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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD HEARING

In the Matter of
U.S. Department of Energy
high-Level Waste Repository
Docket No. 63-001-HLW
ASLBP No. 09-892-HLW-CAB04
January 26, 27, 2010
9:00 a.m. PST
Before the Administrative Judges

CAB04
Judge Thomas Moore, Chairman
Judge Paul S. Ryerson
Judge Richard E. Wardwell

1 A P P E A R A N C E S

2 For the Nuclear Regulatory Commission Staff:

3 Margaret Bupp, Esq.

4 Adam Gendelman, Esq.

5 Andrea Silvia, Esq.

6 For the Nuclear Energy Institute:

7 David Repka, Esq.

8 Rodney J. McCullum, Esq.

9 For the Department of Energy:

10 Donald Silverman, Esq.

11 Ray Kuyler, Esq.

12 For the State of Nevada:

13 Martin Malsch, Esq.

14 John W. Lawrence, Esq.

15 Charles Fitzpatrick, Esq.

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18 INDEX:

19 January 26 Oral Arguments Page 3

20 January 27 Oral Arguments Page 271

21 (continued from 2-26-2010)

22 Certificate of Reporter Page 344

23

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P R O C E E D I N G S

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>> JUDGE MOORE: Good morning, ladies and gentlemen. I'm Judge Thomas Moore. On my left is Judge Richard Wardwell, and on my right is Judge Paul Ryerson. Construction Authorization Board 04 is hearing argument today on the 11 legal issues identified in the Board's Order of October 23rd, 2009.

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The terms of the oral argument were set in our earlier January Order of January 11th, and pursuant to that Order, the issues will be heard sequentially, starting with legal issue 1. Each side as identified in the Order, will have 20 minutes for argument on each issue, beginning with the proponent of the involved contention. Only one counsel for each party will be allowed to argue with respect to any one issue.

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Counsel arguing first may reserve a brief time for rebuttal, but I would caution counsel that rebuttal is just that, to be strictly confined to responding to arguments advanced by opposing counsel. The Board will keep an eye on the clock, and on those issues in which the Board has numerous questions, we will take that into account in

1 allocating your time. By the same token, counsel
2 certainly need not feel compelled to use all its
3 allotted time in the absence of Board's questions,
4 and in that regard, in that regard, the Board is
5 fully familiar with your written filings.

6 The argument this morning is being
7 recorded on the DDMS. It is also being web-streamed
8 for public viewing at the links published in our
9 January 11th Order as well as being broadcast on the
10 agency's broadband network.

11 We will begin this morning by having
12 counsel identify themselves for the record. Please
13 state your name, affiliation, and who you represent.
14 And we will start with DOE.

15 >> MR. SILVERMAN: This is Don Silverman.
16 I'm with Morgan, Lewis & Bockius, representing the
17 Department of Energy.

18 >> MR. KUYLER: Ray Kuyler, also with
19 Morgan Lewis, Department of Energy.

20 >> MR. MALSCH: Marty Malsch, representing
21 the State of Nevada.

22 >> MR. LAWRENCE: John Lawrence, State of
23 Nevada.

24 >> MR. FITZPATRICK: Charles Fitzpatrick,
25 State of Nevada.

1 >> MS. BUPP: Margaret Bupp, NRC staff.

2 >> MR. GENDELMAN: Adam Gendelman, NRC
3 staff.

4 >> MS. SILVIA: Andrea Silvia, NRC staff.

5 >> MR. REPKA: David Repka, representing the
6 Nuclear Energy Institute; and on my right is
7 Mr. Rodney McCullum, who's the Director of Fuel Cycle
8 Services for NEI.

9 >> JUDGE MOORE: Thank you. Although there
10 are only four parties arguing this morning, I'm sure
11 the court reporter would greatly appreciate it, as
12 well as those reviewing this on the webstream or the
13 broadcast, if counsel would identify themselves and
14 the party they represent before they start each
15 argument. At a convenient time this morning, the
16 Board will take a brief recess and then at
17 approximately noon or thereabouts, at a convenient
18 time, we'll take a 90-minute luncheon recess. We'll
19 then re-convene with at least one brief afternoon
20 recess and go until somewhere between 5:00 and 6:00,
21 or perhaps a little later, if we're within striking
22 distance of finishing all 11 issues. If not, we will
23 continue with the legal arguments tomorrow after the
24 case management conference, which will convene at
25 9:00 a.m.

1 If the parties have nothing for us, before
2 we start, then we will commence with legal issue 1,
3 and NEI, if you would approach the podium and begin.

4 >> MR. REPKA: Good morning. My name is
5 David Repka and I'm representing the Nuclear Energy
6 Institute. I would ask to reserve two minutes for
7 rebuttal. Legal Issue No. 1 relates to NEI's Safety
8 005. Contention NEI Safety 005 asserts that the DOE
9 plan for criticality control in the disposal packages
10 is unnecessarily conservative and will result in
11 disposal control rod assemblies being required to be
12 inserted into many waste disposal packages to meet
13 post-closure performance objectives. The result of
14 this conservative approach will be that workers at
15 Part 50 Reactor license sites, who will be required
16 to install those control rod assemblies, will receive
17 occupational doses that are unnecessary.

18 Our contention is that those occupational
19 doses and the design of the repository that would
20 use these control rod assemblies is contrary to the
21 requirements that DOE maintain doses, occupational
22 doses As Low As Reasonably Achievable or ALARA. DOE
23 and the staff both take the position that those
24 consequences to Part 50 Reactor licensees do not
25 need to be considered. Both the staff and the DOE

1 are taking a narrow, legalistic approach that will
2 lead to a result that's contrary to safety. Their
3 approach would lead to a situation where DOE, in the
4 design of the repository, has no accountability with
5 respect to the radiological dose that that design
6 will cause.

7 Their position would result in only one
8 narrow offsite population not being protected by
9 NRC ALARA requirements, Part 50 Reactor workers. To
10 be sure, NEI supports the Yucca Mountain repository.
11 NEI's contention is simply that this one limited
12 aspect of the license application is unnecessary,
13 contrary to regulations and contrary to protection
14 of public health and safety. The waste --

15 >> JUDGE MOORE: Counsel, if Part 50 by your
16 statement, clearly covers reactor employees, then why
17 do you need duplicative coverage under Part 63?

18 And, second question is, where do you draw
19 the line between fuel handling and shipping or
20 transportation?

21 >> MR. REPKA: Okay. Trying to address your
22 first question first. I do not believe there is
23 duplicative coverage. The ALARA obligation that
24 extends to DOE is a design obligation and relates to
25 the design of the facility and the related aspects of

1 the waste package preparation. Fuel handling is the
2 Part 50 Reactor licensees' responsibility, and as DOE
3 has made the argument that they don't control fuel
4 handling. And we believe that's a strong man
5 argument. We're not asking DOE to control fuel
6 handling. Reactor licensees are responsible for
7 maintaining doses ALARA with respect to inserting the
8 control rod assemblies and doing those things that
9 they can control. What Part 50 Reactor licensees
10 don't control is the design of the repository, the
11 design approach that would require the control rod
12 assemblies be inserted in the first place. And
13 that's the activity that is unnecessary. That's the
14 activity for which DOE has control and has
15 accountability and has responsibility under the ALARA
16 regulation that applies to both operation and design
17 of the facility. An example --

18 >> JUDGE MOORE: Can -- yeah, can I add a
19 hypothetical on this then?

20 If a plant was so designed, let's say it's
21 a new innovative plant that has been licensed but
22 has been so designed that it requires a different
23 type of fuel or, for instance, no cladding on the
24 fuel, hypothetically, so it's an action by this
25 plant that is requiring a fuel fabricator to do

1 something out of the ordinary, that, in fact, may
2 increase the exposures to the fuel manufacturers'
3 employees. Would your same argument apply to that
4 then?

5 >> MR. REPKA: I think in that situation,
6 there may be an obligation with respect to DOE and
7 the design, to consider whether that control rod
8 assemblies are necessary for that facility. And if
9 the cladding design has some effect on the
10 criticality analysis so that it may be necessary to
11 insert the control rod assemblies, then the control
12 rod assemblies will be necessary. The point is they
13 have to consider the clad design, they have to
14 consider everything in the design process for the
15 repository. And if conservatism is leading them to a
16 result that is contrary to safety, they can address
17 that there. I think that's a situation that, that
18 would be a given, that DOE would have a
19 responsibility to at least consider.

20 An example that I would come up with is
21 one where suppose that DOE were dictating that the
22 waste needed to be packaged in egg cartons, paper
23 egg cartons, and said, you know, this is how it has
24 to be packaged at the site, it'll be put into a
25 transportation cannister, it'll be safe for

1 transport, but while it's at the site, go ahead and
2 put it in these egg cartons. Well, that's something
3 that they need to consider the ALARA implications of
4 that.

5 If it was the -- if the licensee was
6 designing the package, the licensee would control
7 that and would be forced in their process -- their
8 design process to consider the ALARA dose of
9 packaging in egg cartons. There is no reason that
10 DOE shouldn't have to consider that, too.

11 >> JUDGE MOORE: But if the NRC required
12 that, would they have to?

13 >> MR. REPKA: If the NRC required --

14 >> JUDGE MOORE: Does the regulator have
15 to consider ALARA?

16 >> MR. REPKA: I think that there is no
17 regulatory obligation the same as would apply to the
18 licensee to consider ALARA, but I certainly would
19 think that the NRC and its rulemaking process would
20 consider all the implications of its requirements and
21 certainly would address any comments or concerns that
22 were raised regarding that in its rule.

23 >> JUDGE MOORE: Is there in Part 63 or in
24 the ALARA regulations in Part 20 a general
25 requirement that ALARA be considered in design?

1 >> MR. REPKA: I think that --

2 >> JUDGE MOORE: Because there is a
3 counterpart in Part 50.

4 >> MR. REPKA: Yes, and I think that 2011.01
5 (b) extends to the design.

6 >> JUDGE MOORE: But it doesn't explicitly
7 say "design," does it?

8 >> MR. REPKA: It doesn't use the word
9 "design," but it does talk about to the extent
10 practical consider ALARA, with respect to the
11 activities of the licensees. If you then look at the
12 Yucca Mountain review plan, which is the staff
13 guidance document that DOE itself has relied upon,
14 there is, in fact, a criterion that DOE selectively
15 omitted that specifically says ALARA should be
16 considered in the design. So, this is fundamentally
17 a design issue. So --

18 >> JUDGE RYERSON: Counsel, Mr. Repka, the
19 ALARA considerations that you are talking about arise
20 out of Part 20, correct?

21 >> MR. REPKA: Correct.

22 >> JUDGE RYERSON: If Part 20 didn't apply,
23 what would be your position on Part 63 -- 63.11,
24 specifically? Would you see that as also creating an
25 ALARA obligation or totally Part 20?

1 >> MR. REPKA: I think 63 -- I think 63.111
2 is what you are referring to. I think 63.111 is the
3 regulation they are relying on that's limited to the
4 activities, to the GROA itself. I think that's a
5 very limited reading of that regulation, and I can
6 certainly say that it was not meant to preclude
7 consideration of ALARA in design, but there is
8 certainly nothing in Part 63 specific like in part
9 2011.01 (b) that, I think, extends to the activities
10 that are at issue here.

11 >> JUDGE RYERSON: So, you are relying on
12 both sections?

13 >> MR. REPKA: I think we are relying on
14 both sections and we are also, I think, a thing we
15 are relying on here is just the general obligation to
16 protect public health and safety. And certainly in
17 NRC case law, I think it's well established with the
18 contention can plead non-compliance with the specific
19 regulation, but also can plead that there is a gap in
20 the regulations, where there's a safety issue. And
21 if nothing else, we believe that this aspect of
22 design element would leave out an important safety
23 consideration of an important radiological dose that
24 should be considered.

25 >> JUDGE WARDWELL: Back to your example of

1 the egg carton enology. Doesn't that say, then, the
2 heart of your contention here has nothing to do with
3 conservatism or cost? The egg carton analogy would
4 be less conservative and less costly. So, in fact,
5 to what-degree does your contention rely on these
6 statements that you have throughout it relating to
7 cost and conservatism?

8 >> MR. REPKA: Yeah, and I think -- I was
9 going to address that with respect to the second
10 aspect of this issue. I think the contention has
11 been characterized as being one about cost. I don't
12 think it's one about cost at all. I think the
13 contention is about criticality and compliance with
14 the criticality requirements and the conservatism and
15 the implications of that are primarily dose
16 consequences. You know, in fact, this is a -- the
17 secondary thing is these, these control rod
18 assemblies will lead to increased costs, but they
19 will also lead to increased doses. So this isn't a
20 situation where we're arguing that increased doses
21 ought to be ignored, because in order to save money.
22 It's the opposite. It's compelling increased doses
23 at increased cost. But the costs are very much a
24 tertiary concern and an implication of what's going
25 on. The contention, again, is really about

1 criticality and it's about occupational dose that
2 will result.

3 >> JUDGE MOORE: Counsel, did this issue
4 arise only when DOE switched tracks a number of years
5 ago, two or three, and declared it was going to have
6 a clean GROA, if you will, and dispensed with the wet
7 transfer storage operation that was originally
8 planned?

9 >> MR. REPKA: That is quite likely. I do
10 not know the answer to that. In fact, I will consult
11 with my technical adviser and come back to that when
12 I come back for rebuttal.

13 >> JUDGE MOORE: Assume for a moment that
14 DOE had a transfer facility at Yucca Mountain, and
15 ignore your tad cannister arguments, would this issue
16 even be before us?

17 >> MR. REPKA: It would not, because
18 certainly DOE would have no objection to the
19 content -- objections they have raised would not
20 apply and that's the point we've made is that if you
21 took the logic of pushing activities offsite, you
22 could push all, you know, any number of repackaging
23 activities offsite.

24 >> JUDGE MOORE: This goes back to my first
25 question -- where is shipping and waste handling?

1 Where is that line drawn?

2 >> MR. REPKA: I think that's probably a
3 line drawn, you will know it when you see it, but I
4 think clearly here, we haven't crossed that line.
5 This is a design issue, because it's the design
6 that's requiring installing these devices that don't
7 need to be installed in the first place to meet
8 criticality. So clearly it's a design issue. If
9 there was something being done in the insertion of
10 these devices that could be done better or more
11 efficiently from a dose perspective, that might be a
12 fuel handling issue. But that's not what this
13 contention is about.

14 >> JUDGE WARDWELL: What is the net effect
15 of this contention if you were successful in it?
16 What would happen?

17 >> MR. REPKA: I think what would happen is
18 the control rod assembly inserts would not be
19 necessary and if not all cases, certainly in more
20 cases they wouldn't be necessary.

21 >> JUDGE WARDWELL: Is there a mandate on
22 the applicant to achieve the lowest degree of
23 exposure in ALARA, or to consider that in its
24 decisions?

25 >> MR. REPKA: It's to consider, it's as low

1 as reasonably achievable and it's clearly a balance,
2 which would be addressed as a factual matter, but,
3 again, here we are talking about we're not lowering
4 costs at the -- to gain we're not increasing doses to
5 lower costs. It's the opposite. We are actually
6 increasing costs and increasing doses. That kind of
7 ALARA calculation doesn't really work.

8 >> JUDGE WARDWELL: That's why you are
9 bringing up the conservatism and the cost issue in
10 here as the component that is part of the
11 decision-making process?

12 But on the other hand, the net effect of
13 this may be exactly the same design, could it not
14 be?

15 >> MR. REPKA: Well, I think what the net
16 effect of it will be, if you remove some of the
17 unnecessary conservatisms, there is an enrichment
18 versus burnup curve, that's in the application that
19 specifies when fuel is in an acceptable region versus
20 non-acceptable with respect to criticality, and if
21 you are in the non-acceptable, you need to insert
22 these control rod assemblies. That curve will move,
23 so the number of cases where you would actually have
24 to insert the control rod assemblies would change.
25 So, I think the first effect is the license and the

1 range of the enrichment burn-up curve would change.
2 Then the effect in the real world would be the
3 control rod assemblies --

4 >> JUDGE WARDWELL: Let me ask this, so that
5 you can conserve your time. Is there anything to
6 prevent DOE from looking at this and say, okay, you
7 have to look at ALARA for this and they look at it
8 and say, well, no. The conservatism that we've built
9 into this in regards to the long-term effects far
10 outweigh the short-term effects of the increased dose
11 exposures and the design doesn't change, is there
12 anything to prevent them from doing that?

13 >> MR. REPKA: The only thing that could
14 prevent them from doing that -- they could take that
15 position, if they could defend it, but that's what
16 this forum is about. This compliance with ALARA
17 requires a balancing and I think we would make the
18 argument and they would make the argument, and I
19 think we would show that that position is incorrect.

20 >> JUDGE WARDWELL: Thank you.

21 >> MR. REPKA: I apologize. I don't have a
22 watch, so I don't really -- I'm not sure where I am
23 on time.

24 >> JUDGE MOORE: I will let you know.

25 >> MR. REPKA: Okay. I think one of the

1 fundamental issues that DOE has raised here is a
2 definitional issue, and they've argued that under the
3 definitions in Part 20, that Part 50 Reactor workers
4 are not members of the public. I disagree with that.

5 I think that they are members of the
6 public, because they are offsite relative to the
7 repository. DOE relies on the definition of an
8 occupational dose in Part 20 for that conclusion.
9 But I could also look at the definition of member of
10 the public, which would exclude occupational doses.
11 So the whole definitional issue is one of, it's
12 misdirection. The two point in opposite directions.
13 It's clear to me that citing one definition without
14 citing the other doesn't work.

15 >> JUDGE RYERSON: Is that definition also
16 in Part 20, did you say? Where is that definition
17 that you just --

18 >> MR. REPKA: There is a definition of
19 member of the public in Part 20.1003, as well as
20 occupational dose. There is also a definition of
21 public dose, which refers to the fact that a public
22 dose may be one that is received by a member of the
23 public from exposure to radiation, or to radioactive
24 material released by a licensee or to any other
25 source of radiation under the control of a licensee.

1 So in this case, it points us in the direction of the
2 determinative issue being one of control. I think
3 that's something that the staff cited in their brief
4 under 20.1201, talks about control and the Staff and
5 DOE argued that these are doses that they don't
6 control. But, in fact, as we have been talking about
7 all morning, they are doses that they do, in fact
8 control, that DOE does control through the design
9 process.

10 So I think that one, the definition -- the
11 definitional issue, you know, Part 50 Reactor
12 workers are offsite. They are members of the public
13 relative to the repository and, therefore, can't be
14 excluded on that basis. But even if you assume that
15 these were occupational doses, 2011.01 (b) clearly
16 extends ALARA to occupational doses and Part 50
17 Reactor workers would be covered in that context.
18 And public dose definition points us in the
19 direction of control. And so again, we're not
20 arguing that DOE needs to control those things which
21 it can't control, but we are arguing that DOE needs
22 to control the design process and be accountable for
23 the ALARA implications in that process.

24 I think I want to just say a few other
25 words on the second aspect of this contention, just

1 reiterate what I said already in answer to a
2 question from Dr. Wardwell, the issue relates to
3 whether or not cost needs to be considered. Again,
4 I don't think this contention is fundamentally about
5 cost. It's about occupational dose and in
6 compliance with the ALARA regulation and I think
7 that the costs, we've talked about costs, we've
8 talked about dose. When we talk about costs, we're
9 really mostly concerned about the cost in terms of
10 dose, and those are things that need to be
11 considered under ALARA.

12 DOE has accountability in that context,
13 but beyond that, these are issues that can be
14 considered in addressing the licensing basis of the
15 plant relative to criticality control. The Board
16 may not -- if we assumed ALARA did not apply, the
17 Board may not be in a position to tell DOE, we don't
18 think you want to do that. Maybe they could as a
19 matter of public health and safety under the Broad
20 authority to fill a gap in the regulations. But
21 let's just assume that, you know, the Board was
22 disinclined or felt it couldn't tell DOE, you know,
23 you can do whatever you want as long as it complies
24 with our existing regulations, you have no
25 accountability with respect to the costs or the

1 occupational exposures.

2 >> JUDGE RYERSON: Hasn't the Commission
3 resolved that aspect of this issue for us already?
4 The Commission's decision affirming most of the
5 contention and admissibility decisions says our
6 regulations set a minimum safe standard for safety,
7 not a maximum. And at least I read that as possibly
8 addressing the second question that you posed. Do
9 you see it still a live question in light of what the
10 Commission has said?

