assess what the
15 DOE is doing.
16 MS. KOTRA: Okay, thank you.
17 MR. CAMERON: Steve, go ahead and if you need any
18 more specific information, NRC, about these reports, talk to
19 Grant after the meeting.
20 MS. KOTRA: I shall, thank you.
21 MR. BROCOM: This gentleman mentioned a heat test
22 where it rained and the temperature of the heat test dropped
23 and implied that heat test was 1500 feet down in the
24 mountain. We have a large block test that's outside, in the
25 open, that's designed I think and built by Livermore. They

1 excavated around and left a big block. That's the block
2 that was heated up out in the open and it rained on the
3 block.
4 MR. DEVLIN: Oh, it wasn't down in the mountain?
5 MR. BROCOM: It was not down in mountain?
6 MR. DEVLIN: Okay.
7 MR. BROCOM: So I just want to correct the record.
8 MR. DEVLIN: All right, thank you.
9 MR. CAMERON: Thanks for that clarification.
10 We have a question out here. I know we're
11 running, getting a little late here in terms of meeting
12 time. Go ahead, sir.
13 MR. STEVENS: I just wanted a little more time to
14 address the issue regarding something that's been mentioned
15 several times. All right, it's obvious to me, I think
16 there's some other people here that it would better to have
17 it be retrievable for as long as possible and I wondered
18 what the reason was for the 50-year program of
19 retrievability and this mention of the transmuting is one
20 possibility that may come along, other possibilities may
21 come along.
22 Technology may develop that will make the material
23 more containable, better to deal with, better technology we
24 might know about in the future, couldn't even guess. So my
25 first question is why this 50-year limit?

1 MS. KOTRA: First of all in terms of address that
2 let me just make sure people understand what the 50 years
3 means. It does not mean 50 years from the first time you
4 put a spent-tool package into the repository. It means the
5 waste is in place. The Department will make a determination
6 into license application, how long it wants to keep it open.
7 When it comes to us, what we're saying is when the last
8 waste they're going to put in there is in and before they
9 make a decision to close it up, there would a period of 50
10 years of retrievability.
11 Now, that period before they seek to close it up
12 could be at least 100 years, it could be longer. We
13 understand the Department is considering an even longer
14 operations period. That 50-year period which was actually
15 part of an earlier generic rule that we did, was based upon
16 what seemed reasonable based upon what we knew about DOE's
17 plans at that time. It's part of the overall proposal upon
18 which we're seeking comment and we would welcome comments
19 for other periods which may be more suitable.
20 MR. STEVENS: Well, I was just saying it seems
21 reasonable to me to have it retrievable indefinitely because
22 you never know what technology will develop or what use
23 might be made of it.
24 MS. TREICHEL: Can I ask if you're going to
25 require DOE to show you exactly how they would be able to

1 either pull a bad cask out the repository or how they would
2 be able unload it altogether. And I was speaking in
3 reference to a case where there's a dry cask -- and maybe
4 more than one, but I know of one in Michigan where almost
5 immediately after it was loaded, NRC licensed it because the
6 vendor said that unloading that cask would be just the
7 opposite of loading it.
8 Almost immediately when it got loaded, they found
9 that there was a reason that it needed to be unloaded.
10 There was a bad route or something. It's three years now.
11 Nobody has been able to figure out how to unload the thing
12 because it was very much more difficult problem to do that.
13 I would contend -- and I'm certainly not a
14 scientist, but there's a whole lot of very smart people out
15 here, and we've seen them tonight, who are not scientist --
16 I would tell you that unloading that thing would be a way
17 lot harder job than loading it. And I want you -- I want to
18 know, and very briefly, about 10 words, will you require DOE
19 to have an absolutely foolproof, all-the-way-through system
20 for retrievability?
21 MS. KOTRA: The answer is, yes, we want them to
22 demonstrate that retrievability in the license application
23 is a part of the basis for our judgment.
24 MR. CAMERON: Okay. Thank you.
25 We're going to go back out here to Ralph McCracken

1 for some comments on the proposed rule.