11 >> MR. REPKA: I think actually, I think the
12 Commission sent some mixed messages on that, but I
13 think it is a minimum. I think the Board in defining
14 whether or not, in fact, this complies with the
15 criticality requirements meets the minimum
16 criticality requirements is still -- if that's in
17 dispute by a party, I think the Board is still free
18 to say, yes, DOE, you comply with the criticality
19 measures, we think it goes beyond the minimum. That
20 regulatory margin will give the DOE some operational
21 flexibility in the future knowing the licensing basis
22 of the plant, knowing where the flexibility is to
23 eliminate unnecessary requirements, eliminate or
24 limit unnecessary specifications, I shouldn't say
25 requirements.

1 So I think that -- I think that aspect of
2 this contention is still in play. I think beyond
3 that, the Commission talked a little bit about
4 margin in terms of the context of the contentions on
5 drip shields and said that
6 conservative -- conservatism is relevant there
7 because it goes to the issue of fundamental
8 compliance, which is also in that context was put
9 into dispute by other parties. So I think, again, I
10 think, you know, I back up and say this contention
11 is really about, A, accountability for real
12 radiological doses and, B, it's about ALARA, and C,
13 it's about what's necessary for safety.

14 >> JUDGE MOORE: Counsel, can you give me an
15 example, across the entire spectrum of NRC regulation
16 in which ALARA has not -- has not had a geographical
17 boundary?

18 >> MR. REPKA: I think that there's nothing
19 that's quite analogous to this situation. I think
20 that the parties, the staff, and DOE have raised the
21 concept of -- this would be like Part 50 licensees
22 being accountable for ALARA at fuel fabrication
23 facilities. That's not the case and I think that
24 really is a distinguishable situation because this is
25 not a case where the Part 50 licensee is dictating

1 exactly how to go about fabricating the fuel.

2 So the -- I think there is nothing that's
3 directly analogous that I can point to. However, I
4 would say that if the Part 50 Reactor licensees were
5 doing something like an egg crate design that
6 was -- that the fuel fabricators felt was leading to
7 unnecessary dose, that would be a situation, you
8 know, and I don't know that it's ever happened, I
9 don't know that it could happen, but I think that
10 that would be a situation where that ALARA dose
11 would be considered. I think what doesn't work here
12 is to argue that occupational doses are covered by
13 ALARA, doses to the members of the public are
14 covered by ALARA, but the only people in the United
15 States who aren't covered by ALARA in this context,
16 Part 50 Reactor workers with respect to the design.
17 So that's a conclusion that I think just doesn't
18 work as a matter of law or policy.

19 >> JUDGE RYERSON: Let me follow-up, if I
20 can, on Dr. Wardwell's hypothetical. Suppose DOE
21 demanded of a utility that the utility send nuclear
22 waste in egg cartons; what are the utility's options
23 at that point? Does the utility have the right not
24 to send its waste to the national repository? What
25 happens?

1 >> MR. REPKA: I think that it probably, and
2 I'm speculating here because I haven't looked at that
3 issue, but it would probably be a contract issue
4 under the standard contract for waste disposal, DOE
5 has its obligations to take the waste. The licensees
6 are going to be obligated to do certain things to
7 make that happen. So, you know, whether there is a
8 contractual remedy for licensees, I don't know, but
9 that would be the first place I'd look. I don't
10 think that there is -- I think in that context, Part
11 50 Reactor licensees would have very limited options
12 to say, we don't want to do what DOE says.

13 >> JUDGE RYERSON: Certainly, the utility
14 has more options with fuel fabricators than it would
15 have with the repository.

16 >> MR. REPKA: Correct. Part 50 Reactor
17 licensees have every incentive in the world to move
18 the material from their sites and, therefore, to
19 expedite whatever DOE needs to make that happen.

20 >> JUDGE WARDWELL: Back to your definition
21 of member of the public, it confuses me a little bit.
22 As I read 21.003, it says a member of the public
23 means any individual except when that individual is
24 receiving an occupational dose.

25 >> MR. REPKA: Right.

1 >> JUDGE WARDWELL: How -- how do you allege
2 that the workers at a -- whatever else that is
3 packaging this material, or even in an active plant
4 that are packaging this material, not be receiving an
5 occupational dose?

6 >> MR. REPKA: Well, I think that's the
7 problem with the definitions. They both exclude each
8 other. And my point is that DOE are --

9 >> JUDGE WARDWELL: Both definitions, you
10 mean the definition of the members of the public and
11 occupational dose or --

12 >> MR. REPKA: Right, they exclude each
13 other. And so I think, I would have to read those
14 regulations in concert and come to the conclusion
15 that an occupational dose is an occupational dose
16 that is on -- that you as a licensee is responsible
17 for. A dose to the member of the public is something
18 that you are responsible for. It's occurring off
19 your site. I don't think you can necessarily get
20 that out of the regulations, but the definition of
21 public dose points you to the issue of control. And
22 I think that's the only logical way to reconcile the
23 regulations is to say that it's, it's the doses which
24 you control are -- if it's on your site, it's an
25 occupational dose, if it occurs to members of the

1 public off your site, then it's a dose to the members
2 of the public.

3 >> JUDGE WARDWELL: Are you suggesting we
4 use common sense in interpreting these regulations?

5 >> MR. REPKA: That's -- I think common
6 sense or judicial prudence or something, legal
7 scholarship, one way or the other, but we can't have
8 a result where you have two definitions that are
9 encompassing and then we're carving out a third
10 category of unprotected workers.

11 >> JUDGE MOORE: Move on to your second
12 issue.

13 >> MR. REPKA: Okay, and I think the second
14 issue is the issue whether cost should be considered
15 or not. Again, I think the premise of the issue is
16 not, I disagree with the premise. I think the issue
17 is really about occupational dose and cost only
18 indirectly.

19 I think occupational dose should be
20 considered in the ALARA context and I think
21 occupational dose also needs to be considered as
22 part of addressing compliance with criticality
23 requirement to say that this may be the minimum
24 compliance with respect to criticality, but that
25 there is margin there, and the Board is free to

1 argue and conclude based on the record that there is
2 flexibility to reduce some of that conservatism to
3 save dose going forward in the future.

4 >> JUDGE MOORE: Thank you. DOE.

5 >> MR. SILVERMAN: Thank you, Your Honors.
6 Good morning. We plan to take ten minutes of the 20
7 minutes, with the Staff taking ten minutes as well
8 for all the contentions we're sharing. I'm happy to
9 be here this morning.

10 DOE's position on this contention is, we
11 think, very clear and is absolutely consistent with
12 not only the plain language of the Part 63
13 regulations, but a clear history of the
14 implementation of the ALARA requirements. And that
15 is that we are not required to take into account
16 ALARA considerations arising out of activities at
17 nuclear power plant sites or at any other site.
18 Part 63 makes it clear when it talks about --

19 >> JUDGE MOORE: Mr. Silverman, is the
20 standard contract by which DOE is agreeing to take
21 the fuel from utilities, nuclear power plant
22 utilities, have anything to do at all with the way in
23 which it is to be received?

24 >> MR. SILVERMAN: Help me out.

25 >> JUDGE MOORE: Does the standard contract

1 say that it will be delivered to DOE's door or DOE
2 will pick it up at the utility's door in X form?

3 >> MR. SILVERMAN: I am not certain exactly
4 what the standard contract says, but my understanding
5 is, if I'm answering your question, is that the
6 Department's responsibility to pick up the waste and
7 that the shipment of the waste from the reactors, and
8 I can verify this, it's my understanding from the
9 reactors to the repository is done by Department of
10 Energy or DOE contractors pursuant to DOE regulatory
11 requirements, which include occupational dose
12 requirements. They have regulations that govern
13 that. Does that answer your question?

14 >> JUDGE MOORE: Well, I was trying to see
15 whether there was an interplay between one set of
16 obligations and ALARA and the DOE design?

17 >> MR. SILVERMAN: Well, certainly one thing
18 that's clear to me is that the standard contract does
19 not modify the NRC regulatory requirements, the Part
20 20 requirements, Part 63, and the meaning and
21 interpretation of ALARA in anyway, and the scope and
22 breadth of its coverage. And in Part 63, as you
23 know, the ALARA issue comes up in the pre-closure
24 context, it is not a post-closure issue.

25 When you look at subpart K which are the

1 pre-closure standards in Part 63, you see that they
2 establish exposure limits for the storage of waste
3 by DOE at the Yucca Mountain repository and on the
4 Yucca Mountain site. That's 63.201. The
5 pre-closure standard in 63.204, which is also a part
6 of subpart K, sets a public dose standard for waste
7 managed and stored within the Yucca Mountain site, a
8 public dose standard. And Mr. Repka has indicated,
9 and we completely agree, that these are occupational
10 doses they're talking about at the reactor sites.
11 And those terms, in our view, are mutually
12 exclusive.

13 >> JUDGE RYERSON: Mr. Silverman, suppose,
14 again, I basically ask you the question I asked
15 Mr. Repka, if a utility feels that DOE's
16 requirements, with respect to the waste, are such
17 that it's going to result in unnecessary exposure to
18 its own workers, what are utility's options? Does it
19 have a choice of any kind here?

20 >> MR. SILVERMAN: Yes, it does.

21 >> JUDGE RYERSON: Well, what is its choice?

22 >> MR. SILVERMAN: First of all, it's
23 important to understand, one of the very first things
24 Mr. Repka said was this would result -- DOE's
25 interpretation would result in a requirement that

1 control rods be placed in the spent fuel containers.
2 That is not necessarily the case. The SAR itself
3 requires "adequate reactivity controls." It does not
4 specify that there be control rods.

5 I'm not a health physics expert, but it's
6 my understanding from talking with our experts is
7 that there are methods by which the reactor could
8 look, do additional analysis to determine how to
9 load those fuel cannisters, when to load them, with
10 what fuel, do additional analyses, find alternatives
11 as part of their own ALARA obligations, and it is
12 not a foregone conclusion that they have to install
13 these activity controls.

14 We do not mandate in the safety analysis
15 report. But our main point is that the regulations
16 are clear, that the ALARA obligation applies to the
17 waste managed and stored at the reactor site -- I'm
18 sorry, at the repository site. That encompasses the
19 workers at the repository site.

20 >> JUDGE WARDWELL: Mr. Silverman, if I
21 might, those regulations are entitled something to
22 the effect of activities at the GROA. And so
23 naturally the regulation itself is going to deal with
24 discussions of activities of the GROA. What I'm
25 interested in is where in those regulations does it

1 say that you do not, or that you are exempt from
2 addressing other exposures in your ALARA evaluation?

3 >> MR. SILVERMAN: 63.204, which sets the
4 pre-closure standard, these are to be read together.
5 The ALARA obligation is very much a part of the dose
6 limits regulations, sets a public dose standard. But
7 that public dose standard is for waste managed and
8 stored at the site. So what we're looking at here is
9 the dose from the activities at the site and its
10 effect on people at the repository site and its
11 effect on people who are members of the public. What
12 we're talking about here is the mutually exclusive
13 situation where we have a reactor facility, workers
14 engaged getting an occupational dose from worker
15 activities at the reactor site and --

16 >> JUDGE WARDWELL: And we're talking about
17 that in context of a requirement that is being driven
18 by the high level waste facility at Yucca Mountain,
19 DOE's activities?

20 >> MR. SILVERMAN: Well, it is not a
21 requirement, as I specified before, to put in
22 reactivity control rods. The Department of Energy
23 made a judgment about how -- that there will be
24 adequate reactivity controls, but they haven't
25 required the installation of the control rods.

1 >> JUDGE WARDWELL: But you don't know
2 necessarily of any other mechanism that might do
3 that? I mean, that's a part of the evaluation?

4 >> MR. SILVERMAN: That would do what, sir?

5 >> JUDGE WARDWELL: Help me here in regards
6 to where in the regulations are you exempt from not
7 considering occupational doses caused by your actions
8 as part of your license, whether, you know, including
9 the words --

10 >> MR. SILVERMAN: We are exempt because the
11 occupational doses are limited to exposures resulting
12 from waste stored and managed at the repository site;
13 that's 63.204.

14 >> JUDGE WARDWELL: But that's because that
15 section is entitled that, isn't it? I mean, that's
16 why it only says it in there. In there it doesn't
17 say, you do not have to consider outside activities?

18 >> MR. SILVERMAN: No, it does not, no, it
19 does not, but maybe that leads to my second point.
20 Your Honor, to the best of my knowledge -- and I
21 think the Staff may be able to speak to this as well,
22 I am, and I think the Board was hitting on this
23 earlier -- I am not aware of the ALARA requirements
24 for a particular licensee being applied to the
25 activities of another licensee, sort of what I'll

1 call inter-facility ALARA analyses. I think that
2 that is not the way the regulations have, to the best
3 of my knowledge, ever been applied.

4 There is no gap here in our view. We have
5 our obligations. The licensee has its own
6 obligation with respect to the activities it
7 controls, its employees, operating at its own
8 facilities, the reactor facilities, under the
9 control of the license -- of the different licensee.
10 And if you carry this to the extreme, this position
11 of NEI, if you just take the whole fuel cycle, for
12 example, you would have a potentially enormous
13 cross-hatching of ALARA -- inter-facility ALARA
14 analyses, which don't occur.

15 For example, enrichment facilities, there
16 are some enrichment facilities that enrich waste up
17 to 5 percent. There are some that have asked for
18 authority to enrich waste up to 10 percent.
19 Presumably, exposure to that waste would produce a
20 higher dose. I don't believe the reactor
21 facilities, I believe the enrichment facilities are
22 doing an analysis or ever had to do an analysis to
23 figure out what the dose impact would be and whether
24 that was ALARA at the reactor site.

25 The same thing with the fuel fab

1 facilities, the reactor may impose -- the customer
2 may impose some particular requirement specification
3 for that fuel they want. But that fuel fabrication
4 facility that does have its own ALARA requirements
5 for its own activities, to the best of my knowledge,
6 doesn't look forward to analyze activities outside
7 its control and the impact of those specifications
8 on activities at the reactor site. We just don't
9 think this is ever the way the ALARA requirements
10 have been interpreted.

11 >> JUDGE WARDWELL: Where would you draw the
12 line, if you, for instance hypothetically did
13 require, you, being DOE, did require that the
14 individual plants ship it in egg cartons; would you
15 also say that you're not responsible for evaluating
16 the ALARA aspects of that?

17 >> MR. SILVERMAN: The shipment?

18 >> JUDGE WARDWELL: Let's say that DOE
19 requires a shipment to come in egg cartons, like was
20 hypothetically brought up earlier; do you believe
21 that your position still holds that DOE is not
22 responsible for considering their actions on -- just
23 because it happens to be their site?

24 >> MR. SILVERMAN: Obviously, we think, you
25 know, the hypothetical suggests something that

1 wouldn't happen, but I would say --

2 >> JUDGE WARDWELL: True, but where do you
3 draw the line then, if are you implying, and in fact
4 you would agree that it would logically have to look
5 at ALARA?

6 >> MR. SILVERMAN: No, I would not. I would
7 not. I believe the ALARA regulations are clear and
8 have been applied historically for many, many years
9 to focus the analysis on the activities and the
10 effect of the activities of a particular licensee on
11 its workers and on members of the public; and that
12 any result of that would necessitate an ALARA review
13 by another licensee, such as a reactor facility with
14 respect to its own activities.

15 And I do not believe we will find, once
16 again, maybe there is an example out there, I'm not
17 aware of it, where that is the way the ALARA
18 regulations have been applied. NEI has not cited
19 any real regulation that supports their position.

20 >> JUDGE WARDWELL: Isn't the effectiveness
21 of looking at historical precedence somewhat
22 diminished by the fact that we are dealing with a
23 site-specific regulation here, though?

24 >> MR. SILVERMAN: I don't think so. The
25 site-specific regulation points us to comply with

1 Part 20. You don't get terribly far until you then
2 look at Part 20. We're applying the ALARA concept
3 which is a Part 20 analysis.

4 >> JUDGE MOORE: Mr. Silverman, you have
5 raised a matter that goes to the foundation of this
6 contention. The contention states that, the latter
7 part of it, the conservatisms will unnecessarily lead
8 to the expectation that disposal control rod
9 assemblies be inserted in some fuel assemblies at
10 nuclear power plants prior to shipment to disposal.
11 Now you have, as a matter of fact, said there is no
12 such requirement.

13 >> MR. SILVERMAN: That's correct.

14 >> JUDGE MOORE: Before we can ever get to
15 this legal issue, would that factual issue not have
16 to be decided?

17 >> MR. SILVERMAN: Your Honor, if there is
18 any question about the factual issue, I can get you
19 the citation to the SAR's section that says thou
20 shalt have activity controls, and it does not specify
21 the need for the control rod assemblies as then
22 necessary and the only means of meeting that
23 regulatory criterion that we've established in our
24 SAR, and you can take official notice of that. I
25 don't think we need a full hearing on that or

1 adjudication on that issue.

2 Should I move on to the second point or do
3 have further questions?

4 >> JUDGE MOORE: Is there any significance
5 to the fact that 20 -- Section 20.1101 (b) applies
6 only to licensees, but not applicants while the
7 definition in Section 20.1002 applies to persons?

8 >> MR. SILVERMAN: Can you refresh my
9 memory?

10 >> JUDGE MOORE: License to receive and
11 possess.

12 >> MR. SILVERMAN: 20.1101 (d), I don't have
13 that in front of me, Your Honor, that was the title
14 to that regulation. I'm sorry.

15 >> JUDGE MOORE: It is 111.01, did you say?

16 >> MR. SILVERMAN: 11.01 (d).

17 >> JUDGE RYERSON: 11.01. 11.01 is
18 radiation protection programs and (b) is just a
19 paragraph the licensee shall use to the extent
20 practical procedures and engineering controls based
21 on sound, radiation, protection principles, yada,
22 yada, yada. And doses to member of the public that
23 are as low as reasonably achievable?

24 >> JUDGE MOORE: I was just wondering one,
25 the definition -- I'm sorry, 20.110-- 20.1101 (b)

1 uses specifically the word "licensee."

2 >> MR. SILVERMAN: I probably have to look
3 at the whole reg but I don't think the distinction --
4 there's a distinction there that affects our
5 argument. Can I touch briefly on the second
6 sub-issue, is that what you'd like me to do?

7 >> JUDGE MOORE: Yes. Please proceed.

8 >> MR. SILVERMAN: Thanks. And I'll be very
9 brief. Our position is -- well, first, let me say
10 that counsel for NEI has stated that the contention
11 is not about cost. I think if you read the
12 contention, it is, at least in part, about cost, but
13 the critical issue is here that we have a legal issue
14 that we've all agreed to decide here today and that
15 is, it does relate directly to costs. And that's
16 whether we, as the Department of Energy, have an
17 obligation to meet the regulatory requirements, but
18 to do so without unnecessary expenditure of
19 resources.

20 Our position is we absolutely do not have
21 that obligation, that the Atomic Energy Act does not
22 provide any requirement except to meet the
23 requirements of the safety requirements at any cost
24 that's necessary. The Part 63 says nothing at all
25 about the need to reduce expenditures in meeting

1 regulatory requirements.

2 NEI relies on the Nuclear Waste Policy
3 Act for their position, Section 121 in particular.
4 That is the section that directs the EPA to
5 promulgate environmental standards for offsite
6 releases and directs NRC to adopt implementary
7 regulations. It is silent on the question of
8 economics and the cost of compliance. We agree that
9 the NWPA has the general policy, among others, of
10 facilitating the development of the repository, but
11 there is no directive for the Nuclear Regulatory
12 Commission to factor into its licensing process
13 economic and budget considerations.

14 That is the decision of the Department of
15 Energy. We don't think NEI has pointed to any
16 statutory or regulatory authority to support that
17 position.

18 >> JUDGE MOORE: Where does the
19 consideration of economic costs and the definition of
20 ALARA apply?

21 >> MR. SILVERMAN: It comes in -- once you
22 have the obligation to consider whether an activity
23 is as low as reasonably achievable, then you do
24 consider economic as well as other considerations.
25 But until you have that analysis -- that obligation,

1 we believe strongly we do not have that obligation
2 with respect to occupational doses at reactor
3 facilities, for activities which we do not control.
4 Then you don't get into issues of costs. And when it
5 becomes an issue of cost, it would be an issue for
6 the reactor licensee. And, again, our bottom line is
7 this is the way we believe the regulations have been
8 interpreted as far back as we can remember.

9 >> JUDGE RYERSON: You're not arguing
10 though, Mr. Silverman, that the Commission has
11 basically decided the second half of this question,
12 in the June 30 decision?

13 >> MR. SILVERMAN: In the June 30 decision,
14 I think that they've come pretty close to that.
15 That's -- that would be the decision on the appeal of
16 the admissibility issues. And I probably can't pull
17 out every quote, but on page -- bear with me one
18 second.

19 >> JUDGE RYERSON: I think 25 is where they
20 say our regulations set a minimum standard for
21 safety, not a maximum. I was wondering whether you
22 viewed that as deciding this issue for us or not?

23 >> MR. SILVERMAN: I think that that partly
24 -- that is dispositive, as well as the statement on
25 page 26, where the Commission says, "we reiterate

1 that in and of" -- this is in a footnote on page 26,
2 "we reiterate that in and of itself the assertion of
3 DOE's analysis is overly conservative, does not rise
4 to a level of admissible contention because over
5 conservatism is not an issue material to a finding
6 the NRC must make in this proceeding."

7 >> JUDGE MOORE: Thank you. Staff.

8 >> MS. SILVIA: Good morning. This is
9 Andrea Silvia for the NRC staff. With respect to the
10 first sub-issue: DOE is not required to address
11 ALARA considerations at reactor sites remote from the
12 GROA. Part 63 deals with operations at the GROA and
13 radiation and radioactive material that emanates from
14 the GROA. Nothing requires or indicates that its
15 scope includes workers at remote nuclear reactor
16 sites.

17 Furthermore, Part 20 does not direct
18 licensees to analyze how their activities affect
19 other licensees. Part 20 is concerned with
20 licensees reducing occupational exposures to their
21 own workers and limiting doses to the public. NEI
22 cites three regulations in Part 20 to support its
23 argument; 20.1002, 20.1003, and 20.1101.

24 >> JUDGE RYERSON: Ms. Silvia, what's your
25 response, though, to the contention that this is a

1 unique situation? This is a situation where the
2 utility has, I think, very limited, if any, options
3 in terms of whether it will send the waste to the
4 repository if it's constructed? Does that -- does
5 that bear at all upon your view that, well, it's
6 unusual for one licensee to have to consider
7 something that another licensee has some degree of
8 control over if the second licensee loses control by
9 reason of judgments made by the first license?

10 >> MS. SILVIA: I don't think it's all that
11 different than the situation with low level waste
12 disposal facilities, and in those cases, low level
13 waste disposal facilities do impose additional
14 requirements beyond regulatory requirements for how
15 they will accept fuel, excuse me, how they will
16 accept low level waste into their facility and as far
17 as what we're aware, the low level waste facilities
18 do not analyze ALARA considerations of their design
19 impacts at nuclear reactor facilities.

20 >> JUDGE MOORE: And the NRC does not
21 require them to?

22 >> MS. SILVIA: Correct.

23 >> JUDGE WARDWELL: Could you point to
24 anywhere in the regulations where DOE is exempt from
25 considering any increased radiological exposures

1 outside of the GROA?

2 >> MS. SILVIA: I don't think the
3 regulations specifically say that. I think it's more
4 in the way of looking at Part 20 as a whole and Part
5 63 and that there is nothing indicates the intent to
6 extend the ALARA considerations beyond the GROA with
7 respect to occupational doses received by other
8 licensees. For instance, if you look at the
9 Radiation Protection Program requirements in Part 20,
10 everything in that indicates that it was meant to
11 apply to licensee's own workers and in terms of how
12 they monitor the doses, in terms of the actions that
13 a licensee could take to actually reduce the doses.

14 A lot of the reporting requirements, for
15 instance, would be impossible for DOE to do with
16 respect to workers at Part 50 facilities.

17 >> JUDGE WARDWELL: Do you see anything
18 faulty in NEI's position, as I understand it, in
19 regards to sorting out the definitions of members of
20 the public versus the occupational dose standard
21 versus the public dose standard, in the fact that one
22 contradicts to a certain degree the others and -- but
23 when taken as a whole and considering what would be a
24 logical outcome, that, in fact, leads you to believe
25 that increased doses to other persons outside of the

1 GROA still falls within the realm of the requirements
2 that DOE must meet?

3 >> MS. SILVIA: I think NEI's asserting that
4 there is a regulatory gap, and I don't think that
5 there is with respect --

6 >> JUDGE WARDWELL: You don't see anything
7 contradictory in those three definitions, member of
8 the public, the occupational dose, and a public dose
9 when you try to sort those out?

10 >> MS. SILVIA: I think the workers at Part
11 50 Reactor facilities would be covered under the
12 licensees of the Part 50 facilities --

13 >> JUDGE WARDWELL: But there are other
14 high-level waste besides reactor facilities. I mean,
15 there is FSE sitting out there on green grass right
16 now that are going to have to make it to Yucca
17 Mountain in some fashion.

18 >> MS. SILVIA: And workers at these FSE
19 sites would be covered by the ALARA programs of their
20 licensees as well, and I think as counsel for DOE
21 pointed out, there are other actions besides
22 insertion of control rods to eliminate excessive
23 doses, so it's something that's not entirely --

24 >> JUDGE MOORE: And what are those? Could
25 you give us examples of the plethora of those that

1 might be available?

2 >> MS. SILVIA: I think, not being a
3 health-physics expert, I'm not entirely sure of the
4 realm. But I think probably the -- how the geometry
5 of the control rods are put -- or not the control
6 rods -- of the fuel is inserted into the package
7 would probably have an effect, how long fuel is aged
8 before it is packaged for transport. So there's
9 things that can be done within Part 50 or FSE
10 licensees on ALARA programs to reduce the doses to
11 the workers.

12 And the other thing to mention, I think
13 NEI is seeking to apply the ALARA principles to a
14 design parameter that's important to the
15 post-closure performance because the insertion of
16 the control rods, if it is done, would be done for
17 the purpose of preventing criticality during the
18 post-closure control period and ALARA considerations
19 as NEI agrees do not apply to post-closure
20 activities. So DOE, if the insertion of the control
21 rods is done for preventing post-closure
22 criticality, then the ALARA considerations do not
23 apply because that would necessarily entail some
24 balancing of the safety to future generations with
25 the present day costs of occupational exposures to

1 workers, which I think is something I think the
2 Commission explicitly said they were not going to
3 consider -- they were not going to require
4 consideration of.

5 >> JUDGE RYERSON: But if the exposures that
6 NEI claims to be concerned about are all pre-closure,
7 I mean, they would be exposures at utilities, I mean,
8 this is not a question of whether the adequacy of the
9 post-closure standards that would apply to the
10 general public.

11 >> MS. SILVIA: Right, but I think NEI is
12 claiming that the post-closure standard could still
13 be met even if control rods were not inserted.
14 However, one, there has been no showing that the
15 post-closure standard could be met, but even if it
16 could, it's within DOE's--it's DOE's proposal that
17 the NRC is evaluating, and if part of their safety
18 case is a certain element of conservatism, then there
19 is nothing that prevents -- there is nothing
20 from -- excuse me, there is nothing to prevent the
21 DOE from using a margin of safety in an element of
22 their design. And so I think it -- you necessarily
23 have to get into the post-closure element of the
24 design because the control rods are -- if they are
25 inserted, it will be to prevent post-closure

1 criticality.

2 >> JUDGE RYERSON: In other words, you're
3 saying to make the evaluation that would be necessary
4 to consider the present exposure at a utility or the
5 nearly present exposure, you would have to get into
6 issues that the Commission has enclosed, which is the
7 importance of maintaining the post-closure levels and
8 that's already said that's governed by a regulation,
9 that's not something that could be waived. Is that
10 essentially your argument?

11 >> MS. SILVIA: Yes.

12 >> JUDGE MOORE: Counsel, Section 20.1002,
13 entitled "Scope" is the general provision that
14 applies Part 20 to Part 63, and hence incorporates
15 ALARA. If -- with that in place, isn't 63.111(a)(1)
16 totally and completely redundant and unnecessary,
17 unless we have a case of the specific defining the
18 more general? And aren't -- must not the regulations
19 be read that way? If Part 63 applies -- oh, I'm
20 sorry. If Part 20 applies across the board, as it's
21 been suggested, then why do you need 63.111(a)(1)
22 that specifically applies it to the GROA?

23 >> MS. SILVIA: I don't think you do need
24 the 63.111. I think, in this case, they are
25 redundant.

1 In addition to the plain language of Part
2 20, the Regulatory Guide 8.10 describes the general
3 operating philosophy acceptable to the NRC staff as
4 a necessary basis for a program of maintaining
5 occupational exposures to radiation as low as
6 reasonably achievable.

7 The Reg Guide 8.10 states that any program
8 for keeping exposures ALARA requires two things;
9 One, a management commitment to ALARA and, two,
10 radiation protection personnel who remain vigilant.
11 The discussion in this reg guide clearly indicates
12 that the radiation protection program applies only
13 to the licensee's facility, as discussed earlier.

14 Part 20 also contains and controls
15 reporting requirements that require knowledge of
16 information only the licensee would have about its
17 own employees. This indicates that the licensees
18 would only be required to apply the ALARA principle
19 to their own facility. Furthermore, ALARA embodies
20 the principle of reasonableness and practicality.
21 It's reasonable and practicable for the licensees to
22 consider and be responsible for ALARA considerations
23 at their own facilities, not facilities of other NRC
24 licensees who have their own ALARA programs to
25 implement.

1 >> JUDGE WARDWELL: Just for completeness, I
2 assume your statement in regards to a question I
3 asked that you don't know of any specific regulation
4 that exempts it, likewise, that reg guide doesn't
5 exempt them, detract them from looking beyond the
6 GROA?

7 >> MS. SILVIA: Correct, yes, Your Honor.
8 If there is no further questions on this first issue,
9 I'll go on to the second issue.

10 >> JUDGE MOORE: Thank you. Move on.

11 >> MS. SILVIA: DOE does not need to
12 demonstrate that it meets safety and environmental
13 standards without any alleged unnecessary expenditure
14 of resources. With respect to financial costs and
15 it's ruling on the admissibility of contentions, the
16 Commission has already stated that cost and delay are
17 not material to this proceeding. Similarly, the
18 Commission agreed with the staff that with respect to
19 NEI Safety 4, that NEI cited no legal requirement
20 that before the Staff can make the safety findings
21 associated with the seismic review of the
22 applications, the Staff must first find that the
23 design is not too conservative, that the associated
24 costs are not excessive.

25 The Commission also stated, as Judge

1 Ryerson pointed out, that our regulations set a
2 minimum standard for safety, not a maximum.
3 Therefore, asserting only that a design is too
4 costly or too conservative is not enough to bring it
5 within the Commission's purview.

6 >> JUDGE RYERSON: Ms. Silvia, your position
7 or the Staff's position, then, is that the second
8 half of this issue is foreclosed, has been decided by
9 the Commission; is that correct?

10 >> MS. SILVIA: I think the Commission
11 clearly stated if the issue was only
12 accepted -- excessive.

13 >> JUDGE RYERSON: Costs unrelated to ALARA?

14 >> MS. SILVIA: Yes.

15 >> JUDGE RYERSON: Your view is that the
16 Commission decided that we don't have to?

17 >> MS. SILVIA: Right, I think the
18 Commission has already ruled on that, yes. With
19 respect to environmental costs, NEPA does not require
20 a party to accomplish its purpose without any
21 unnecessary expenditure of resources and with respect
22 to dose costs under ALARA, there is nothing cited in
23 the case, there is nothing in the cases cited by NEI,
24 nor in any case has the Staff found that indicates
25 the Commission will direct a license applicant to

1 reduce the safety margin in order to avoid
2 unnecessary expenditures.

3 The NRC staff ALARA guidance states that a
4 cost benefit analysis may be helpful in arriving at
5 the judgment, i.e., the ALARA decision, but it
6 should not be the decisive factor in all cases and
7 that's from Reg Guide 8.8. If an element of DOE's
8 design is needed to provide adequate protection of
9 public health and safety, ALARA considerations would
10 not override that design feature.

11 To the extent that a design feature is
12 needed to satisfy the post-closure dose standard,
13 ALARA would not apply. The ALARA principle deals
14 with optimizing the reduction of potential doses
15 from radiation to members of the general public and
16 workers. It does not require consideration of
17 whether a specific expense is unnecessary. Although
18 ALARA considerations involve weighing costs and
19 benefits of achieving further reductions that lower
20 regulatory limits, they should not be used as a
21 vehicle to second guess every aspect of a license
22 applicant's proposal. Thank you, Your Honor.

23 >> JUDGE MOORE: Thank you, Counsel. NEI,
24 take two minutes for rebuttal.

25 >> MR. REPKA: Thank you, Judge Moore.

1 David Repka for NEI. Just a couple of points.
2 First, Judge Moore, to respond to your question, you
3 asked about what caused this situation with the
4 packaging at the waste sites. It was a result of the
5 change in DOE to go through the transportation aging
6 and disposal of cannisters and do the repackaging
7 offsite. What -- if the repackaging was being done
8 offsite, I wouldn't concede, however, that we
9 wouldn't necessarily be concerned. NEI does have
10 union members who are engaged in activities at the
11 site, and we may still be concerned with the ALARA
12 design issue.

13 >> JUDGE MOORE: In that regard, it goes
14 back to my very first question; where is the line
15 between waste handling and transportation, because
16 that seems to me to be overriding all of this.

17 >> MR. REPKA: I think -- again, the line
18 we've clearly crossed it where we're dictating that
19 certain activities be done in furtherance of the DOE
20 project and in furtherance of the DOE license
21 application. With respect to both DOE and the Staff
22 said that there were other options available
23 to -- for reactivity controls. None were
24 specifically mentioned. I do believe that that's
25 ultimately a factual issue that would go into an

1 ALARA consideration, would be a matter for the
2 merits. But beyond that, we are not aware of any
3 specific reactivity control measure that would --
4 could be accomplished without dose consequences.
5 Staff mentioned aging. We looked at the
6 specification in the license application and it's an
7 enrichment versus burnup curve. Aging is not a
8 factor in that curve.

9 But again, those are fundamentally factual
10 issues, and our point is any reactivity control is
11 not necessary. So any dose would not be necessary.
12 Staff says that we're looking again to somehow
13 compromise the post-closure criticality objective.
14 We're not doing that. We are not asking that that
15 post-closure standard be changed, reduced,
16 overwritten. We're simply saying that it can be met
17 and will be met consistent with ALARA. Finally, DOE
18 again says this is not something that they control.
19 Fundamentally, I disagree with that. This is a
20 design issue that they do control.

21 And then one last point I'll make is DOE
22 made the example about applying ALARA to other
23 activities and other licensees and talked about the
24 fuel fab facility applying for a bigger, a greater
25 enrichment value for their fuel. Well, ultimately,

1 that's a very distinguishable circumstance because
2 there is all sorts of commercial responsiveness
3 requirements and the reactor licensees would be the
4 ones that would ultimately decide what enrichment
5 fuel they would be using in their facilities and
6 believe me, they would consider the ALARA
7 implications if they were going to go to a high
8 enrichment fuel. It's not to say they wouldn't do
9 it, but they certainly would consider the ALARA
10 implications.

11 >> JUDGE MOORE: The reason for my question
12 on where the line is drawn between fuel handling and
13 transportation, you repeatedly in your brief and
14 reply brief say that DOE could move more and more
15 things offsite to contractors. You give no examples.
16 What could they possibly do that doesn't run afoul of
17 the definition of waste handling and disposal in Part
18 63?

19 >> MR. REPKA: I think it's -- the best
20 example of what they could do, again, is push more
21 packaging activities offsite. Again, that's
22 certainly related and part of the transportation
23 issue. It's preparing the cannisters for
24 transportation and disposal or what the case may be.
25 Again, it's something being done using reactor

1 licenses as an agent for the transportation and
2 disposal process that is ultimately their
3 responsibility.

4 But instead of requiring that only some
5 cannisters be repackaged, they could require that
6 all cannisters be repackaged, and they should all be
7 done offsite. Or conversely, they could decide that
8 all repackaging will be done onsite. That's
9 precisely what they haven't decided to do. So there
10 is a range of things that they could require to push
11 activities offsite if they didn't have to consider
12 the ALARA implications.

13 >> JUDGE MOORE: Thank you, Counsel. Let's
14 move on to Issue 2. State of Nevada.

15 >> MR. MALSCH: Good morning, Your Honors.
16 I'm Marty Malsch for the State of Nevada. Issue 2
17 relates to the treatment of climate change in the
18 10,000 year total system performance assessment,
19 specifically, climate changes as they may be affected
20 by anthropogenic greenhouse gas emissions. And the
21 issue is whether Part 63 gives DOE the right in
22 projecting the effects of anthropogenic greenhouse
23 gas emissions to rely exclusively upon the historic
24 geologic record ignoring all other evidence. DOE
25 says yes. We say no. I'm not clear exactly what

1 Staff's position is. In any event, we believe DOE is
2 wrong. DOE's position runs into a very serious
3 problem right at the outset, because the applicable
4 regulation, which is in 63.305(c), simply provides
5 that DOE must vary factors relating to climate based
6 upon cautious but reasonable assumptions.

7 There is nothing in here at all about use
8 or reliance upon historic geologic record. But to
9 make things even worse, the rulemaking record
10 indicates that the Commission, in its original 1999
11 to 2001 Part 63 rulemaking, considered DOE's
12 argument and specifically rejected it. In its
13 notice of proposed rulemaking, it offered up a
14 proposed 63.115(c)(3). And that would have provided
15 that, "Climate evolution shall be consistent with
16 the geologic record of natural climate change in the
17 regions surrounding the Yucca Mountain site."

18 That was in the proposed Part 63 rule.
19 It was specifically dropped from the final rule in
20 favor of the language we currently see in 63.305(c),
21 which makes no specific reference whatsoever to the
22 historic geologic record. So we see right off the
23 bat, DOE will encounter some fatal problems, both in
24 terms of the language of the regulation and the
25 rule-making history behind Part 63.

1 >> JUDGE WARDWELL: Is there any place you
2 can point to, Mr. Malsch, in the regulations that
3 says DOE is required to look at anthropogenic climate
4 change impacts?

5 >> MR. MALSCH: I think no. I think the
6 regulation is silent. It just talks about projecting
7 climate changes based upon cautious but reasonable
8 changes.

9 >> JUDGE WARDWELL: Don't we just sugar down
10 to a merits issue then on whether or not using the
11 historic geological record is sufficient enough to
12 meet this reasonability standard associated with
13 305(c)?

14 >> MR. MALSCH: I think that is exactly
15 correct.

16 >> JUDGE WARDWELL: So, in fact, we could
17 decide against your position here that there is
18 nothing in there that requires them to look at it,
19 but still move forward on the factual issues and you
20 would be satisfied, would you not? I mean, no
21 difference occurs, does it?

22 >> MR. MALSCH: Well -- yes, I mean we have
23 contentions in effect that say DOE has not properly
24 evaluated climate change because it has not taken
25 into account properly anthropogenic greenhouse gas

1 emissions. As long as we are given the leeway to
2 offer that evidence and make our case, and as long as
3 those contentions remain admissible, we're satisfied.

4 >> JUDGE WARDWELL: But this legal issue
5 that we're trying to decide now says that, if I
6 understand it correctly, that there is a requirement
7 for them to look at the anthropogenic effects. And
8 I'm asking you, where is that requirement
9 specifically stated?

10 >> MR. MALSCH: Right. I think that's an
11 overstatement. I don't think we would say on the face
12 of the regulation a requirement to consider
13 anthropogenic greenhouse gas emissions. As we have
14 looked at the issue, we thought the issue was whether
15 DOE in it's evaluation, in attempting to project the
16 effect of anthropogenic greenhouse gas emissions had
17 the right to rely exclusively upon historic geologic
18 record.

19 And I think their position in the brief is
20 yes, they do and if they do so, it is legally
21 sufficient, per se, rendering inadmissible Nevada's
22 climate change contentions.

23 >> JUDGE WARDWELL: But didn't you agree to
24 a wording of this legal issue and as I read that
25 legal issue, that's kind of what it says to me, but

1 correct me if I'm wrong.

2 >> MR. MALSCH: No, it's a little -- as I
3 look back on it, the wording is a little strange,
4 because it poses an alternative. It says, does the
5 regulation require DOE to project future levels of
6 anthropogenic greenhouse gas emissions and evaluate
7 the impact of these. Or whether it is sufficient.
8 It's the 'or whether' part, that's a slight mismatch
9 there I think in the way the issue was framed.