2 MR. McCRACKEN: Thank you. This 125 millirems

3 you're talking about for other facilities, other places, is

4 that for people that have to exist outside the parameter of

5 the operation or is that for the people that are doing their

6 daily jobs within the operation?

7 MS. KOTRA: People outside.

8 MR. McCARTIN: That's the public dose limit.

9 There is a different dose limit for the workers.

10 MR. McCRACKEN: Thank you. That was it.

11 MR. CAMERON: Okay, thank you, Ralph. I know

12 we're running a little bit late here, but are there some

13 other comments or questions from anybody in the audience?

14 Yes, sir.

15 MR. LOUDEN: Yeah, I have a question concerning --

16 my name is Lee Louden. I'm concerned with the

17 retrievability question. Say a catastrophic event happened,

18 like an earthquake and you had to go in there and get the

19 stuff back out of the storage facility and do what with it?

20 At that point what would you do?

21 MR. McCARTIN: Well, the retrievability would in

22 the event that we felt that public health and safety was not

23 adequately protected. We would have to take it somewhere

24 else I assume. If it could not be stored safely at Yucca

25 Mountain, it would have to go somewhere else.

1 MR. CAMERON: Okay. Is there anybody who hasn't
2 spoken tonight that would want to speak or has anything to
3 say. Okay. I'm going to go to one of the Nye County
4 Commissioners who is here.
5 MR. REAMER: Chip, I can't hear you.
6 MR. CAMERON: Jeff.
7 MR. TAGUCHI: Yeah, I got a question for Brad up
8 there. You had said that the total performance assessment
9 was inadequate and that a groundwater protection standard is
10 needed. Could you explain that a little bit more.
11 MR. METTAM: I'll try. I didn't say that the
12 TSBA, to use the acronym, was inadequate. What -- and the
13 main reason I didn't say that is I don't think I understand
14 it well enough to make that decision. Our concern is that
15 the peer review panel said that the current version, the
16 current irritation of the TSBAVA, the viability assessment
17 version, in all probability didn't predict the actual
18 performance of the repository. You know, will it do better
19 in the future? Well, everybody hopes so. But I'm concerned
20 that we're basing -- you know, we're sort of building a
21 regulatory standard on a method of assessment that isn't
22 there yet.
23 And to go to the second part of the question. I
24 really feel strongly that we should have a groundwater
25 protection standard and, you know, I tend to picture a

1 release standard would be better, but if it needs to be a
2 dose standard, then the dose standard it is.
3 Because it sort of leads to the dimension depth
4 question. If you don't have a specific standard for
5 groundwater and I use that as the best example, then it's
6 possible to put all of your eggs in a cask. You know, all
7 together, if you know what I mean. All your eggs in one
8 basket. Meaning you build a really, really good cask and
9 that shows us that the repository will work. If that's the
10 case and you make a bad judgment on corrosion of a cask
11 material, that we only have 20 years of history on, for
12 example. Then that's the only basket you've got and when
13 your eggs come out, they all fall down.
14 I think that a specific standard for groundwater,
15 since it is the most likely pathway, will provide us with an
16 additional level of protection. And quite frankly, I think
17 I can also explain that to people whereas GSDA is almost
18 impossible to explain to most people.
19 MR. TAGUCHI: Thank you. There's one other item
20 here that I just wanted to clarify. You know, I didn't
21 think a portion of Mr. Dugan's question or Mr. Younghans
22 question was answered to my satisfaction.
23 In this specific situation, let's assume that, you
24 know, we're talking about assumed leakage and contaminations
25 to the groundwater system. Okay. In that specific event or