10 >> JUDGE WARDWELL: As I read that, it just
11 meant that you would -- this was a specific analysis
12 approach they could use and it is sufficient to do
13 that on a legal basis, not on a factual basis.

14 >> MR. MALSCH: That's the way I read DOE's
15 brief. They seem to be saying they had a right to
16 approach anthropogenic greenhouse gases.

17 >> JUDGE WARDWELL: Your position, is it not
18 as I heard you, I think, is it not true that they
19 are -- they have the ability to do that? There is
20 nothing to prevent them from doing that legally?

21 >> MR. MALSCH: That's correct. They may
22 try. Whether or not at that time try is successful
23 really goes to the merits of the case.

24 >> JUDGE RYERSON: So, Mr. Malsch, just to
25 clarify, your position then is that DOE's analysis

1 based on the historic geologic record is neither
2 required nor per se specific. It simply comes down
3 to whether it's an adequate cautious but reasonable
4 assumption of change?

5 >> MR. MALSCH: That's exactly correct. And
6 I think whether DOE's approach, or for that matter,
7 our approach, represents the use of cautious but
8 reasonable assumptions presents a factual issue for
9 resolution at trial.

10 Just to go through quickly, some of DOE's
11 arguments. Since the Commission specifically
12 considered DOE's arguments and rejected it, they
13 really don't have much to go for based on the
14 rulemaking record. There is indications in the
15 rulemaking record that the Commission believed that
16 historic geological record would provide a solid
17 basis for projecting climate changes, but that
18 doesn't mean it's the only basis for projecting
19 climate changes.

20 It's also true that the Commission said
21 that the Paleo climate record was a sufficient basis
22 for believing that you could include climate change
23 processes in your total performance assessment, but
24 that's okay. That doesn't mean other approaches to
25 the climate change process couldn't be used. And

1 that really leaves the National Academy of Science
2 made no legally effective findings or
3 recommendations on the subject. In fact, there is a
4 kind of a neat summary of the NAS's findings in the
5 Commission's original notice of the proposed
6 rulemaking in Part 63.

7 It says, 64 Fed Register 8642 to 8643, and
8 that summary indicates that there is no, in the
9 Commission's view, NEI's recommendation or finding
10 that anthropogenic greenhouse gas emissions should
11 be based solely upon the historic geologic record.
12 That leaves only the 2005-2006 rulemaking where
13 there is no doubt that the Commission, in major
14 part, based the rate on an assessment of the
15 historic geologic record, but that only pertains to
16 the post-10,000 year performance assessment. The
17 Commission in its proposed rulemaking in 2005
18 suggested or proposed no changes in how climate
19 change would be treated in the 10,000 year
20 performance assessment.

21 And the Commission specifically advised
22 Nevada and other parties that, quote, "NRC requests
23 and will respond to comments only on those
24 provisions of Part 63 that we are now proposing to
25 change." Since they weren't proposing to change

1 anything, to treat this rulemaking as affecting our
2 ability to raise issues in the 10,000 year
3 assessment goes way beyond the scope of the
4 rulemaking when we violate fundamental principles of
5 fairness and for that matter would violate the
6 Administrative Procedure Act.

7 That leaves only the EPA rule, which has
8 language exactly like the NRC rule. It doesn't have
9 any specific thing dealing with the use of historic
10 geologic record.

11 There is a very strange statement in the
12 NRC rulemaking about how EPA says we specify the use
13 of the geologic record. I have no clue what that
14 can refer to, because there is no such specification
15 in the EPA rule. My only speculation is they have
16 been referring to how they approach the definition
17 of the aquifer for purposes of applying to the
18 groundwater standard. So, in conclusion, as Staff
19 says, "We agree that DOE is given some flexibility
20 in how to address climate change."

21 If it wishes, it may try to get away with
22 projecting anthropogenic greenhouse gas emissions
23 based on historic geologic. Whether it will succeed
24 does not raise a question of law, it raises a
25 question of fact. And we'll see how that comes out.

1 And we have our entitled by virtue of our mitigated
2 contentions to challenge DOE's use of the record for
3 that purpose.

4 >> JUDGE MOORE: Thank you, Counsel.

5 >> MR. MALSCH: Thank you.

6 >> JUDGE MOORE: Mr. Silverman.

7 >> MR. SILVERMAN: Thank you, Your Honor.

8 This is Don Silverman for DOE.

9 First, if I heard Mr. Malsch correctly, on
10 several occasions, I think he said that the
11 Department of Energy was permitted, I could be
12 mistaken, to use the geologic record as the basis
13 for projecting the effects of the anthropogenic
14 climate changes going forward. That's an important
15 admission if that's, in fact, what the records
16 reflect.

17 Our position is: Mr. Malsch started out
18 by arguing that we have a problem fundamentally up
19 front and that is with our interpretation of the
20 regulations and that is first, that the language of
21 63.05 talks about cautious but reasonable
22 assumptions only and doesn't speak to the geologic
23 record.

24 Secondly, it argues the regulatory history
25 of the regulations supports his decision. Let's be

1 clear on the regulation, first. The language of
2 this regulation is very, very general. It does not,
3 he is correct, refer to the word "geologic record."
4 All it uses is the phrase that we must vary factors
5 related to climate based upon cautious but
6 reasonable assumptions consistent with present
7 knowledge of factors that affect the Yucca Mountain
8 disposal system.

9 Our view is the language of the regulation
10 simply doesn't clearly and explicitly specifically
11 speak to the issue we are here today to decide,
12 which is whether it's sufficient and appropriate to
13 use the geologic record for purposes of determining
14 the effects of anthropogenic climate change.

15 >> JUDGE MOORE: But is it not your position
16 that it is sufficient as a matter of law to rely
17 exclusively on the geologic record?

18 >> MR. SILVERMAN: It is absolutely our
19 position. That is based not on this case, we have a
20 clear regulation that speaks collectively to it, but
21 because contrary to what Mr. Malsch has said, there
22 is a very consistent regulatory history here that
23 supports our interpretation that indicates that both
24 the EPA -- frankly, going back to the National
25 Academy of Sciences through the EPA rulemakings and

1 through the NRC rulemakings, a consistent recognition
2 that use of the historical geologic record was a
3 permissible way to perform this analysis.

4 >> JUDGE WARDWELL: But not an exclusive
5 way, I ask? Question mark. That's the key point, it
6 seems to me.

7 >> MR. SILVERMAN: I don't think that is a
8 key point. If I were to acknowledge, it's not the
9 exclusive way. The point is whether it's a
10 permissible way to meet the regulations, is it what
11 the NRC intended as an acceptable means of meeting
12 the regulation.

13 >> JUDGE MOORE: But your position is as a
14 matter of law which removes it from factual
15 challenge?

16 >> MR. SILVERMAN: Yes, as a matter of law,
17 we are permitted to rely on the geologic record which
18 removes it from factual challenge, and if I may --

19 >> JUDGE MOORE: Well, that's certainly,
20 speaking only from myself, moves the definition of
21 permitted to mean something other than what I believe
22 it means.

23 If, as a matter of law, it can be done
24 this way and only this way, that is exclusively, and
25 it's not subject to factual challenge as to whether

1 that's a reasonable and cautious approach, being
2 permitted to do it and being -- and being required
3 when there is no other way to do it, are two
4 different things.

5 >> JUDGE WARDWELL: I didn't hear a question
6 there, so let me ask a question. If, in fact, you
7 had chosen another path besides the geologic record,
8 i.e., evaluating climate change the way Nevada
9 suggest is a better way to do it on a scientific
10 basis, you would be in violation of the regulations.
11 Is your position?

12 >> MR. SILVERMAN: No, I would say we would
13 have a very difficult road to hoe in convincing the
14 Agency that we meet the regulations. I'm not sure I
15 agree with where you are headed and maybe I don't
16 understand. If our interpretation is, as a matter of
17 law, that the use of the geologic record is a
18 permissible and acceptable means of meeting the
19 minimum requirements, the requirements of the
20 regulations, and that is what the legal issue is,
21 whether it is sufficient under the regulations to
22 analyze effects using the geologic record, that if we
23 have used the geologic record, then as a matter of
24 law, we have met the regulations.

25 >> JUDGE WARDWELL: Well, when we're

1 dealing with a regulation that says "reasonableness,"
2 there are other ways to do it, then also and then
3 don't we get back to the same old factual basis,
4 whether or not that reasonableness is achieved when
5 we're dealing with something as general as the terms
6 that are in 305(c).

7 >> MR. SILVERMAN: No, I don't think so,
8 Your Honor. I think it's -- it's clear that if --
9 there is regulation that provides as the regulatory
10 history strongly supports that the Department may use
11 the geologic record, then that resolves the issue.
12 If we have done it, this is what the NRC intended
13 when they adopted the regulation as an acceptable
14 means and that results --

15 >> JUDGE WARDWELL: Then why didn't they use
16 the phrase "shall use?"

17 >> MR. SILVERMAN: The point is they did not
18 use - refer to the geologic record at all in the rule
19 itself.

20 >> JUDGE WARDWELL: Then why didn't they,
21 then, if your position is correct?

22 >> MR. SILVERMAN: Well lots of detail in
23 the rule. They don't specify the geologic record is
24 an acceptable means. They don't refer to it at all.
25 They don't say it is a unacceptable means. I think

1 the key here is the regulatory history, which I'd
2 like to take a minute on, if I may because the plain
3 language is not clear.

4 >> JUDGE MOORE: Before you start down the
5 regulatory history route, as I understood the legal
6 issue, it's divided into two parts. And DOE's
7 position is whether 10 CFR 63.305 requires DOE to
8 project future levels of greenhouse gas emissions
9 such as CO-2 and evaluate the impact of these gases
10 on future climate Yucca Mountain in the 10,000 year
11 performance assessment and/or whether it is
12 sufficient under the regulation for DOE to analyze
13 the effects, which I believe is Mr. Malsch's position
14 that as a matter of law, the first phraseology would
15 preclude any factual challenge and the second after
16 the "or" allows the factual challenge.

17 >> MR. SILVERMAN: I don't understand how
18 that allows a factual challenge. If it is sufficient
19 under the regulation to analyze the facts using the
20 geologic record, that ends the inquiry if we've used
21 the geologic record.

22 >> JUDGE WARDWELL: And where does it say
23 that in the regulation?

24 >> MR. SILVERMAN: As I said, the plain
25 language in the regulation is not clear. So I object

1 to Mr. Malsch's characterization that we have a
2 problem from the beginning that this regulation
3 resolves that. He says it's clear in the plain
4 language. He says it doesn't say anything on this
5 specific point. We are acknowledging that you can't
6 solve this problem just by reading this regulation.
7 It doesn't speak directly to the issue. But --

8 >> JUDGE WARDWELL: But wouldn't the
9 regulation -- if one was trying to create a
10 regulation that allowed flexibility in evaluating
11 climate change, wouldn't it come out like this?

12 >> MR. SILVERMAN: It might very well.

13 >> JUDGE WARDWELL: If one wanted to limit
14 how you did climate change, wouldn't one logically
15 say, you shall do it this way?

16 >> MR. SILVERMAN: Your Honor, you're right.
17 The issue is not whether this is the only way. It is
18 whether it is an accept -- we are here to determine
19 whether we meet the regulatory requirements and if
20 the Commission has said you may meet the regulatory
21 requirements by using the geologic record as a
22 surrogate, if you will, for the speculation that
23 would be involved in trying to predict future human
24 impacts on climate, if that is clear and if that is
25 what the NRC intended, that resolves the matter.

1 >> JUDGE RYERSON: But it clearly did not do
2 that, you admit. It didn't do that in a regulation.
3 The Commission promulgates regulation. It
4 promulgates, said, based upon cautious but reasonable
5 assumptions of change. I agree, that's not real
6 specific. But I don't think it's necessarily
7 unclear. It could say that there is a fact question,
8 obviously, as to whether something is cautious but a
9 reasonable assumption. Why isn't the case that we
10 then have a hearing on that issue?

11 >> MR. SILVERMAN: Why shouldn't you have a
12 hearing?

13 >> JUDGE RYERSON: As opposed to going to
14 look at regulatory history? Why do we get to the
15 regulatory history where we have a regulation that --
16 you may not like it. It's not as specific as you
17 think it should be. But is it unclear? Does it
18 require us to go look at regulatory history?

19 >> MR. SILVERMAN: Well, the answer to that
20 is that you don't get to a factual inquiry until you
21 have made a judgment that you cannot make the legal
22 judgment -- you cannot decide the issue as a matter
23 of law. When you have a clear regulation with clear
24 language that speaks to the issue and then you can
25 rely on the plain language of the regulation.

1 Our position here is that this is very
2 general language in the regulation. It's very hard
3 to come to a conclusion based exclusively on the
4 language of that regulation. And the canons and
5 statutory regulatory interpretations say, therefore,
6 you should look to the regulatory history for
7 guidance on what that regulation means. You need to
8 go through that step before you decide that there is
9 a factual issue remaining for litigation.

10 >> JUDGE WARDWELL: If there were no
11 regulation, where do you see it's not clear? It may
12 be general and it may not dictate a specific method.
13 But it seems to me the language is clear in 305(c).

14 >> MR. SILVERMAN: With respect to the use
15 of the geologic record, which is the issue before us?

16 >> JUDGE WARDWELL: The issue before us is
17 how to address climate change. And they're very
18 clear on how you do it.

19 >> MR. SILVERMAN: In a very general sense.

20 >> JUDGE WARDWELL: It may be general but
21 it's clear. It's not definitive.

22 >> MR. SILVERMAN: I don't believe the issue
23 is whether we're using cautious but reasonably
24 presumption. That is the legal issue before the
25 Board.

1 >> JUDGE WARDWELL: As you state, is this
2 not correct, if there is nowhere in the regulations
3 that states you may or shall use climate change in
4 the geological records?

5 >> MR. SILVERMAN: Absolutely. But as I
6 said, we are relying on a very consistent regulatory
7 record and just to briefly do this, if I may,
8 National Academy of Science's recommendations,
9 findings and report itself, and the EPA regulations
10 and the NRC implementing regulations that implement
11 the EPA standard are very inextricably linked. They
12 are all evidence in our view of what was intended by
13 the regulator at the end of the day.

14 The National Academy of Sciences report
15 discusses using the geologic record to
16 quantify climate. It says on page 95, "Although the
17 typical nature of past climate change is well-known,
18 it is obviously impossible to predict in detail
19 either the nature or time in the future climate
20 changes."

21 And then in particular on pages 68 to 69,
22 it says, "One critical gap in our understanding is
23 with respect to future human behavior. There is no
24 scientific basis for predicting future human
25 behavior."

1 This informs -- the National Academy of
2 Science is not the NRC, but informs the EPA rule,
3 which informs the NRC rule. The EPA said we specify
4 DOE should vary climate based on an examination of
5 evidence in the geologic record. The evidence
6 preserved in the recent geologic record provides a
7 means to reasonably bound the range of possible
8 conditions. Most importantly, if I may, if you may
9 indulge me for a minute; the NRC rules themselves,
10 the agency interpreting its own regulations, when it
11 adopted Part 63, it said the geologic record
12 provides strong evidence of past climate over a long
13 time, which provides a strong basis for predicting
14 future changes. It says, "Comments suggesting that
15 NRC consider future economic growth, i.e., human
16 activity trends ignore inherently large
17 uncertainties." It says, future predictions" which
18 we're saying we're not required to do, "would add
19 inappropriate speculation, therefore," the rule
20 precludes, does say precludes in this case,
21 "consideration of changes of assumption to lifestyle
22 and land use, human impacts, that can be subject to
23 speculation and future economic growth."
24 >> JUDGE WARDWELL: But nothing about CO2?
25 Is that correct?

1 >> JUDGE MOORE: Clearly in context--

2 >> MR. SILVERMAN: These are all in the
3 context of climate change.

4 >> JUDGE MOORE: Mr. Silverman, the
5 Commission drew a line between such things as
6 population changes around Yucca Mountain. And they
7 specifically spoke to that. And water usage, because
8 of population changes and predicting and projecting
9 those things as opposed to climate change, I think
10 you are mixing the two together and I certainly can't
11 read the legislative history the way you just recited
12 it with regard to that particular provision.

13 I think the Commission made a very clear
14 line that they were drawing between two different
15 types of activity, one of which -- and they do
16 reference and refer to the geologic record for
17 climate change, but that's totally distinct from the
18 other matter they were talking about.

19 >> MR. SILVERMAN: And the other matter they
20 were talking about, you're saying, Your Honor, was
21 what?

22 >> JUDGE MOORE: Population change in the
23 area of Yucca Mountain, economic growth in the area,
24 water usage in the GROA--

25 >> MR. SILVERMAN: No, Your Honor. One of

1 the quotes that I read from the statement of
2 considerations says the geologic record provides
3 strong evidence of past climate over a long time,
4 which provides a strong basis for predicting future
5 changes --

6 >> JUDGE MOORE: That is true. And then you
7 contrast that to the other matters that they are not
8 going to get involved with at all. And that's
9 population change, economic development and all of
10 those things. I think they treat them as two
11 distinct matters in all of this legislative history.

12 >> MR. SILVERMAN: Well, we disagree with
13 that. And I would add to the statements of
14 consideration on final promulgation of Part 63, and I
15 think it was 2001 to 2009 rulemaking where the NRC
16 said, in implementing, this was the regulation
17 implementing the final EPA standards that quote, "All
18 climate predictions are based on and calibrated
19 evidence of past climates contained in the geologic
20 record."

21 >> JUDGE MOORE: In regard to that that you
22 just quoted, that is in a paragraph that the next
23 sentence says, "The values specified for
24 de-percolation rates adopted in the final regulation
25 capture the range of temporal variability

1 uncertainty --

2 >> MR. SILVERMAN: Yes.

3 >> JUDGE MOORE: That clearly refers to post
4 10,000 year period, does it not?

5 >> MR. SILVERMAN: That portion does and
6 that rulemaking was focused on.

7 >> JUDGE MOORE: Why, why in the same
8 paragraph would the sentence before a switch in
9 subjects be referring to the pre-10,000
10 period -- pre-10,000 year period, which is what you
11 quote. And the very next sentence refers to the
12 post-10,000 year period in the same paragraph without
13 any demarcation that's telling you they're totally
14 switching horses?

15 I mean, doesn't it have to be read in
16 context?

17 >> MR. SILVERMAN: It does have to be read
18 in context and I completely agree that the purpose
19 and function of that rulemaking, g, the post-10,000
20 year period and the use of the percolation rate, if
21 you will, for that period. But the language that
22 I'm reading from is that it first says all climate
23 are based on the geologic record. I'm shortening up
24 that sentence. We know that the NRC went on in the
25 next sentence and in that rulemaking to say, in the

1 post-10,000 year period, you may do something
2 different.

3 You may use the percolation rate. We just
4 point this statement out. We recognize this is a
5 rulemaking on the post 10,000 year period. We think
6 this statement is supportive of the rest of the
7 regulatory record that we rely on.

8 It is consistent from the National Academy
9 Sciences Report, through the EPA rulemaking and the
10 NRC rulemaking. We don't believe the Department,
11 I'm sorry, Nevada has pointed out any specific
12 prohibition in the regulations or the regulatory
13 history that precludes the Department from
14 proceeding the way they did. If they have done
15 what they are permitted to do, then the issue ought
16 to be decided as a matter of law.

17 >> JUDGE WARDWELL: The proposed 63 and 115
18 (a)3 that said climate evolution shall be consistent
19 with the geologic record of natural climate change in
20 the region surrounding the Yucca Mountain site. Any
21 hypothesis of why that was dropped?

22 >> MR. SILVERMAN: I have hypotheses. I
23 think the Staff may be able to speak to this better
24 than I. I would admit their hypotheses.

25 >> JUDGE WARDWELL: Doesn't it seem strange

1 if they were backing your position, and as I hear
2 your position, it's more than just whether or not you
3 are allowed to look at climate historic record to
4 develop climate change. In fact, you have to use
5 that process that they would drop something like 115
6 (a) (3)?

7 >> MR. SILVERMAN: Well, our position is not
8 dependent on whether we have to or whether we are
9 permitted to under the regulations, but I understand
10 your point.

11 >> JUDGE WARDWELL: We got a continuous do
12 loop here. Under the regulation, it's cautious but
13 reasonable. There is nothing either way. So when
14 you say under the regulations, it's left open in the
15 regulations. You may have a position that the
16 regulatory history supports the fact that it is
17 sufficient and complete and conclusive --

18 >> MR. SILVERMAN: Yes.

19 >> JUDGE WARDWELL: -- that you can use a
20 geologic record.

21 >> MR. SILVERMAN: Yes.

22 >> JUDGE WARDWELL: That's fine but we can't
23 say that I don't believe that under the regulations,
24 under the regulation allow freedom in that regard, do
25 they not? Doesn't 305-(c)--

1 >> MR. SILVERMAN: I disagree with that.

2 >> JUDGE WARDWELL: Doesn't 305(c) address
3 freedom in how you address climate change?

4 >> MR. SILVERMAN: 305-(c) on its face does
5 not specify precisely how you address climate change
6 and, however, when we interpret a regulation, we may
7 use the regulatory history to support that
8 regulation. With respect to -- and I think the Staff
9 may speak to this, with respect to the fact that
10 there was a proposed rule that used the phrase the
11 geologic record and the final rule did not, again,
12 the Staff can speak better to this.

13 My view is if the Commission had several
14 things. One, if the Commission had intended to
15 preclude the use of the geologic record, and when
16 that language was removed from the regulation,
17 that's a pretty fundamental change.

18 I mean, now we're talking, you can't look
19 backward, you got to look forward, you got to look
20 forward and speculate about what the future of the
21 world will look like in future human activity will
22 look like. We would have expected they would have
23 said something about that in the intent in their
24 explanation and they did not do so. We think what
25 they were doing was really essentially changing the

1 regulation to essentially parrot the EPA regulation
2 that the NRC had to be consistent with.

3 >> JUDGE WARDWELL: But the position isn't
4 that you are precluded from using this. It's just
5 that's the factual issue of whether or not it's
6 sufficient to meet the --

7 >> MR. SILVERMAN: That's not a factual
8 issue, Your Honor, in my view. That's a legal issue.

9 >> JUDGE MOORE: Thank you, Mr. Silverman.
10 Staff.

11 >> MS. SILVIA: Andrea Silvia on behalf of
12 the NRC staff. Just to quickly address that DOE
13 counsel has just been discussing. The removal of the
14 proposed 63.115(a)3 language stating that climate
15 evolution shall be consistent with the geologic
16 record of natural climate change in the recent Yucca
17 Mountain site was not found in the final Part 63 and
18 in the rulemaking at 66 Fed Reg at 55733. We believe
19 the Commission's explanation is that it adopted EPA's
20 40 CFR. part 197 subpart (b) as it's 10 CFR Part 63
21 subpart (1) which includes the 63.305, with the
22 precise wording of the EPA standards in most cases.
23 And that was to be consistent with the Energy Policy
24 Act of 1992's direction for the Commission to modify
25 technical criteria to be consistent with the EPA's

1 criteria, and that no substantive change was actually
2 intended by the removal.

3 >> JUDGE WARDWELL: So EPA didn't require
4 any specific methodology to evaluate climate change
5 then if that's what their wording was. Is that your
6 position?

7 >> MS. SILVIA: Correct.

8 >> JUDGE WARDWELL: So both the geologic
9 record could be used if it can be defended
10 successfully. Or there could be a requirement to
11 look at the -- to address Judge Moore's statement in
12 regard to the difference in population growth around
13 Yucca was clearly prohibited by the Commission and
14 climate change from global CO2 increases, could be
15 another way. And there is a factual issue left to be
16 resolved on whether or not one or the other meets
17 this sufficient reasonableness?

18 >> MS. SILVIA: I don't think the
19 depercoration requires a specific manner. However,
20 it's legally permissible for DOE to use the
21 geological record and then it becomes a factual
22 matter whether or not DOE was justified in relying on
23 the geologic record.

24 >> JUDGE RYERSON: Does the Staff really
25 disagree with Nevada at all on this issue?

1 >> MS. SILVIA: I think hearing what
2 Mr. Malsch said, I don't -- I think we have the same
3 position. The regulations does not preclude the use
4 of the geologic record.

5 In addressing the use of the geologic
6 record, the Commission in its statements of
7 consideration for various rulemakings has made many
8 statements suggesting that the geologic record is an
9 appropriate tool.

10 For instance, in responding to the issue
11 of whether the NRC should include potential future
12 climate changes in the specification of a referenced
13 biosphere, the Commission stated the climatic data
14 support that one, ice agents have occurred in the
15 past history, two, climate changes in the past have
16 exhibited a cyclical pattern and three, cycle is
17 back to another ice age. That's at 66 Federal
18 Register 65775. The Commission also stated it
19 believes there is sufficient information in the
20 failure of the climate record to justify the climate
21 change in the final regulations regarding the effect
22 on the repository components. That's the same page.
23 The Commission further stated that the natural
24 systems of the biosphere are allowed to vary, for
25 example, climate change because the geologic record

1 provides evidence of past climate over a long time
2 frame which provides a strong base for predicting
3 future changes.

4 The postischemic behavior has a similar
5 approach could not be used and the influence of
6 local populations has on the biosphere. The
7 suggestion that NRC consider alternative futures
8 relating to human behavior is speculative and leads
9 to problems deciding which are credible and which
10 are unrealistic.

11 The Commission noted that it has
12 extensively investigated relevant research on future
13 climate change in the Yucca Mountain area and that
14 summarizing information and a status report. This
15 IRS indirectly addresses the treatment of gas
16 emissions and concludes for high level waste
17 repository, it is adequate for future ideologic
18 conditions by studying conditions in the past
19 climate. These statements reflect the Commission's
20 understanding that the geologic record is the basis
21 for projecting future climate by Yucca Mountain.

22 Furthermore, the statement indicates the
23 Commission was concerned about the speculation
24 inherent in the factors associated with future
25 behavior. The Commission sought to avoid such

1 speculation and attempts at determining which
2 narratives are credible, the interpretation of
3 63305.

4 >> MR. FITZPATRICK: With the Commission
5 statement to allow DOE to analyze the effects of
6 anthropogenic greenhouse gases on future climate base
7 and the historic geological record, not attempting to
8 protect future levels anthropogenic greenhouse gases
9 emissions which are necessarily affected by human
10 behavior.

11 >> JUDGE MOORE: Do you agree with the
12 caveat that it would be subject to challenge?

13 >> MS. SILVIA: Yes. The Commission's final
14 Part 63 reflects Staff continue to investigate into
15 this area and continue to intense a pragmatic
16 appropriate to speculation area of climate
17 prediction. Although, as the Judges pointed out,
18 this affects on the post-10,000 year period the
19 Commission did state that all predictions are
20 calibrated on past containment of the geological
21 record. This statement has remained for the initial
22 10,000 year period. 63.305 requires --

23 >> JUDGE WARDWELL: Why do you say that?
24 Sorry, I scared myself. Why do you say that.

25 >> MS. SILVIA: Whether the climate

1 predictions are going to be for 8,000 years from now
2 or 800,000 years from now, the basis is still the
3 geologic record and the starting point is essentially
4 the geologic record.

5 >> JUDGE RYERSON: Let's come back to the
6 legal issue that we're facing here and see if I
7 understand how you all disagree with Nevada. By its
8 terms, 63.305(c) says nothing about historic
9 geologic record, correct?

10 >> MS. SILVIA: Yes.

11 >> JUDGE RYERSON: You believe based
12 on -- Staff believes based on the history of that
13 regulation, that the historical geographic, geologic
14 record is probably a good start. Is that your
15 position?

16 >> MS. SILVIA: It may be sufficient.

17 >> JUDGE RYERSON: May be. In other words,
18 in the Staff's view, there is inherently a fact
19 question under, under 63.305-(c). Is that --

20 >> MS. SILVIA: Correct.

21 >> JUDGE RYERSON: Is that your position?

22 >> MS. SILVIA: DOE has flexibility and NRC
23 will evaluate what DOE proposes to make sure that it
24 meets the regulatory requirements.

25 >> JUDGE RYERSON: Okay. How, if at all

1 does your position differ from Nevada's, as you
2 understand it?

3 >> MS. SILVIA: I think I heard Nevada say
4 this morning is consistent with our position, however
5 there is some language in the briefs that I wasn't
6 sure if Nevada was intending for DOE to have to
7 predict the levels of anthropogenic greenhouse gases
8 into the future. And with that part, we disagree
9 that is a requirement for DOE to specifically project
10 levels of greenhouse gases at certain times in the
11 future.

12 >> JUDGE RYERSON: You might argue the facts
13 somewhat differently, but as to the question -- as to
14 the issue of whether there is a fact question as
15 opposed to a legal question, you are in Nevada's
16 camp, as I take it, there is a fact question.

17 >> MS. SILVIA: Yes.

18 >> JUDGE MOORE: Thank you, Counsel.
19 Mr. Malsch, do you have any quick rebuttal?
20 Specifically, start with the way the issue is framed,
21 why have you not been host of your own as
22 Mr. Silverman suggests?

23 >> MR. MALSCH: I don't think so. The way
24 the issue is framed is largely crystalized by the
25 second half of the question. And I think the issue

1 is whether, if DOE chooses to base projection of
2 anthropogenic greenhouse gases on the historic
3 geologic record, they may do so. The question is
4 whether having done so, it is as a matter of law
5 sufficient or whether that may be challenged. And I
6 think we and the Staff are in agreement that it can
7 be challenged. I have -- unless the Board has other
8 questions, I have no other rebuttal.

9 I do have one request though, that is that
10 depositions on climate change contentions, including
11 the contentions affected by this issue as well as
12 the contentions affected by the issue coming up, are
13 scheduled to begin I think in February. So an early
14 ruling on this issue would be greatly appreciated.

15 >> JUDGE MOORE: Thank you, Mr. Malsch.
16 It's now 10:50. We will take a ten-minute recess.
17 Re-convene at 11:00. Thank you.

18 (Whereupon, a short recess was taken)

19 >> JUDGE MOORE: Please be seated. We will
20 now address Issue 3. Mr. Malsch.

21 >> MR. MALSCH: Thank you, Judge Moore.
22 Marty Malsch for the State of Nevada. I would like
23 to reserve a few minutes for rebuttal. This issue
24 deals with the climate change in the post-10,000
25 assessment. And we believe that climate change

1 processes the kind of FEP and feature processor, the
2 climate change processes properly included in the
3 10,000 year performance assessment must be included
4 as well in the post-10,000 year performance
5 assessment, but operation of 10 CFR.63.342(c). Staff
6 and DOE disagree claiming the de-percolation rates
7 instead in 342 (c)2 is always applicable and
8 controlling 10,000 years.

9 Now, as I stated, before I begin this is a
10 very difficult regulation to get one's arms around
11 and I would submit and concede that our
12 interpretation is not perfect. I would submit that
13 DOE's and Staff's interpretation suffers from far
14 more serious -- the regulation 342(c).

15 It provides DOE's performance assessments
16 shall project the continued effects of FEPs beyond
17 the 10,000 year performance assessment, beyond the
18 10,000 year post-disposal period through the period
19 of geologic stability. There is no exception made
20 for any FEPs let alone any climate change FEPs.
21 Then to emphasize the point that no included in our
22 screen into the 10,000 performance assessment is
23 excluded. The next clause of that same sentence
24 says, pursuant to DOE, must evaluate all of the
25 10,000 year FEPs in a post-10,000 year assessment

1 and you would think all means all. The next clause
2 of that same sentence says FEPs climate change and
3 corrosion must also be included in the post-10,000
4 year assessment.

5 Also, with normally we understood the name
6 not to mean any substitution but in addition to. So
7 the NRC provides repeatedly twice just to make the
8 point clear that 10,000 year FEPs, 10,000 year
9 performance FEPs must be extended without exception
10 to the next 990,000 years.

11 Now, looking at the regulation, as I said,
12 this is a difficult regulation to get one's hands
13 around. And it strikes us that the drafter of the
14 regulation must be assuming there would be no
15 climate change FEPs in the 10,000 year performance
16 assessment. If you make the assumption that there
17 are no climate change FEPs in a 10,000 year
18 performance assessment, then the regulation hangs
19 together. There are no FEPs to extend, but there is
20 under 341(c)2 an obligation to consider climate
21 change and then (d)- is given option.

22 It says it may represent climate change by
23 the use of constant climate conditions and value.
24 So, it changes together under that assumption. But
25 once you assume the climate change FEPs are included

1 in the 10,000 year performance assessments, you run
2 into difficulties right away.

3 Now, our interpretation has the effect of
4 reading 342-(c) to say you must extend climate
5 change FEPs beyond 10,000 year period.

6 But then there is some duplication in the
7 regulation, some redundancy, because 342(c)2,
8 effectively says the same thing, shall include
9 climate change FEPs in the post-10,000 year
10 assessment period.

11 So our interpretation does suffer from an
12 imperfection. It reads there is some redundancy in
13 the regulation.

14 >> JUDGE WARDWELL: Don't you also have a
15 problem with the fact that exclusive of just that
16 redundancy, in the first part of 342, it doesn't
17 dictate that it be extended using the same
18 methodology that was used in the pre 10-K period,
19 does it?

20 >> MR. MALSCH: It doesn't specifically
21 address methodology.

22 >> JUDGE WARDWELL: It includes the same
23 process that you went through in the pre-10 must be
24 extended into the post-10, is what your position is;
25 is that correct?

1 >> MR. MALSCH: I think that's correct. In
2 part, that depends on how you define the FEP. If you
3 define FEP as a fairly detailed description of a
4 process and how it operates, you end up carrying all
5 or most of the parameters over in the assessment
6 after 10,000 years.

7 >> JUDGE WARDWELL: That would be one
8 option, but the regulation doesn't require that to
9 take place. They could switch persons, say, oh, no,
10 after 10,000, I'm going to do something different.

11 >> MR. MALSCH: I think that, well, I'm not
12 sure that's clear. It depends on what it means by
13 "shall extend" 10,000 year FEPs.

14 I think if it means you shall extend the
15 FEPs precisely as they have been defined in all
16 details to the next 990,000 years, I think you are
17 limited somewhat, except that --

18 >> JUDGE WARDWELL: But it doesn't say that.

19 >> MR. MALSCH: It is not specific. It
20 doesn't say that, spell -- As I said, our reading
21 would mean that 342 (c) the opening paragraph would
22 require climate change FEPs to be extended and is
23 considered in the post-10,000 year period and then
24 there is some redundancy because 342 (c)2 then says
25 you shall also consider climate change FEPs in the

1 post-10,000 year period.

2 >> JUDGE WARDWELL: How many climate change
3 FEPs are there, offhand, do you know?

4 >> MR. MALSCH: No, I actually don't know.

5 >> JUDGE WARDWELL: More than one?

6 >> MR. MALSCH: I think there is more than
7 one, but I honestly don't know the answer to that
8 question.

9 >> JUDGE WARDWELL: So some may get screened
10 out, and some may not.

11 >> MR. MALSCH: That's possible.

12 >> JUDGE WARDWELL: There is a necessary
13 redundancy here, gee, even those that did get
14 screened out in the pre 10-K period, hey, here's
15 342(c) coming to rescue that. You still got to look
16 at it in the post-10,000 year period?

17 >> MR. MALSCH: I think that's correct. I
18 think the question then would be whether, you know,
19 that would be sufficient or whether more would need
20 to be done by virtue of 342(c)2.

21 But there is at least a little redundancy,
22 but there is at least a little bit of redundancy.
23 There is already redundancy built into the opening
24 paragraph because the Commission effectively says
25 twice to extend beyond 10,000 years, FEPs included

1 in the 10,000 year assessment.

2 >> JUDGE MOORE: But that's just in Section
3 63.342(c) without even getting to one.

4 >> MR. MALSCH: Without even getting to
5 one or two or three. Staff's interpretation, though,
6 I would submit --

7 >> JUDGE MOORE: Under your interpretation,
8 they are at least being consistent in their
9 redundancy.

10 >> MR. MALSCH: That is correct. They are
11 consistent in their redundancy. So I would say we
12 need not be too concerned about the redundancy in the
13 drafting of this particular regulation.

14 On the other hand, Staff's interpretation
15 and DOE's interpretation runs into some serious
16 problems, because they would read the regulation as
17 if it said, "except as provided below" twice in the
18 opening language.

19 In addition, they run into a problem
20 because the use of constant climate conditions or
21 values is preceded by the word "may" not "must".
22 The only requirement in 63.342.(c)2 is that climate
23 change must be considered in the post 7000 year
24 assessment. The rest is discretionary. They may be
25 represented by constant climate conditions or

1 values.

2 >> JUDGE WARDWELL: But if they had chosen,
3 if they chose to use that constant infiltration, then
4 that is by law, acceptable?

5 >> MR. MALSCH: I would agree with that. If
6 they may choose and they so choose, it is by law,
7 acceptable.

8 Now, I will make one important point,
9 though, and that is that DOE and Staff's
10 interpretation is not necessary to fulfill the
11 fundamental purpose of the regulation. DOE and
12 Staff says that we need to read the regulation the
13 way you read it because Nevada's interpretation
14 leads to the use of arbitrary assumptions and causes
15 unbounded and unresolvable speculation.

16 But that's just not true. Under our
17 interpretation, climate change FEPs identified in
18 the first 10,000 years are carried over into the
19 next 10,000 years and there is no need to create an
20 entirely new species of post 10,000 year climate
21 change FEPs.

22 If they had not carried over, if there was
23 no FEPs to carry over, then DOE still has to include
24 climate change but it may avoid speculation by
25 choosing to use the constant in time climate

1 conditions or value specified in paragraph two.

2 So under our interpretation, there is no
3 boundless -- unbounded speculation or uncertainty.
4 It's all pretty much straightforward.

5 >> JUDGE WARDWELL: But it would be if you
6 are proposing that the FEPs that were screened in for
7 the pre-10 K period had to be extended using the same
8 processes that were used in the pre-10 for the
9 post-10 K period, because then you wouldn't be using
10 the constant infiltration, you would be using in
11 their position , speculative projections.

12 >> MR. MALSCH: Well, that's what they say.
13 But by definition, if the climate change FEPs in all
14 their details, are screened in to the 10,000 year
15 assessment, it strikes me they are by definition,
16 not speculative and not posing unresolvable issues.
17 If they did, they shouldn't have been screened in in
18 the first place.

19 JUDGE WARDWELL: Well, the argument is, is
20 it not, that the difference between pre-10
21 projections and extending those out to two orders of
22 magnitude time frame is somewhat speculative, is
23 their position, is it not?

24 >> MR. MALSCH: I mean, I agree, it becomes
25 increasingly more speculative. But if it were so

1 speculative it was incapable of proof or incapable of
2 any kind of scientific resolution, they would have
3 been unable to define the depercoration rate. So
4 obviously things were not that speculative and not
5 that unbounded, otherwise, they couldn't have
6 specified the rate in the first place.

7 JUDGE WARDWELL: But that rate could have,
8 and I'm hypothesizing now -- the rate was arrived
9 at recognizing that doing it any other way than the
10 way that they derived that would be purely
11 speculative in that they took a shot at it and said,
12 fine, let's all use this because we're in la-la land
13 anyhow.

14 This is as good of an approach we can come
15 up with as by the collective wisdom of everyone that
16 participated in this process. We'll live with this,
17 because we are in somewhat speculative land.

18 >> MR. MALSCH: We are in somewhat
19 speculative land, I agree. And I will say this
20 though, that the regulation does say specifically
21 that DOE may project climate changes in the
22 post-10,000 years using these particular
23 specifications, not that they must. So it is open
24 for DOE, even --

25 >> JUDGE WARDWELL: Oh, sure.

1 >> MR. MALSCH: -- to do it in a different
2 manner.

3 >> JUDGE WARDWELL: But we're not here to
4 address that because I understand they haven't used
5 any other alternative approach. That's really not an
6 issue here.

7 >> MR. MALSCH: I think that is correct.

8 >> JUDGE RYERSON: Mr. Malsch, in the
9 regulation, isn't the "and also" really the key to
10 interpreting the regulation as a regulation quite
11 apart from the practical considerations here?

12 I mean, I think you argue, do you not,
13 that DOE is in effect saying it doesn't say "and
14 also," it says, "provided however, that."

15 I think you would agree, if it said,
16 "provided however, that," would you agree that DOE's
17 position would prevail?

18 >> MR. MALSCH: I would agree. I think that
19 causes a serious regulation language problem.

20 >> JUDGE RYERSON: Suppose it said,
21 "provided further that;" would you agree DOE's
22 position would prevail?

23 >> MR. MALSCH: I think then the regulation
24 becomes a bit ambiguous because of the use of the
25 word "further." It suggests that -- it suggests the

1 preceding language is still somewhat awkward.

2 >> JUDGE RYERSON: Is there really a
3 difference between on the one hand "and also" and on
4 the other hand, "provided further that?"