1 in a specific event and it forces your situation, there is
2 really nothing that you can do if contamination should occur
3 on either one of their properties; isn't that correct?
4 MR. McCARTIN: Are you talking about cleaning up
5 the groundwater after it's contaminated?
6 MR. TAGUCHI: Yeah. Yeah.
7 MR. McCARTIN: Can we -- yes, there's very little
8 you can do. Now, be aware there is the performance
9 confirmation period where you would be monitoring the
10 behavior of the repository over that whole time period much
11 closer and anything obviously leaking early on would be
12 caught long, long before anything would get far away from
13 the repository. That performance confirmation period is a
14 very important aspect of the repository.
15 But you're right. I mean groundwater
16 contamination is very difficult to deal with. There are
17 some cases where pump and treat has been used to clean up
18 aquifers. But in very limited situations.
19 MS. KOTRA: Can I take that from a different point
20 of view.
21 MR. TAGUCHI: Sure.
22 MS. KOTRA: Right, I don't want to leave the
23 impression that the regulator or, and I'll let DOE speak for
24 itself on this. But certainly from the regulator's point of
25 view the intent here is not to close our eyes and wait until

1 somebody says, "Whoops, it 26 millirem, we got to do
2 something, guys." That's not what we anticipate.
3 What we are saying is that if we can't have
4 reasonable assurance that it's never going to get above that
5 and that means by performance confirmation for a very long
6 period of time. If it suggests that our models are wrong,
7 if it suggests that it could, the doses could higher, before
8 anything ever gets out, you know, there's a corrective
9 action has to be taken. All the way up to saying, no, the
10 license shouldn't be granted. Or, no, the license should be
11 terminated and the waste should be moved somewhere else.
12 Or, no, there needs to be better monitoring, closer in, as
13 an early warning. There's a whole lot of things that we can
14 do, but we're not going to be asleep at the wheel until the
15 26 millirem dose is measured. I want people to be clear on
16 that.
17 MR. TAGUCHI: Okay, Mr. Dugan, was that one of the
18 issues that you were asking about, you know, is the
19 contamination factors effecting your property.
20 MR. DUGAN: Oh, yeah, that's what I wondered is
21 what are they going to do about if -- say if we have an
22 earthquake and it tears that down --
23 MR. TAGUCHI: Well, the other thing I assume that
24 if Yucca Mountain --
25 MR. DUGAN: And then if the contamination is bad,

1 what are they going to do about it. That's what I wanted to
2 know.
3 MR. TAGUCHI: Yeah, the answer is there's nothing
4 that they could -- very little that they could do once that
5 contamination surfaced.
6 Now, is there anything on the backside that you
7 could possibly do for him in that -- specific event? Or
8 anybody?
9 MR. McCARTIN: I'm not sure --
10 MR. TAGUCHI: Should be consideration of all of
11 this.
12 MR. McCARTIN: I'm not sure I understand the
13 question. I mean in terms of when contamination gets to a
14 point, is there anything we can do about it?
15 MR. TAGUCHI: Well, we know that there's some
16 groundwater issue to take care of, but what would you do for
17 him in the event that that should occur in his situation?
18 What can you do for him?
19 MR. DUGAN: Yeah, what would happen?
20 MS. KOTRA: Well, okay, the --
21 MS. TREICHEL: Well, even if you caught it at a
22 point way before it got to him, that's the source of his
23 recharge. The thing is, if you were stopping it at the
24 repository because you thought his water was going to get
25 screwed up, then you'd be stopping recharge into this area

1 that they depend upon for --

2 MS. KOTRA: I think he specifically asked about an

3 earthquake that would be disruptive of the casks.

4 MR. TAGUCHI: Natural forces or whatever they are.

5 MS. KOTRA: Yeah. And what we're trying to say is

6 that in the course of the analysis the DOE has to present to

7 the regulator, they have to analyze for disruptive events

8 such as earthquakes and show that their casks are robust and

9 will not be breached because of that.

10 MR. CAMERON: To get to the commissioner's

11 question, maybe we could ask Neal Jensen from our office of

12 general counsel. Neal, what types of liability provisions

13 -- perhaps it wouldn't be NRC's responsibility, but what

14 happens if someone's groundwater is contaminated in a

15 situation like that. I think that's what you want to know.

16 MR. TAGUCHI: Yeah, I think that's good. I know

17 it could be a long time from now, but I do know that force

18 majeure could occur -- but if -- when Mr. Younghans was

19 talking about the contamination already coming off the site,

20 what could be a possible response to this?