5 >> MR. MALSCH: It's really very similar.

6 >> JUDGE MOORE: Isn't it really a question
7 of instead of "provided further," it really would
8 have to be read "except for" because then 66it's lear
9 that what precedes it is the accepted and what
10 follows it?

11 >> MR. MALSCH: I think it would have been
12 the ideal way to draft the regulation if DOE and
13 Staff's interpretation would have run with what was
14 intended. But obviously, it isn't drafted that way.

15 >> JUDGE MOORE: I freely admit the "and
16 also" if it is to be -- cannot be understood in its
17 normal sense to mean "except as provided" or, "except
18 for." I can't get there from "and also."

19 >> MR. MALSCH: "And also" provides a
20 serious problem for DOE and Staff's interpretation.
21 And I would say --

22 >> JUDGE MOORE: How do you speak to the
23 Staff's argument that the "and also" is merely
24 limited to qualifying the two methods that may then
25 be used to follow in, 1 and 2, (c) 1 and 2.

1 >> JUDGE WARDWELL: Really, there's three.
2 Corrosion has some limitations, igneous has some and
3 the climate change. All three, really all four of
4 those issues that are there are addressed in some
5 fashion.

6 >> MR. MALSCH: Yeah, I don't frankly
7 understand how Staff's interpretation would be
8 correct among other things.

9 The specification of how these four kind
10 of FEPs are to be considered are optional. It is
11 how they may be addressed, not how they must be
12 addressed. So if you strip away from the paragraph
13 in 342 (c) all the maze, all you end up with is, you
14 must consider climate change, period.

15 >> JUDGE WARDWELL: Well, I don't know if
16 this will help you or not. I can somewhat understand
17 Staff's and DOE's position because when I first read
18 it, that was the way I interpreted it. It wasn't
19 until it was brought before me in your arguments of
20 another way to read it that I saw the logic of what
21 you are proposing. But I'm still struggling with
22 that, because from a logic standpoint as you read
23 through it without focusing on things, that is what
24 you think would be what they are trying to say.

25 But I have a further problem that I need

1 help from you on and that's back to what I alluded
2 to earlier. Let's say for the sake of argument,
3 your interpretation is correct. I still see nothing
4 in everything that takes place before you get down,
5 before the "and also," everything preceding the "and
6 also" doesn't say anything to me that in the
7 projection of those FEPs into the post-10,000 year
8 period, that you have to use the same methodology
9 that you use in a pre-10. And help me see that in
10 the wording here that limits DOE even if your
11 interpretation is correct, that 1, 2, and 3 after
12 (c) refers only to those that have been screened
13 out.

14 Even if you interpret it that way, there
15 is nothing in the ore paragraphs that I can see that
16 says that the same methodology has to be used in the
17 pre -- post-10 that you used in the pre-10. Where
18 do you see that?

19 >> MR. MALSCH: I think, I think you can
20 only see that in terms of how one chooses to define a
21 FEP. I mean, is a FEP screened into the 10,000 year
22 performance assessment, just climate change? Or is
23 it climate change as it has been evaluated using the
24 analysis techniques and parameters all considered
25 together in the 10,000 year performance assessment.

1 Is that's what's carried over. Or is it just climate
2 change as a FEP?

3 I mean, I had always assumed that what
4 gets carried forward is the FEP as it has been
5 defined with a lot of its specifications and
6 techniques going along with it. But I agree with
7 you, it's not perfectly clear because it does not
8 specify specifically that all details of the FEP
9 methodology -- using legality -- get automatically
10 carried over.

11 >> JUDGE WARDWELL: And one example might be
12 a FEP that deals with the temperature aspects of
13 climate change and that they may have used the
14 geologic record to indicate what was there for the
15 first 10,000 years, but then moving forward, they may
16 use some other aspect of how they want to project it
17 in the future. Or vice versa.

18 They may have actually used the CO2 rates
19 in the last part as modified by someone's analysis
20 and they were comfortable with doing that up to the
21 10,000 year period and then realized no -- just like
22 the infiltration rate, this is somewhat speculative
23 so we're going to change our approach and recognize
24 that carbon may be limited, or whatever and that
25 it's going to be self correcting and they may go

1 ahead and project it differently.

2 >> MR. MALSCH: Well, all I can say is that
3 on this point, the regulation isn't that clear. But
4 from the requirement that carry forward a FEP, I
5 assume they meant to carry forward the FEP along with
6 some essential details as to what exactly it meant.
7 Now, whether that includes all the details, I think
8 remains to be seen.

9 >> JUDGE WARDWELL: Do you agree and then
10 I'll let someone else go -- I want to fix this point
11 in my mind. If, in fact, the interpretation I just
12 provided, that there is no requirement that the
13 methodology be carried forward, just that the FEP be
14 carried forward, if, in fact, that is an appropriate
15 reading of this, then wouldn't DOE also be free to
16 lump all of the climate changes together as they move
17 forward into the post-10,000 year period and use a
18 constant infiltration rate to represent all the
19 different climate FEPs?

20 >> MR. MALSCH: They could try to do so, but
21 remember the issue as framed is whether climate
22 change FEPs properly screened into the 10,000 year
23 assessment gets carried forward. So if we were to
24 prevail in climate change in a 10,000 year
25 performance assessment, then that victory of ours in

1 a 10,000 year assessment would carry forward at least
2 to a major extent in the post 10,000 year assessment
3 period.

4 >> JUDGE WARDWELL: But under the
5 interpretation approach that I have provided here,
6 they could switch horses after the 10,000 year period
7 and just represent all of those as a constant
8 infiltration rate even if your wording in the end
9 also is accepted also.

10 >> MR. MALSCH: I can't say that wouldn't --
11 that isn't absolutely forbidden. I think it takes
12 some liberties with the definition of FEP. It might
13 be a little awkward. But as I say, the regulation is
14 not clear in defining the exact leaps and bounds of
15 the FEP. It doesn't include every single detail or
16 just the essentials?

17 One last point is I struggled in vain to
18 find a answer to this question in the rulemaking
19 history and couldn't find it. Let me just mention
20 one particular part of the rulemaking history that
21 DOE and Staff-- maybe just DOE is especially fond
22 of. It appears in the notice of final rulemaking at
23 74 Fed Reg, page 10818. Here the NRC says that --
24 this deals with seismic events.

25 Here the NRC says that the seismic has

1 occurs in the post-10,000 year assessment should be
2 based upon the seismic occurs in the 10,000 year
3 performance assessment and that DOE would only
4 consider the seismic effects listed in 63.342(c)1i.
5 Well, let's look at that.

6 The part that says that the seismic has
7 occurs identifies in the 10,000 year assessment get
8 carried forward can only be through, if we're
9 correct, that the four FEPs listed in 342(c),
10 seismic, corrosion, igneous and the like, get
11 carried forward even from the 10,000 year
12 performance assessment even if they're listed in
13 63.42(c). So that supports our carry forward
14 argument, because otherwise, there would be no basis
15 for carrying forward the seismic has occurs.

16 The second part appears to support DOE and
17 Staff because it says DOE would only consider the
18 effects listed in 63.342 (c)1i except if the
19 language here is may, not must. So the drafters
20 seem to have been a bit estranged, the drafter of
21 this preamble seems to be at least a bit estranged
22 from the actual language of the regulation.

23 What one looks for in the rulemaking
24 history and does not find is a indication that the
25 constant time values and conditions found in

1 63.342(c)2 ought to be used, whatever may have been
2 approached to climate change in the 10,000 years and
3 one does see that in the rulemaking record.

4 So in summary we think that climate change
5 FEPs properly included in the 10,000 year assessment
6 by operation of the 342(c) get carried forward in
7 the post-10,000 year period.

8 >> JUDGE WARDWELL: This is kind of backing
9 up quite a bit. But I do want to clarify the record.
10 In which of your contentions do you believe extend
11 into the post-10-K period? And the reason I say that
12 is that 11 seems clear that it's extends into the
13 post-10,000 year period.

14 In 13, you used the phrase four more years
15 in Item 2 in -- you know, statement two, the basis
16 for it. Then during and beyond in 5, Section 5 of
17 your brief. That's the only place that I could find
18 that you talk about post-10,000 year period in 13.
19 In 19, you only use "or more years" in Section 5 and
20 that's the only time I can see it.

21 Is it your position that all three of
22 those contentions extend into the post-10,000 year
23 period even though there is no mention of it in the
24 contention statement itself?

25 >> MR. MALSCH: I think, I have to go back

1 and look at our contentions. I think the contentions
2 that we have focus on post-10,000 year climate change
3 are 11 and 19. And then of course, 202, which raises
4 the broader question of how the regulation must be
5 interpreted, whether there is a rule challenge there.
6 I think the focus, though, is on 11 and 19.

7 >> JUDGE WARDWELL: Is there any other place
8 in 19 that I missed that it talks about the
9 post-10,000 year period besides that "or more years"
10 in Section 5?

11 >> MR. MALSCH: If my recollection is
12 correct, I believe you are right. It's been a while
13 since I've looked at those contentions.

14 >> JUDGE MOORE: Thank you.

15 >> MR. MALSCH: Thank you.

16 >> JUDGE MOORE: DOE.

17 >> MR. SILVERMAN: Thank you, Your Honor.
18 Don Silverman for the Department of Energy. The
19 legal issue as stated, is whether the Department is
20 required to carry forward FEPs climate change
21 processes included as FEPs in the first 10,000 years
22 beyond 10,000 years.

23 Judge Wardwell correctly in our view
24 captured our fundamental point, which is there is a
25 distinction here between a FEP and the methodology

1 used for projecting the effects of that FEP going
2 forward.

3 >> JUDGE WARDWELL: I don't believe mine
4 has, so maybe I should clarify it. I thought and
5 I'll do it by asking -- what I thought your position
6 was, was that everything after the "and also"
7 applies to both screened in and screened out FEPs in
8 342(c) 1, 2, 3 and 4.

9 >> MR. SILVERMAN: Yes.

10 >> JUDGE WARDWELL: Apply to both pre and
11 post? Is that your position?

12 >> MR. SILVERMAN: It certainly applies to
13 pre. The ones that were included in the pre-10,000
14 years. And I believe it applies to the post.

15 >> JUDGE WARDWELL: I believe that's your
16 position. And that's the heart of your position.

17 >> MR. SILVERMAN: But the legal issue and
18 I'll verify it in a latter part, it's not the heart
19 of our legal position because the legal issue is only
20 with respect to those FEPs that have been included in
21 the first 10,000 years. That is the legal statement.
22 Our answer to the question, whether we must carry
23 those forward into the post-10,000 year period is
24 yes, and we have done so.

25 Mr. Malsch is muddling in our view the

1 distinction between a FEP, which is a feature, event
2 or process and the methodology of for projecting the
3 effect of that feature, event and process.

4 Remember, and he tried to question whether a FEP
5 means something more than feature event or a process
6 and doesn't perhaps include analytical methods for
7 analyzing that FEP.

8 Well, it doesn't make sense under the
9 regulations to read FEP that way. FEP, first of all
10 the language is clear, climate change is a process.
11 Secondly, one of the very first things you do in the
12 performance assessment is you identify FEPs,
13 features, events or processes, before you ever get
14 to a FEP. So the answer is, we have carried these
15 forward, the FEP, the climate change FEPs into the
16 post-10,000 year period in accordance with the
17 regulation.

18 But our view is then, the real issue here
19 is whether we are permitted under the regulation to
20 use the percolation rate methodology that constant
21 climate change methodology set forth in the
22 remainder of 63.342(c). We believe there is no
23 question that that is what was intended.

24 The NRC and EPA understood there was a
25 very significant element of speculation here beyond

1 10,000 years and identified, if you will, a
2 surrogate for the climate change, whatever climate
3 change methodology DOE might have used in the first
4 10,000 year period. We have -- you asked about the
5 number of climate change FEPs, I'm not sure exactly
6 what the number is. But I have effectively three
7 here that are included.

8 I can give you the numbers, but two say
9 climate change. One is climate change and the other
10 is climate modification, increases recharge. And
11 the third has to do with precipitation. In each one
12 of these cases, we explain in the FEP and the TSP in
13 the FEP analysis report that in the first 10,000
14 years period, we used a certain methodology.

15 We then go on and say and we include this
16 FEP in the post-10,000 year period, but we use a
17 different methodology. We use the methodology that
18 we may use under the regulations. And I don't think
19 there is any doubt that that was what was intended
20 by the regulation. And one of the reasons --

21 >> JUDGE WARDWELL: The only difference
22 would be subtle but as I read your arguments and
23 you're right, as far as legal issues, I understand
24 what you're saying. We agree on the legal issue
25 aspect, but if your argument is that the Defendant,

1 that we differ a little bit, I think, because you use
2 the argument that the "and also" applies, all things
3 following the "and also", the 1, 2, 3 apply to both
4 pre-screen and not prescreen FEPs things following
5 the and also, the 1, 2, 3, applied to both
6 prescreened and not prescreened FEPs?

7 >> MR. SILVERMAN: I could be wrong but
8 believe we could be wrong, but I don't think we made
9 that argument because that's not the legal issue and
10 I would have certainly made every best effort to
11 limit myself to included FEPs.

12 >> JUDGE WARDWELL: I will have to look at
13 that, maybe it was Staff, maybe I thought it, because
14 that's how I interpreted it when I first read it.

15 >> JUDGE RYERSON: Actually, the legal issue
16 in front of us, Mr. Silverman, as is stated by the
17 parties and we agreed to in our Order, there really
18 isn't a dispute as to that as expressed. I do
19 understand you.

20 >> MR. SILVERMAN: I completely agree with
21 you.

22 >> JUDGE RYERSON: But you are not -- you
23 don't disagree we should go beyond that issue as
24 framed and decide the issue that appears in the
25 briefs, which is that's how we do it?

1 >> MR. SILVERMAN: I think you should.

2 >> JUDGE RYERSON: Okay.

3 >> JUDGE WARDWELL: I'm sorry to interrupt
4 you again, but if we are going to address that,
5 whether a 342 c) requires climate change processes is
6 included as FEPs for the pre-10-K period to be
7 carried forward into the post-10-K period using the
8 same approach as the pre-10-K. We agree that's kind
9 of a legal issue as stated?

10 >> MR. SILVERMAN: As the parties have
11 briefed it.

12 >> JUDGE WARDWELL: Yes, if you -- if I'm
13 correct someone has submitted that the reason you can
14 is because everything after the "and also" applies to
15 both prescreened and not screened FEPs in the
16 pre-10-K period, differs from mine because -- not
17 mine but another reading of this that I'm proposing
18 where there is nothing in the regulations in A, B,
19 and even the first part of C that dictates that
20 Nevada -- that DOE has to use the same methodology.

21 Under that -- we'll call it mine for now,
22 my interpretation of those regulations where there
23 is nothing dictating how DOE advances the
24 methodology in the post-10-K period so that you are
25 free to use anything you want to. But if you did

1 use something like the infiltration rate and
2 Nevada --

3 >> MR. SILVERMAN: In which period, Your
4 Honor?

5 >> JUDGE WARDWELL: All post 10-K, if you
6 switch horses in the middle of the stream pre-10, I'm
7 doing this it way, post-10, hey, it's just logical
8 I'm doing it this way. But Nevada's reading is
9 correct that the "and also" and everything else that
10 follows only applies to prescreened stuff, there
11 would still remain a factual issue of whether or not
12 the "may" use the I is technically defensible, if my
13 reading of the stuff before is correct. I've
14 confused everyone on that.

15 >> MR. SILVERMAN: That confused me at
16 least, I apologize.

17 >> JUDGE WARDWELL: I don't know if anyone
18 understands where I'm going with this. But if for
19 the sake of argument, say Nevada's position is
20 correct that everything after the "and also" only
21 applies to those that were prescreened --

22 >> MR. SILVERMAN: When you say
23 "prescreened", what do you mean?

24 >> JUDGE WARDWELL: They're not evaluated,
25 during the 10,000 year period they don't have any

1 impact so we don't have to worry about them in the
2 future.

3 >> MR. SILVERMAN: And I don't agree with
4 that, but go ahead --

5 >> JUDGE WARDWELL: -- for most FEPs. And
6 we have the "and also". And Nevada's position is
7 this "and also" only applies to those that were not
8 analyzed during the pre 10-K period but the "and
9 also" says, oh, gee, even though you didn't, you have
10 to look at them this way and one of the options is to
11 use the I.

12 >> MR. SILVERMAN: Right.

13 >> JUDGE WARDWELL: And if it was, if it was
14 an FEP that was not analyzed for the 10-K period
15 because I mean they're analyzed. That's why I don't
16 like to use the word not "analyzed". I use the word
17 "prescreened."

18 >> MR. SILVERMAN: Analyzed in detail,
19 included.

20 >> JUDGE WARDWELL: Yeah, however you want
21 to word it. You take an FEP, you analyze it during
22 the 10-K period and it's not significant. Okay, it's
23 screened, that's what I using, screened out.

24 >> MR. SILVERMAN: Right.

25 >> JUDGE WARDWELL: Nevada's position is

1 everything after the "and also" only applies to those
2 that were screened out for the pre-10-K period.

3 >> MR. SILVERMAN: Right.

4 >> JUDGE WARDWELL: For sake of argument,
5 let's assume that's correct. My reading of the
6 regulations then says that for even those that were
7 screened in, i.e., that were analyzed and shown to be
8 significant for the 10-K-period, there is no
9 requirement that they be analyzed exactly the same
10 way for the post-10 K period.

11 >> MR. SILVERMAN: I agree with that.

12 >> JUDGE WARDWELL: You can do it anyway you
13 want.

14 >> MR. SILVERMAN: I agree with that.

15 >> JUDGE WARDWELL: But, again for the sake
16 of this argument, we assume their interpretation is
17 correct, 1 through -- 1, 2 and 3 don't apply as a
18 matter of law to those that have been screened in,
19 have been -- need to be carried forward, if their
20 argument is correct. I'm not saying it is.

21 >> MR. SILVERMAN: That's their argument.
22 That's my understanding.

23 >> JUDGE WARDWELL: But before the "and
24 also," my interpretation says there is nothing there
25 that says you have to use the same methodology.

1 >> MR. SILVERMAN: That's correct.

2 >> JUDGE WARDWELL: You are free to use
3 anything you want to.

4 >> MR. SILVERMAN: There is nothing there
5 that requires a particular methodology.

6 >> JUDGE WARDWELL: And one that you could
7 is oh, by the way, I peeked ahead to everything
8 after the "and also" and saw this infiltration rate
9 and saw the understanding of, yeah, it only applies
10 to those that have been screened out in the pre-10,
11 but still it's not a biological thing to use even for
12 those going on. So I'm going to go ahead and use it.

13 Fine, you can use it. But there is a factual issue
14 as to whether it is sufficient or not where there
15 wouldn't be if, in fact, the FEP was -- the FEP was
16 screened out for the pre 10-K period because the "and
17 also" under their interpretation allows you
18 preemptively to use that I.

19 >> MR. SILVERMAN: I agree with you right up
20 to the very end with everything.

21 >> JUDGE WARDWELL: Don't say agree, but you
22 understand what --

23 >> MR. SILVERMAN: Making assumptions as to
24 what their position is. I don't see a factual issue
25 here in the hypothetical that you put forward.

1 >> JUDGE WARDWELL: Because the "and also"
2 doesn't apply to those screened in for the pre-K
3 10-K-period under this assumption of Nevada's
4 position.

5 >> MR. SILVERMAN: Here if I understand,
6 this distinction, this was deemed after the prior
7 discussion we had on the previous contention. I think
8 we are still in legal analysis space.

9 We are interpreting the regulation. I'm
10 not suggesting that if there were a factual -- a
11 contention that raised, for example whether we have
12 adequately applied the percolation rate or we have
13 adequately applied the geologic record, if there is
14 an admitted contention on that point.

15 I take that back, on the geologic record
16 is a different view.

17 On the percolation rate, if we adequately
18 applied it, if there is an admitted contention, if
19 they have said you have not adequately implemented
20 the regulation as written and used the constant in
21 time values improperly, that would be a legitimate
22 factual issue. We are not there now. I think the
23 issue to be decided is may we use that percolation
24 rate as a permissible means for the regulation. And
25 the answer to that is, yes. And we think the

1 statements of considerations support that and that
2 is the position.

3 JUDGE RYERSON: If I understand
4 Dr. Wardwell's point, though, he's giving you a load
5 and taking half of it back.

6 >> MR. SILVERMAN: Keeping a load?

7 >> JUDGE RYERSON: Your position -- we
8 understand your position, .we understand the DOE's
9 position is that the second part of 342.5 applies and
10 that may as used in that section is a get out of jail
11 free card. You are allowed -- your position is as a
12 matter of law you can use it to define percolation
13 rates in the post 10,000.

14 >> MR. SILVERMAN: And NRC anticipated that
15 because of the speculative issue.

16 >> JUDGE RYERSON: What Dr. Wardwell I think
17 is saying, suppose Nevada prevails on that, as he
18 sees, as he reads the regulation, there is still no
19 requirement anywhere that says you have to carry
20 forward. You may have to carry forward, but you
21 don't have to carry forward with the same
22 methodology.

23 >> MR. SILVERMAN: Absolutely.

24 >> JUDGE RYERSON: Okay. But what he is
25 further saying, I think, is that on that question, on

1 whether you can substitute a new, a different,
2 methodology and you choose to elect the inapplicable
3 methodology that happens to exist in the latter part
4 of 342, then you are subject to a reasonableness
5 test. Then there would be a fact question so many of
6 you suggest is an admissible contention on point.
7 But at least in theory, you would be subject to a
8 factual question on whether your choice was then
9 reasonable. So he's saying, there is another way to
10 get there.

11 >> MR. SILVERMAN: I agree, but my point is
12 we are not there now. And we would need to go back
13 to the contentions as admitted unless and until
14 Nevada files new contentions to see if there were any
15 that raised a question about the adequacy of the
16 methodology used --

17 >> JUDGE RYERSON: I'm assuming --

18 >> MR. SILVERMAN: He assumes the
19 correctness of their legal authorities.

20 >> JUDGE RYERSON: I'm distinguishing
21 between the adequacy of the compliance with the
22 specified perk rate and the more general notion of
23 whether it's appropriate to use that perk rate
24 instead of carrying forward the same methodology used
25 in the first 10,000 year period.

1 >> MR. SILVERMAN: Absolutely.

2 >> JUDGE WARDWELL: And the ones they claim
3 would make a difference it would be 11 and 19. Those
4 are not --

5 >> MR. SILVERMAN: This really affects 20211
6 and 19.

7 >> JUDGE WARDWELL: Yes, 202. That's what
8 they effect, because 11 and 19 still have -- it's not
9 a pure legal contention like some of them are, where
10 they are designated a legal contention. That's all
11 that's in it. These legal questions came up as
12 regards of reading 11 and 19 and there is still a
13 factual basis to those. And now it's a question of
14 how do you interpret all the regs and there is really
15 three ways to read these regs, "and also" only
16 applies to those prescreened: And also" apply to all
17 FEPs going on to the post-10 or the "and also"
18 doesn't apply -- only applies to the prescreened ones
19 and screened out ones and those that you go forward
20 with the ones that have been screened in, the
21 methodology isn't dictated.

22 >> MR. SILVERMAN: You know, as we read the
23 rulemaking record here, the NRC in our view intended
24 that beyond 10,000 years, regardless of the
25 situation, that it was acceptable to use the

1 percolation rate. And the EPA's view was the same.
2 When the EPA adopted -- was working on influencing
3 the NRC had to be consistent with, it dealt with this
4 issue in the federal register noticed, this is 161
5 Fed Reg 4059. They talk about the post-10,000 year
6 period, they say between 10,000 years and a million
7 years. There are 45 changes between six climate
8 states incorporated in the TSPA model, without
9 reviewing all the testing.

10 They go on to say, we do not believe it is
11 important to know with certainty when the climate
12 states peak precipitation occurred with modeling, et
13 cetera, et cetera, they would say it's reasonable to
14 conclude and believe the extent of climate change
15 can be reasonably represented by constant conditions
16 taking effect after 10,000 years, that the tenor of
17 what they were saying was after 10,000 years, there
18 is too much speculation and that it is acceptable
19 and appropriate to use percolation rate. And there
20 is no qualification there as to whether it was
21 included, excluded or otherwise.

22 >> JUDGE WARDWELL: Here's a softball
23 question for you to throw out. Given the ambiguity,
24 what logically makes sense with regard to what the
25 "and also" and everything thereafter applies to?

1 >> MR. SILVERMAN: I think ours is a logical
2 interpretation. I won't surprise you, that there was
3 a recognition that it was very difficult and it would
4 produce undue speculation to extend methodologies
5 that might be acceptable for a 10,000 year period on
6 climate change out beyond that time and I refer you
7 again to those statements of considerations and that,
8 therefore, and really, I think it applies to the
9 seismic and the igneous and the general corrosion
10 provisions of 342 (c)2. The regulation says we're
11 working on a million years, we've got to come up with
12 something that's reasonable, that's manageable.

13 It may not be perfect, but it provides
14 a -- some certainty to the applicant to do an
15 analysis that we think is reasonable, reasonably
16 bounding for insurance of protection of public
17 health and safety and because of the need to avoid
18 speculation, we are going to specify you may use
19 these methods, in lieu of any - some other methods
20 you may use during a period of time.

21 >> JUDGE WARDWELL: Having thrown that
22 softball up to you, however, when reading it under
23 Nevada's interpretation of it, though, re-reading it,
24 doesn't it seem like the language is more supportive
25 of theirs, even though it doesn't seem as logical?

1 >> MR. SILVERMAN: I don't read it that way.

2 >> JUDGE WARDWELL: I am surprised.

3 >> JUDGE MOORE: Mr. Silverman, help me.

4 How do you read "and also" to mean except as set
5 forth below?

6 Because under your interpretation, that
7 is --

8 >> MR. SILVERMAN: You mean except for
9 above?

10 >> JUDGE WARDWELL: No, I think it would be
11 below. The 1, 2, and 3, acceptable for 1, 2, and 3.

12 >> MR. SILVERMAN: Let me back up, I'm
13 getting confused. When I look at 2.342.(c) before we
14 get to the 1. It says in essence in regulatory
15 language that if you've got a FEP included in the
16 first 10,000 years, you need to include it beyond
17 10,000 years, you need to project the effects of that
18 FEP. Okay.

19 >> JUDGE MOORE: Then it repeats itself.

20 >> MR. SILVERMAN: Where does it repeat
21 itself?

22 >> JUDGE MOORE: In the last sentence, all
23 of the features, events and processes. It just said
24 that in the previous sentence.

25 >> MR. SILVERMAN: Yes, it does repeat

1 itself.

2 >> JUDGE MOORE: Okay. Now you are to "and
3 also". and I will -- your argument makes perfect
4 sense to me if you read "and also" as except as set
5 forth below which is talking about 1, 2 and 3.

6 >> MR. SILVERMAN: That is essentially, that
7 is consistent with what we're saying.

8 >> JUDGE MOORE: "And also" just doesn't
9 express except as set forth below; that you're
10 suggesting it does suggest several other
11 interpretations of fact. I think the only ones, if
12 you are going to read it, and pay attention to the
13 regulatory language, you would have to accept the
14 other interpretations. But if the legislative
15 history is in the teeth of the regulatory language,
16 which do you follow?

17 >> MR. SILVERMAN: If the legislative
18 history flies in the face, if you will, of -- I don't
19 see it that way. Obviously, you follow the language
20 of the regulation but we interpret the language of
21 the regulation basically to mean that the "and also",
22 that the first part before you get there says you
23 have to project FEPs to be included and the "and
24 also" is intended to mean essentially.

25 But if you have excluded FEP in the first

1 10,000 years, you still have to consider these four
2 particular FEPs going forward. And you may use
3 these methodologists for doing so.

4 >> JUDGE MOORE: Okay. Staff.

5 >> MR. SILVERMAN: Thank you.

6 >> JUDGE MOORE: If you're doing all the
7 work for Staff, why did you bring those other two
8 people anyhow, by the way?

9 >> MS. SILVIA: They have a role in the
10 afternoon. Andrea Silvia on behalf of the NRC Staff.
11 DOE must evaluate the effects of climate change in
12 the post-10,000 year period. One way to do this is
13 to use the specified de-percolation rate in the rule.
14 The de-percolation rate in the rule was intended to
15 account for all significant climate changes effects
16 in the first 10,000 year analysis and therefore
17 constrain the analysis to limit unresolvable
18 speculation regarding future climatic cycle.

19 The statements of consideration for the
20 final post-10,000 year rule contains many statements
21 that support the Staff's interpretation. For
22 example, in describing the NRC's proposed rule, the
23 Commission stated, with respect to consideration
24 effects after 10,000 years, the NRC proposed to
25 adopt specific constraints -- the specific

1 constraints EPA proposed for considering FEPs after
2 10,000 years.

3 >> JUDGE WARDWELL: And can I interrupt you
4 quickly. And it's your position that the "and also"
5 refers to both FEPs that have been screened out for
6 the 10,000 and those that have been screened in for
7 the 10,000 years? If both of those carried forward,
8 can you use the 1, 2, and 3 below to address being
9 igneous seismic climate change in corrosion?

10 >> MS. BUPP: Yes. That quotation was from
11 page 10812 of 74 Registered Federal Notice. In
12 describing the NRC's final rule, the Commission
13 stated "EPA's rule requires DOE to assess the effects
14 of climate change in the period after 10,000 years.
15 This assessment is limited to the effect of increased
16 water flow through the repository." That's at page
17 10813.

18 In response to comments regarding the
19 proposed changes to 63.114, the Commission stated,
20 "The changes at 63.114 ensure that the performance
21 assessment methods such as the support and treatment
22 of FEPs will be at the same for the performance --
23 will be at the same for the periods before and after
24 10,000 years, subject to the limits on performance
25 assessments at 63.342." That's at page 10817.

1 In response to an NEI comment, the
2 Commission stated, "DOE is required to include those
3 FEPs that are screened into the performance
4 assessments for the first 10,000 years after
5 repository closure and the four FEPs specified
6 identified for inclusion, i.e., seismic events,
7 igneous activities, climate change and general
8 corrosion."

9 This response was specifically responding
10 to a comment by NEI which urged the NRC to clarify
11 that FEPs that are screened in for the first 10,000
12 years after repository closure are the only FEPs
13 that need to be considered for the entire post
14 closure period.

15 And specific examples NEI provided were
16 post closure criticality, microbially induced
17 corrosion neither of which are included in the four
18 FEPs specified in the rule. The comment was
19 emphasizing that the four FEPs need to be considered
20 regardless of whether they were included in the
21 initial 10,000 year performance assessment. It was
22 not meant to address how these four FEPs could be
23 addressed.

24 The EPA proposed rule also has language
25 that supports the Staff's interpretation. For

1 instance, I had 70 Fed Reg, at page 49051, EPA
2 stated, "With regard to igneous seismic and
3 climatological FEPs, we propose to specify certain
4 significant aspects or characteristics of the event
5 or process to which DOE may limit it's analyses."
6 On page 49059 the EPA stated, "There are too many
7 uncertainties and permutations available in trying
8 to project a future set of climate conditions. And
9 it is difficult to place specific times on one
10 discreet pulse or precipitation should be injected
11 into the modeling.

12 Instead, we believe that it is reasonable
13 to assume an average increase in precipitation over
14 the entire time frame from 10,000 years through the
15 period of geologic stability and to model those
16 consequences." Further, the language of the rule
17 itself does support the Staff's interpretation.
18 Section 63.342 is entitled, Limits on Performance
19 Assessments. Subsections (a) and (b) state that DOE
20 does not have to consider very unlikely or unlikely
21 FEPs. And subsection (c), which we're talking about
22 here, first, does provide that general direction
23 that DOE has to project the continued effects of
24 FEPs included in the 10,000 year performance
25 assessment.

1 The limits on the performance assessments
2 entitled in the rule are contained in the
3 subsection. The "and also" language indicates that
4 there are additional considerations that qualify or
5 constrain the general direction to carry forward the
6 FEPs. Subsection 1 contains limits for seismic --
7 subsections (1)I and I (2) and IIIi contain the
8 limits for seismic and ingenious activity analyses.

9 Subsection 2 contains limits for the
10 climate change analysis. And Subsection 3 provides
11 the method to limit the analysis of general
12 corrosion. The intent of the Commission that this
13 rule was to provide a way for DOE to limit it's
14 climate change analysis is reflected in the
15 statements of consideration at page 10813.

16 The Commission stated, "The FEPs selected
17 for use in the performance assessment for the first
18 10,000 years should also be used for projecting
19 repository performance after 10,000 years. NRC
20 adopts EPA's additional constraints for inclusion of
21 seismic activity, igneous activity, climate change
22 and general corrosion in the performance assessment
23 for a period of time after 10,000 years."

24 >> JUDGE WARDWELL: But if I heard you
25 correctly on that, they didn't say anything about

1 those FEPs that have been screened out for this, is
2 that right?

3 Read that again? I missed that.

4 >> MS. BUPP: It says "The FEPs selected for
5 use in the performance assessment for the first
6 10,000 years should also be used for projecting
7 repository performance for after 10,000 years. NRC
8 adopts EPA's additional constraints for the inclusion
9 of seismic activity, igneous activity, climate change
10 and general corrosion in the performance assessment
11 for the period of time after 10,000 years."

12 Nevada's construction would lead to a
13 redundant analysis. 63.342 (c)2 allows DOE to use
14 the specified de-percolation rate.

15 If DOE uses this approach and is required
16 to carry forward its FEP analysis, DOE is forced to
17 carry out a redundant analysis. Because the
18 specified de-percolation rate already accounts for
19 future events and processes related to climate
20 change, such as net infiltration,
21 anthropogenic influences including the increase in
22 the number and intensity, national climate change
23 and temporal variability in climate conditions
24 requiring DOE to consider such FEPs in addition to
25 the de-percolation rate is duplicative."

1 Consequently, the rule should not be
2 interpreted to require DOE to carry forward its FEP
3 analyses if it uses the de-percolation rates
4 specified in the rule.

5 >> JUDGE MOORE: Thank you Counsel.
6 Mr. Malsch, you wanted a brief rebuttal?

7 >> MR. MALSCH: Yes, thank you. I'll be
8 very briefly. I just want to address the point just
9 made about how our interpretation would lead to
10 redundant analyses. The language here in 342.(c)2 is
11 may represent climate change by constant times,
12 values or conditions and it may, if it chooses to do
13 so, shall use the de-percolation rates specified in
14 the NRC rule. The word is "may".

15 So presumably, if doing so would result in
16 duplication and redundant analyses, we wouldn't
17 choose to do so. We would choose to do something
18 else instead. So there is never any requirement in
19 the rule as we read it for redundant and consistent
20 analysis.

21 >> JUDGE WARDWELL: To my one question, you
22 seem to, when you start off with your first
23 presentation, your first set of arguments, you
24 recognize the ambiguity in the regulations, how
25 difficult they are.

1 I don't know how to word it. I know what
2 I'm going to get for an answer, but it seems to me,
3 the logical reading of this would be that 1, 2 and 3
4 of (c) applies to anything in the post-10,000 year
5 period, whether they have been screened out or
6 screened in. That just makes logical sense to me.
7 It's in la-la land. Here's a way to do it from here
8 on in.

9 On the other hand, I understand your
10 arguments, but it wasn't until you brought them up
11 that I even thought FEPs was a way to interpret the
12 language. Besides your previous arguments, is there
13 anything else you could contribute that helps
14 overcome the very common sense reading of these,
15 meaning that 1 through 2 and 3 should apply to any
16 FEP whether it was screened out or screened in?

17 >> MR. MALSCH: Well, let me say two things
18 in response to that. First of all, we have to be
19 respectful of the language, the "and also" language.
20 And secondly, I think the regulation should be
21 construed to give Nevada a chance to make arguments
22 about how post-climate change should be considered in
23 the post 10,000 year period. It seems to me if we
24 make a case that it is not speculative and doesn't
25 result in unbounded uncertainty to consider climate

1 change processes in ways other than as specified in
2 342(c)2, we should be given a chance to do so. And
3 if it turns out that we're wrong and that's unbounded
4 and speculative, then so be it, our contention loses
5 on the merits, not on the basis of legal argument.

6 >> JUDGE WARDWELL: Did you understand the
7 different reading that I had than I thought you had
8 of the regulations and --

9 >> MR. MALSCH: Yes, I did.

10 >> JUDGE WARDWELL: And if you want to
11 accept my reading of it, never mind. I strike that
12 question before I ask it, before I get you to answer.

13 >> MR. MALSCH: I will say this, if one
14 thinks a lot about this issue, the principle effect
15 is to give ones self a very large headache. Thank
16 you.

17 >> JUDGE MOORE: Thank you. Just using
18 Mr. Malsch's words, it's a good time to get rid of
19 the headache. So we will break for 90 minutes for
20 lunch. We'll reconvene at 1:30 and take up Issue 5.
21 Thank you.

22 (Whereupon a luncheon recess was taken)

23 >> JUDGE MOORE: We will commence with
24 Issue 5, Mr. Malsch.

25 >> MR. MALSCH: Thank you. Issue 5 deals

1 with Nevada contention safety 041 which provides
2 that land surfaces and erosion in Yucca Mountain is
3 a ongoing process. It will continue both before and
4 after 10,000 years and therefore will eventually be
5 reached where the repository drifts are actually the
6 waste canisters will be exposed directly to the
7 environment, surely a worst case scenario.

8 The legal question assumes as Nevada 041
9 provides erosion will continually increase and be
10 increasingly adverse to performance both before and
11 after 10,000 years and the question is posed whether
12 in these circumstances Part 63 requires us to ignore
13 the radiological consequences for erosion after
14 10,000 years if it turns out there is no effect on
15 dose release before 10,000 years.

16 Now, the regulatory context here is
17 important to understand because erosion is not one
18 of the four FEPs listed so unless it is screened in
19 for the first 10,000 year, it is out the next
20 990,000 years and therefore, the issue is framed in
21 terms of the FEP screening criteria for the first
22 10,000 years.

23 That is an issue, what are the FEPs
24 screening criteria for the first 10,000 years,
25 specifically, must a FEP like erosion which is an

1 ongoing process be speeded up if it does not change
2 dose or releases in the first 10,000 years? We say
3 no. DOE and Staff say yes.

4 Interpretation means a relationship
5 between -- depend on the interpretation among 3 NRC
6 regulations, 63.342(a) 63.102(j) and 63.11(a)5. And
7 let me turn first to 342(a) which is DOE staff's
8 favorite.

9 342(a) says that DOE needs to know --
10 evaluate the impact resulting from any process if
11 the results of performance assessment would not be
12 changed significantly in the initial 10,000 year
13 period after disposal.

14 Okay, but what does -- what is meant here
15 by results? The results mean the ultimate results,
16 namely, the calculated -- calculations of doses. Or
17 the results include intermediate effects such as
18 effect on erosion.

19 Right away, Staff's and DOE's
20 interpretation runs into kind of a problem.

21 You can't calculate doses or releases
22 without having at least some framework and
23 performance assessment. But the first step in doing
24 a performance assessment is select the effects.

25 So you can't have FEPs without a

1 performance assessment but then you can't have
2 performance assessment without FEPs. So DOE's
3 interpretation is an immediate catch 22 problem.

4 Putting that aside, DOE relies here on two
5 regulations, 63.2, and 63.113 and they relied upon
6 the define what is meant in 342(a) by the term
7 "results in phrase -- "results in performance
8 assessments would not be changed significantly."

9 But neither of these regulations really
10 gets it anywhere. 42.2 justify a performance
11 assessment in a way that several products or results
12 are produced including not just a dose but also,
13 effects of FEPs on system performance.

14 There is no definition here of what
15 results mean and surely, no clear indication that
16 results mean 342(a) could be only ultimately effects
17 on dose and releases.

18 And the other regulations DOE refer to was
19 43113 hospes fights whether it ultimate result of
20 performance assessment and does not define results
21 or results within the meaning of 342(a).

22 So we don't believe that 342(a) supports
23 DOE all that much.

24 The next regulation to look at is
25 43.114(a)5. This says quote, "FEPs must evaluated

1 in detail if the magnitude and time of resulting
2 radiological exposure to RAI or radioactive
3 nucleoid releases environment for 10,000 years after
4 disposal would be significantly changed by their
5 omission."

6 Well, providing certain FEPs must be
7 evaluated is not necessarily inconsistent with the
8 idea that other FEPS must be evaluated as well but
9 DOE's interpretation here runs into a serious safety
10 problem. The regulation says to be screened in must
11 affect both the timing and magnitude of exposure.

12 So, under Staff's and DOE's theory, a FEP
13 would increase releases and doses to lethal levels
14 of RAI would be screened out of the assessment if it
15 turned out that those releases or doses appear --
16 timing of their appearance did not change under the
17 regulation, not just show an effect on both the
18 timing and release.