21 MR. CAMERON: Let me take this up to Neal Jensen

22 and have him try to -- you got the tough question.

23 MR. JENSEN: The Nuclear Regulatory Commission

24 does not --

25 AUDIENCE: We can't hear him. We can't hear you.

1 MR. JENSEN: The Nuclear Regulatory Commission
2 does not deal with product reliability.
3 (Laughter)
4 MR. JENSEN: I've never been asked to deal with
5 this and it's a scenario I'm not familiar with. There is
6 the federal recorded claim by authority act, however, and
7 that's about the only thing I can think of. But as long as
8 that's -- the federal authority claim by authority act is an
9 act that would entitle a person to sue the federal
10 government for damages to his or her property stemming from
11 trying to protect under this scenario.
12 MR. CAMERON: And the only other thing that I
13 could offer along those lines is that as part of the
14 repository siting process, that you might want to set up
15 some type of framework that would deal specifically with
16 questions like that.
17 And we're going to Judy Schankle and then we're
18 going to go back to you. Judy.
19 MS. SCHANKLE: Retrievability. Seeing that DOE
20 has not retrieved this waste from what, 25 utility
21 companies, how would you assure that DOE would retrieve this
22 waste from Yucca Mountain in a timely manner if you did find
23 this un-retrievable?
24 MS. KOTRA: There's a demonstration that they have
25 to make before the license is granted. And before that

1 could be granted, they would have to make a demonstration
2 that the Commission would find acceptable.
3 Now, what you're asking is, okay, supposing that
4 acceptance has been given, a license has been issued and
5 they have not lived up to -- or they have not implemented an
6 acceptable plan or their plan wasn't as good as we thought
7 it was or they thought it was. Then if that is in violation
8 of our regulations, then we would issue a notice of
9 violation. We would basically threaten to withdraw the
10 license or ask -- take action against them for that.
11 MS. SCHANKLE: How come you've issued the license
12 in the first place when this is occurring?
13 MS. KOTRA: It's based upon -- I think what she's
14 asking is, you know, if we are assured that their
15 retrievability plan is adequate and they've made that
16 demonstration and we found it acceptable and issued a
17 license, and she's saying, well, what if you're wrong, you
18 know. And we're saying there are opportunities to, prior to
19 closure to say, you know, come back, you've got to do more
20 or you can't emplace any more waste or you have to take
21 waste that's there.
22 MR. CAMERON: Okay, we're going to go back, we
23 have a question back here. Yes, ma'am.
24 MS. YOUNGHANS: My name is LaRene Younghans and I
25 have a comment and it kind of goes along with what Abby from

1 Eureka said. She asked if you guys would coordinate the
2 different agencies and the different meetings. I'm now
3 taking a different version of that. The different folks
4 from DOE, I attend all kinds of meetings and everybody says,
5 "That's the other DOE." We're not addressing those issues.
6 (Laughter)
7 UNIDENTIFIED SPEAKER: That's right.
8 MS. YOUNGHANS: When you're talking about the test
9 sites, you're not talking about Yucca Mountain. When you're
10 talking about this stuff from -- off of area 20 coming down
11 into our water aquifers. We're not talking about that. I'm
12 asking DOE to get together with all of the other little DOE
13 groups and give us an honest answer.
14 (Applause)
15 MS. KOTRA: I think that's a question for DOE.
16 MR. CAMERON: Okay, thank you for that comment.
17 Sounds like there was a lot of accord for that. Anybody
18 else that we haven't heard from tonight that wants to talk
19 before we close up.
20 MS. DEVLIN: Oh, I have a very important, very
21 important --
22 MR. YOUNGHANS: Hey, wait, wait.
23 UNIDENTIFIED SPEAKER: Isn't DOE respond going to
24 her question?
25 MS. TREICHEL: Are you going to get it together,

1 Steve?

2 MR. CAMERON: Do you want to respond to that,

3 Steve?

4 MR. BROCOM: There have been a lot of questions

5 about impact to the environment. The only thing I want to

6 say here, and several of you have asked about

7 transportation, another -- we have an Environment Impact

8 Statement that will be issued in July of this year that will

9 address most of the issues that were brought up in this

10 meeting today.

11 MS. YOUNGHANS: Wait, you don't get my point. You

12 were are only going to address the transportation issues

13 about Yucca Mountain, right?

14 MR. BROCOM: We're going to address issues

15 relating to Yucca Mountain.

16 MS. YOUNGHANS: Okay. What about the radiation

17 and stuff that's flowing from the test sites now? That's

18 already in control of some weapon's test?

19 MR. BROCOM: We are working with the Nevada test

20 site and we have a joint effort to coordinate all our work

21 so we can --

22 MS. YOUNGHANS: But you always say to the audience

23 when somebody asks a question about another route, opps,

24 we're not talking about that because I don't belong to that

25 part of DOE. And I don't get it. Because do you even --

1 you push these people about the transportation, we're not
2 interested, we're not talking about that issue. And one
3 meeting I was at for transportation, they told us this
4 regulation is done by the people who were right in the
5 department. We don't have any control over it.
6 And all I'm saying is that with all the DOE
7 people, you need to get somebody from DOE that reports to
8 the President or whoever out here so we can talk to all the
9 issues and not to whatever you happen to have.
10 MR. CAMERON: I think that he did indicate that at
11 least they're trying to make an effort on this radiation
12 release business to work with test site people. Is that
13 correct, Steve?
14 UNIDENTIFIED SPEAKER: Yeah, but the other --
15 MR. BROCOM: And that will also be addressed, that
16 will also be addressed in the EIS which comes out again in
17 July, a draft EIS comes out in July.
18 MS. YOUNGHANS: (Inaudible.)
19 AUDIENCE: Can't hear you.
20 REPORTER: Can't hear her.
21 MR. CAMERON: Okay.
22 MS. YOUNGHANS: Are you saying the environmental
23 thing that you're going to put is going to address --
24 MR. BROCOM: I'm going -- hold on, we have some
25 help here.

1 MS. YOUNGHANS: You're going to put everything
2 together, a whole total impact?
3 MR. VAN LUIK: Yeah, this Abe Van Luik. What
4 we're going to look at is the total impact to the area that
5 we expect to be impacted by Yucca Mountain. Which means
6 we'll be looking at essential flows from the test site, from
7 the low-level waste site on the east side. But the Oasis
8 Valley groundwater, we expect, will never merge with the
9 groundwater that we are going to be talking about in the
10 EIS. We will discuss those issues and tell you why we think
11 that's so.
12 But we are actually working together with the NTS
13 folks to understand the complete picture because you have
14 water going through Oasis Valley that eventually ends up in
15 Death Valley. Our water will probably go to Franklin Lake
16 instead and evaporate there. So there is a reason for the
17 separation but we will discuss this in the EIS. And this is
18 a draft EIS for you to comment on. So if you think that we
19 haven't done a sufficient job in that draft EIS, you tell us
20 and we'll fix it.
21 MS. YOUNGHANS: Well, that doesn't tell me though.
22 (Laughter)
23 MS. YOUNGHANS: Because I'm not just talking about
24 Oasis Valley. We're talking about the east side of Yucca
25 Mountain and I was at a meeting where the DOE people were

1 talking about the shots that they had in Yucca Flat. That
2 was coming right through 40 mile canyon and past Yucca
3 Mountain and you talk to them about Yucca Mountain and they
4 said, "I don't know if we're going to address Yucca
5 Mountain." I come to this meeting and you tell me, well,
6 we're going to put in the EIS. Well, I live on the east
7 side of Yucca Mountain.
8 MR. CAMERON: Now, just clarify that. You are
9 going to request comments on whether your conclusion about
10 the east side is correct in the draft EIS? All right.
11 There was one question. How long is the
12 performance confirmation period that you mentioned, you
13 talked about it, Tim? We had a question on that.
14 MR. McCARTIN: We would expect it to go all
15 through the entire licensing procedure which could be 100
16 years until you finally get a termination of license.
17 MR. CAMERON: Okay, thank you. We have a comment
18 or a question here from Sally Devlin.
19 MS. DEVLIN: Yes, I have a very important one and
20 that is from this book that Jack mentioned and all of these
21 books are sent to me and I want to know if you're going
22 write comments on them. And on page 98 of the Regulator;
23 "Appears to be better situated than the
24 applicant to carry the responsibility.
25 Because of the perception that any future

1 scenario developed by the applicant could
2 have been chosen beginning with decided
3 outcome."
4 MS. KOTRA: Could you say that again?
5 MS. DEVLIN: Now, that is the usual, the old
6 gobbly-gook and that's NRC's stuff. Now, what is important
7 to me is what we are going to see May 28th and I'm
8 hysterical about it is Russ Wyler of DOE handing over to
9 Lath Barrett, DOE, his boss, this entire thing about Yucca
10 Mountain.
11 And it goes on and on and what you said about DOE
12 is one hand washing the other and the one coming to the
13 proper conclusion which this little sentence says on this
14 very important report where they extracted out 800,000
15 years, but they don't talk about us.
16 Now, the opening and leaving Yucca Mountain open
17 for 50 years, well, back there in Washington, this is 300
18 years. And who's going to say it, and this goes on and on.
19 I'm just saying the public doesn't have a shot if it's one
20 DOE doing one DOE doing the one DOE.
21 And it brings up another point and that is there
22 has not been one word said about new science. That there is
23 no need for Yucca Mountain. That this high-level waste can
24 be -- what is it, Grant? Transmutated.
25 MR. DEVLIN: I talked about it.

1 MS. DEVLIN: And Grant talked about it. But
2 there's more than transmutation. Four years ago we talked
3 to a new group from the NWCRB saying microbic invasion was
4 not impossible. My vote is number one on the hit parade.
5 And at the last NWCRB meeting, the C22 that you're
6 developing as the out-of-casing for the canisters, my vote
7 is to dump the nickel and they'll poison the water faster
8 than anything else. Along with the lead and nitric sulfite.
9 And this goes on and on. They had eaten the steel
10 at SRS. I was reading these reports and I hope you've seen
11 them. They've eaten the zericloy at the Hanford tanks and
12 that's what you want to put around the canisters. Now,
13 that's all new science. Nobody ever heard of microbic
14 invasion until '81. And the last four years it's number one
15 on the hit parade. And the more I do research on this
16 stuff, the more I learn that you're not paying attention to
17 new science.
18 MR. CAMERON: Okay, Sally, can I --
19 MS. DEVLIN: One more thing. One more thing and
20 this is really the banger. I read the Congressional Reports
21 and in the Congressional Report in 1994 it clearly states
22 that $25 billion is allocated for the first repository and
23 35 billion for the second. Now, I have not heard one word
24 about these two allocations. I believe in our senatorial
25 and the rest of our people know that and you should, too.

1 MR. CAMERON: All right, thanks, Sally. I don't
2 know if anybody wants to try to put new science in the
3 context of the rule or to talk about a second repository.
4 MR. McCARTIN: Well, just a couple of quick
5 things. I mean one, the new science, I mean that's the
6 reason the performance confirmation period is there in that
7 , whatever deal we have to design and build the repository.
8 Whatever they do, that time period, it's going to be
9 uncertain, but the time period of performance confirmation
10 is that time to see are things behaving the way we expected
11 them to. And hopefully, they observe that behavior and we
12 can confirm and terminate the license appropriately. Second
13 --
14 MS. DEVLIN: How could you think we'd believe that
15 when you see this $12 million for some mean test on a rock
16 outside of Yucca Mountain --
17 MR. CAMERON: Sally, could you --
18 MS. DEVLIN: -- and which was invalid.
19 MR. CAMERON: Could you let him just finish his
20 point. Go ahead.
21 MS. DEVLIN: And we're talking science.
22 MR. McCARTIN: Second, the only other -- the NRC
23 report you're referring to was the National Research Council
24 not NRC; the Nuclear Regulatory Commission. And I believe
25 what they were referring to is that they recommended that

1 the regulator specify the exposure scenarios and that's why
2 we were specifying the biosphere and Critical Group. And I
3 think we are implementing their recommendation. And I don't
4 know if I was interpreting the quote you were reading
5 correctly, but that was my understanding of that particular
6 passage.
7 MR. CAMERON: Okay. We're going to be here if you
8 want to come up and talk to any of us about any of these
9 issues. But we're going to adjourn the meeting right now
10 after one final comment.
11 (Laughter)
12 MR. CAMERON: From our friend from Oasis Valley.
13 Is that right? Okay.
14 MR. DUGAN: I'm concerned -- we've addressed what
15 happens when the gas dried body is and it's up on the
16 mountain, when it's in the hole. But what if one of these
17 70,000 metric tons of waste, just one cask breached say
18 right on top of Yucca Mountain, with a good westerly wind.
19 Could you tell me about that? What will happen?
20 MS. KOTRA: We have regulations in the proposal
21 for the operational period. There are going to be --
22 MR. DUGAN: No, no, what if breaks wide open?
23 MS. KOTRA: I'm getting --
24 MR. DUGAN: The regulations aren't do anything.
25 MS. KOTRA: Okay. What I'm saying is that the

1 facility is being built to have hot cells to handle breached
2 containers. And the Department is required an --
3 MR. DUGAN: I'm not talking about -- before it
4 gets in the holes, on the highway.
5 MS. KOTRA: That's what I'm talking about. And
6 the Department is required to provide an emergency plan that
7 will protect people in the event of an accident. And that
8 is -- just like every other applicant is required to do.
9 MR. DUGAN: I understand. I understand. What are
10 your calculations for how many people will die from one
11 breached canister?
12 MS. KOTRA: None.
13 UNIDENTIFIED SPEAKER: Good question.
14 MR. McCARTIN: Zero.
15 MR. DUGAN: None?
16 MS. KOTRA: None.
17 MR. DUGAN: None?
18 MS. KOTRA: None.
19 MR. CAMERON: Okay. And talk to -- talk about
20 this afterwards. We do have one process question to go and
21 Tim you can talk about this later on. Last thoughts, last
22 question. Go ahead.
23 MR. McCRACKEN: Thank you. In the last few
24 minutes both of you have said -- and the crux of your answer
25 is; "We'll terminate the license" or "we'll pull the

1 license." Well, that's fine. Does that mean when you pull
2 the license, you terminate the license, DOE is off the hook
3 and there's this mess setting there? Is there a procedure
4 that's written down in your proposal to have somebody else
5 go in and clean up this mess that is there because -- that
6 existed because you can terminate the license? It's all
7 right saying, well, okay to the average drunk. Well, we're
8 going to pull your license after you there's manslaughter.
9 Well, it's a little late. Thank you.
10 MR. CAMERON: Okay, Ralph. Do you want to make --
11 MR. McCRACKEN: This is written down that after
12 you pull the license this or that's going to happen and
13 who's going to do it?
14 MR. CAMERON: Quick answer and then we're going to
15 close up. If you have a quick answer. If you have an
16 answer.
17 MS. KOTRA: I would prefer Neal address that in
18 terms of, you know, legally what we're --
19 MR. CAMERON: Okay.
20 MR. JENSEN: I think the question was of
21 enforcement and the violation in the license could not
22 determine that until the licensee had corrected the
23 violation. The NRC would have the right in this area as the
24 regulatory authority over DOE during the operational period.
25 So the NRC would be able to use some enforcement authority

1 to require DOE to take whatever steps that was necessary to
2 solve the problem.
3 MR. CAMERON: Okay.
4 MR. JENSEN: Their license isn't terminated until
5 DOE has made some assessment.
6 MR. CAMERON: All right, and maybe you can talk
7 more to Ralph about that. You've been a really great
8 audience. You made some really good points and I know the
9 NRC was listening, and we all thank you and we'll evaluate
10 the comments. Thank you very much.
11 (Whereupon, the above-entitled matter concluded at
12 10:00 p.m.)
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