19 So you can't read 114(a)5 as a basis for
20 screening out every FEP that does not meet this
21 particular standard.

22 And that leaves 63102(J) which we think
23 clearly supported Nevada and it says the performance
24 assessment is a systematic analysis among other
25 things identified the processes and event that might

1 affect performance of the repository and quote,
2 "those features and processes expected to materially
3 effect compliance with 63.113(b), the dose standard
4 or the potentially, adverse performance included."

5 Now, the order here is significant.
6 Either kind of screened -- either kind of effect
7 the FEP and these provisions, these provisions must
8 mean different things. That's why the Order is
9 significant.

10 You can be screened in either because of
11 the effect on dose or performance.

12 >> JUDGE RYERSON: Mr. Malsch, do you see
13 any significance to the fact you're reading from a
14 section called concept which is designed to provide
15 a functional overview of the sub-part and does that
16 have any significance or prescriptive value?

17 >> MR. MALSCH: I don't think so. I think
18 it is on a view of the other sections in the
19 regulation.

20 Certainly is an older view to
21 interpretation. Let's say 62242(a) but more
22 importantly, if you look at 102, there are actual
23 requirements in 102.

24 So it is not just a decrease. It
25 actually has requirements in it.

1 >> JUDGE MOORE: Is the word "functional"
2 before overview significant? It says provide a
3 functional overview.

4 >> MR. MALSCH: Well, it does suggest in
5 its adding information to help you understand the
6 sections that follow. I guess in that sense, it is
7 helpful.

8 But I don't think you can dismiss what it
9 says here just because it's titled Functional
10 Overview.

11 >> JUDGE WARDWELL: Is there any definition
12 of what would be potentially adverse to performance?

13 >> MR. MALSCH: Not really.

14 There is an implication in another part of
15 102(j) that gives examples of adverse performance as
16 things like potentially adverse effects of fracture
17 --that's an example of a FEP which would be
18 potentially adverse to performance. I think that
19 sort of supports Nevada's position.

20 >> JUDGE WARDWELL: Doesn't the sentence
21 that you just read goes on to say whether events,
22 classes, scenario classes that are very unlikely,
23 less than one chance over 10,000 years can be
24 excluded from the analysis in 102(j)?

25 >> MR. MALSCH: Yes.

1 >> JUDGE WARDWELL: How does that relate --
2 this says that in the first half of the sentence, it
3 says oh, gee, you got to include these are adverse
4 to performance. But then goes on to say, but you
5 can't exclude those that have less than one and ten
6 to minus 8 chances of occurring.

7 Wouldn't one say that must be the
8 definition of when it is potentially significant or
9 not. Correct?

10 >> MR. MALSCH: You have two different
11 types of FEP screening and the consequence screening
12 criteria and I think when this is talking about the
13 consequence screening criteria, it says as I quoted,
14 "that was expected to affect compliance and filled
15 with potential adverse are included." I think that
16 is significant.

17 I think our interpretation is the best one
18 and the only one that harmonize all three of the
19 regulations 342(a), 102(j) and 114(a)5. But perhaps
20 more importantly, if we construe the regulations as
21 Staff and DOE would have us construe them, we would
22 ignore a potentially very serious safety problem,
23 namely erosion of repository. And this is contrary
24 for interpretation that you must construe the
25 regulations so as to be consistent with public,

1 health and safety.

2 The Staff's interpretation reminds me of a
3 little story about an office worker on the 50th
4 floor of the Empire State Building, walks to the
5 window and sees that some man has fallen off the top
6 of the building and is falling past the window.

7 As the man flies past the window, the
8 office worker asks, how is your health? And the man
9 replies, "no problem so far." That's pretty much the
10 Staff's position. It was erosion, no problem so
11 far is good enough. I think that interpretation is
12 contrary to safety and should not be followed here.

13 >> JUDGE WARDWELL: Can I go back to the
14 sentence on 102(j) where it allows very specifically
15 that if any event is unlikely, it can be excluded
16 regardless of the consequence.

17 >> MR. MALSCH: That is true, that is a
18 separate screening criteria.

19 >> JUDGE WARDWELL: And has not erosion
20 been screened by that process as best you know?

21 >> MR. MALSCH: I think so far, if you
22 believe DOE, it has been screened out on the basis
23 of low consequence. I believe that's the case.

24 But of course, the question really is
25 whether DOE is correct in that respect. And we say

1 no.

2 If there are no questions, I would like
3 to reserve a few minutes for rebuttal.

4 >> JUDGE MOORE: Thank you.

5 DOE?

6 >> MR. KUYLER: Good afternoon Your
7 Honors, Rick Kuyler for the Department of Energy.
8 In addressing this legal issue, I first would like
9 to point to the Board's attention that in other
10 pleadings on other issues before this Board, the
11 State has effectively conceded the agreed upon legal
12 issues in DOE's favor and I'll explain that. And
13 then, I would like to respond to some of the quotes
14 that Mr. Malsch says in his oral argument.

15 First, the legal issue is whether
16 given that a FEP is properly excluded from the
17 performance assessment during the first 10,000
18 years, whether they might consider this FEP in a
19 million year performance assessment.

20 And as explained to you, the plain text of
21 63.342(c) which is the regulation that we are
22 seeking to interpret today includes no requirement
23 to include erosion as a FEP in a million year
24 assessment if it is not included in the first ten
25 thousand years.

1 The State has admitted in other briefs
2 before this Board that 63.342(c) cuts against it.

3 This is 6302. This contention was
4 proffered after the 2009 final rule that essentially
5 copies the text of the Nevada Safety 41 and adds in
6 the question 242 be waived specifically for this
7 erosion FEP. And in the course of asking for a
8 waiver of the Commission's rule in this regard, the
9 State in a number of occasions admits that the
10 regulation cuts against it.

11 On page 10 of United States 203, " The
12 implicit limitation of 63,342(c) has the effect of
13 excluding this contention." And again, this
14 contention is the same contention that we're talking
15 about today effectively.

16 Second, on page 11, because DOE excludes
17 land surface erosion for the 10,000 year assessment,
18 it is not required to include it in the post 10,000
19 year assessment. And that is precisely DOE's
20 position on this. And finally on page 14 of the
21 State's reply on Nevada Safety 203, the State
22 explains why it believes the Commission promulgated
23 the rule that it did.

24 The State says Nevada challenges the
25 Commission's apparent judgment in its final rule

1 that there would be no unreasonable risk to the
2 public, health and safety. FEP in the 10,000
3 performance assessment were limited to those
4 included in the 10,000 year assessment plus the
5 particular FEPs identified in 342(c) of which
6 erosion is not on that list.

7 Perhaps recognizing that 342(c) cuts
8 against it, the State in its legal briefings
9 attempts to change the subject and focus our
10 attention on 63.102(j) but neither the original
11 contention nor the legal issue raises the question
12 of what the effect of that regulation is. So the
13 State is essentially asking a decision on which
14 regulations are controlling, 102(j) or 342(c).

15 I think we explained that 342(c) is
16 clearly a controlling regulation. Based on the
17 plain text of the regulation --

18 >> JUDGE WARDWELL: Could you elaborate a
19 little more on that on why -- certainly, you got
20 the definition of a legal question but let's dig
21 into addressing the legal question and then a
22 process. Now 63.114 brought up that if radiological
23 -- radionuclide releases is the accessible -- would
24 be significantly changed by their emission, than the
25 FEP should be included.

1 And I certainly believe that as a
2 merits issue, one would want to logically determine
3 whether or not the task would be exposed in a
4 million year period because certainly, that would
5 result in a release that would be significant, I
6 think would be fairly obvious by most people. So
7 why isn't that of importance in our assessing this
8 legal question?

9 >> MR. KUYLER: That is the State's
10 allegation, factual allegation in this contention,
11 and in its waiver request in 203. But the
12 Commission reached an opposite technical conclusion,
13 not only the Commission but also the EPA as well,
14 reached an opposite technical conclusion that
15 erosion was not on the list of FEPs.

16 >> JUDGE WARDWELL: Point to me where the
17 Commission says, we have looked at erosion and will
18 exclude it?

19 >> MR. KUYLER: That is not stated.

20 >> JUDGE WARDWELL: Thank you.

21 >> JUDGE MOORE: Counsel, will the
22 resolution of the waiver petition moot this issue?

23 >> MR. KUYLER: I think that this issue
24 comes before the waiver petition issue. If this
25 legal issue is found for DOE, then, the waiver

1 petition has yet to be determined. That remains
2 pending. If the legal issue is found for Nevada and
3 there would be no rule to waive and it -- because
4 they would have gotten the same result as if the
5 Commission had --

6 >> JUDGE RYERSON: If I recall, 202 asks
7 for a waiver in the alternative. And 203 is really
8 not a contention as it is simply a request for a
9 waiver, as I recall.

10 >> MR. KUYLER: That's correct, Your Honor
11 and that's why we believe that 203 itself is
12 effectively a concession of this legal issue because
13 it was not couched in the alternative.

14 >> JUDGE MOORE: Go ahead.

15 >> MR. KUYLER: So in looking at both the
16 text and the regulatory history of 342(c), 102(j), I
17 think it is clear 342(c) sets limits on performance
18 assessment which specifies how -- whether a FEP is
19 to be included or not in the million year
20 performance assessment particularly while 102(j)
21 provides a functional overview.

22 In the statements of consideration for
23 102(j), the Commission stated that except for
24 Section 102 of subpart E, sets forth requirements
25 for performance objectives.

1 So, 102(j) does not set substantive
2 criteria.

3 This date offers no further explanation of
4 why 102(j) would change the reading of 342(c).

5 And I think I heard the State correctly
6 say earlier that essentially, their position is the
7 structure of the regulation and where it appears in
8 the history of the regulation really doesn't make
9 much difference in how to interpret.

10 >> JUDGE RYERSON: If I understand one of
11 Mr. Malsch's arguments, it is essentially something
12 like this: Like many of these regulations, the
13 regulations might be read or harmonized one way or
14 the other; there is a certain ambiguity.

15 His point was if I understand it, that
16 well, in that situation, the NRC should be
17 interpreting regulations on the side of safety and
18 concern about public health and safety.

19 I mean, do you have a response to that? I
20 mean, it would seem that -- do you disagree that
21 erosion clearly seems like a process that might not
22 have any significant effect in the first 10,000
23 years and could be very, very likely to have an
24 enormous effect in the remaining 990,000 years.
25 That's the nature of erosion. I don't think you

1 would be anxious to buy a house on Chesapeake on
2 Calvert Cliffs that would set back 150 feet if you
3 had 10 feet of erosion every year.

4 What's your response to his practical
5 argument?

6 >> MR. KUYLER: The factual allegation to
7 a layman may seem reasonable, but I think that the
8 Commission reached a different conclusion that there
9 was specified FEPs that were chosen that could have
10 a significant effect. And I think there is clear
11 language in the regulatory history that they did not
12 name erosion, but they looked at a number of
13 different possibilities and concluded that the key
14 FEPs that might have been excluded in the first
15 10,000 years, particularly, general corrosion was
16 discussed, would be something that would definitely
17 have an effect in the million year. And in the
18 interest of limiting speculation and not introducing
19 a second or third speculative analysis, EPA and the
20 Commission chose to exclude.

21 If there is a legitimate factual issue
22 challenging the Commission's rule on this, then, the
23 waiver of petition would be the correct one and a
24 significant one.

25 As far as construing the regulations to --

1 in the course of public health and safety, and the
2 Seabrook case in that regard, but don't think that
3 case suggests that the Board can revise the
4 Commission's judgment regarding public health and
5 safety and rewrite the regulation.

6 And again, keeping in mind that the State
7 has effectively conceded this is the Commission's
8 judgment regarding public health and safety.

9 >> JUDGE WARDWELL: Do you have a problem
10 if we do make a decision with regard to public
11 safety if we find that there wasn't strong evidence,
12 that the Commission nor EPA really considered
13 erosion or any other aspect?

14 Maybe they just flat overlooked it.
15 People are human and just didn't think of it.

16 Now, it comes to light and oh, gee, that's
17 an obvious one that maybe should have been looked
18 at.

19 >> MR. KUYLER: That was on 203. That's
20 not the legal issue that we're discussing today. So
21 DOE has submitted its response to that safety 203
22 and explained why we believe that waiver should not
23 be granted.

24 State raises a couple of different issues
25 in its reply mentioned in oral argument today that I

1 would like to address. First is the alleged catch
2 22 in our interpretation of the word "results". The
3 State says results mean calculated dose, no
4 performance assessment capable of producing such
5 results unless events and processes were selected.
6 I think that really ignores the structure of what a
7 performance assessment is.

8 The performance assessment includes
9 the screening of FEPs and then, taking the included
10 FEPs and running the total system for the assessment
11 to compare the results to doses and releases. So
12 there is no catch 22.

13 The State also points to an alleged unsafe
14 result if one follow the plain text of 114(a)5.

15 This provision specifies FEPs must be
16 evaluated in detail, if the magnitude and time of
17 the resulting would be significantly changed by
18 their omission.

19 State focuses on magnitude and time and
20 says our interpretation of this regulation is
21 incorrect.

22 First, we did not offer any interpretation
23 of that regulation. We have merely quoted it in our
24 brief.

25 The State quotes the very same regulation

1 in its contention, raises no dispute of that issue.
2 And DOE also conducted FEPs screening analysis for
3 the erosion FEP under a more conservative approach
4 than is specified in 114(a)5 the analysis shows that
5 magnitude resulting doses and releases would not be
6 significantly changed within the first 10,000 years.

7 And so, we think that issue is a red
8 herring.

9 So --

10 >> JUDGE MOORE: Wrap it up, counsel.

11 >> MR. KUYLER: No further questions.

12 >> JUDGE MOORE: NRC Staff.

13 >> MR. GENDELMAN: Good afternoon Your
14 Honor, Adam Gendelman for NRC staff. I would like
15 to begin with something that the Board has keyed on
16 and the is the Commission's consideration of erosion
17 and Part 63 rulemaking.

18 The Commission discussed comments about
19 geometric characteristics which include erosion and
20 landslides and other processes in the final March,
21 2009 rulemaking at its 74 Federal Register, 10 equal
22 nine to 10.820.

23 Centrally, Section 801 of the Energy
24 Policy Act of 1992 requires that NRC's regulations
25 be consistent with that of EPA and The National

1 Academy of Sciences. In the August 2005 proposed
2 rule, 70FR 49058, EPA discussed NAS's finding and
3 made its own. " The EPA pointed out that the site
4 specific studies performed by DOE indicate
5 increasing erosion to the extent necessary to expose
6 the repository within the period of geologic
7 stability is extremely unlikely citing the reported
8 page 91 and EPA speaking, "Therefore, we do not
9 believe it is important or necessary to require DOE
10 to assess the potential for erosion for climate
11 change." And the final adoption was at 73FR 61284.

12 The Energy Policy Act requires the NRC
13 promulgate regulations not inconsistent with those
14 of EPA and so the Commission did explicitly consider
15 consistent with EPA did not give it special
16 treatment in the post 10,000 year period.

17 >> JUDGE WARDWELL: Can you cite anywhere where
18 the Commission says that specifically in regard to
19 accepting or evaluating EPA'S suggestion recommendations
20 in relationship to erosion specifically?

21 >> MR. GENDELMAN: Beyond the discussion of
22 geomorphic characteristics in the final rule, no.

23 >> JUDGE WARDWELL: Thank you.

24 >> >> MR. GENDELMAN: Inclusion of this FEP in
25 the post 10,000 year performance assessment would also

1 require the Commission consideration of percolation rate
2 other than that specified in 73342(c)2 as Nevada has
3 stated --

4 >> JUDGE WARDWELL: Could you say that again.

5 >> MR. GENDELMAN: I'm sorry, Your Honor.
6 Inclusion of this fact in the post 10,000 year
7 assessment would require use of a percolation rate that
8 is if this FEP was carried in the post 10,000 year
9 period, it would require use of infiltration percolation
10 rates other than those specified in 63.342(c)2.

11 >> JUDGE WARDWELL: Why would that be
12 necessarily true? Mostly what I heard them say in their
13 concern is that the cask would be exposed. They didn't
14 relate it anywhere to infiltration. Now, certainly
15 maybe infiltration really won't change. It's just the
16 casks will be exposed. I didn't have much argument.

17 >> MR. GENDELMAN: Your Honor, I'm beginning
18 with the language of the legal issue itself, discussing
19 erosion shown in increase in infiltration.

20 >> JUDGE WARDWELL: But aren't they using that
21 strictly as a demonstration that there would be some
22 adverse performance that might be potential because it
23 has shown some detrimental effects during a pre-10-K
24 period that says hey, does not make sense to look at it
25 during the post 10. And our concern is that the whole

1 cask may eventually be exposed.

2 >> >> MR. GENDELMAN: Well, I think insofar as
3 that issue suggest, manifest as an increase in seepage
4 --

5 >> JUDGE WARDWELL: The Constant I is a
6 post-closure effort and this discussion, the legal
7 question is that a pre-10-K discussion that was
8 agreed upon with regard to legal issue? So it has
9 nothing do with the Constant I.

10 >> MR. GENDELMAN: I want to make sure I
11 understand the question.

12 >> JUDGE WARDWELL: Good, then you can
13 explain it to me too.

14 >> MR. GENDELMAN: In the post 10,000 year
15 assessment, it's the Staff's understanding that the
16 way this FEP would manifest as potentially
17 detrimental for performance would be through among
18 other things, an increase in the depercoration rate.

19 >> JUDGE WARDWELL: But not necessarily so.
20 It could be just a pure physical removal
21 of material regardless of the I rate. Their concern
22 is hey, you may remove all the material and expose
23 the cask as I heard them say in the post 10,000 year
24 period. That's their concern.

25 And you know, other people brought up, oh

1 yeah, that also means the change in the I. It may
2 or may not.

3 The I rate may be the same, the total
4 volume of water or the timing of any infiltration
5 may decrease because it's getting thinner but the
6 "I" does not necessarily as a factual issue, that
7 would need to be brought up at hearing for the post
8 10,000 year period.

9 I think they are assessing and certainly
10 could just look at the mechanical removal of the
11 thickness of material, could they not?

12 >> MR. GENDELMAN: They could and I think
13 that certainly goes more to merit which of course is
14 not an issue here.

15 As to the other argument regarding the
16 explicit provisions of Section 63.342(a), as Nevada
17 has stated, if this FEP is screened out in the first
18 10,000, and there is no other operation included
19 with these screened out in the post 10,000. And
20 while possible impact performance, one of the
21 assumptions in this legal issue is that there is no
22 showing of an increase in radiological exposures or
23 releases.

24 And I think this gets to something that
25 was being discussed before the definition of the

1 results for 342 and for 114.

2 The definition of performance assessment
3 in section 63.2 is that first, identifying the
4 feature of event and processes and I'm paraphrasing,
5 or sequence of FEPs that might affect the outcome of
6 disposal system, that identification. Second,
7 examines the effect of those FEPs and sequences of
8 events and processes upon the performance.

9 And then, third, estimates the dose
10 incurred by the REMI including associated
11 uncertainties as a result of releases caused by
12 effects. And so, the Staff argued that the only
13 reasonable reading of results with respect to the
14 performance assessment is the -- that the third
15 aspect, the dose result which is what performance is
16 definitively measured by. The performance of the
17 repository is, definitively combines with the
18 requirements in 63.311, 321 and 331 for the
19 different dose requirements.

20 And so, reading results as the dose, sub 3
21 and the definition of performance assessment, then,
22 114(b)5 and 342 discussing the significant change in
23 the results of the performance assessment, meaning
24 significant change in dose which again, I think is
25 very successful and start thinking of what the

1 performance assessment is accessing would lead one
2 to conclude that the FEP in the first 10,000 years
3 did not significantly affect that result. It would
4 be screened out.

5 And in this case, the assumption is there
6 is no showing of any change let alone, a significant
7 one. Thus Your Honors, the assumptions in this
8 legal issue require that this FEP be screened out in
9 the first 10,000 year period and therefore under
10 63.342, be screened out in the post 10,000 years.

11 Unless the Court has any questions, I
12 don't have anything further.

13 >> JUDGE MOORE: Thank you Counsel.

14 Mr. Malsch, you wish brief rebuttal?

15 >> MR. MALSCH: Yes, thank you. Just two
16 quick points. First of all, I don't propose to
17 repeat it here but there has been extensive
18 discussion whether the Commission in fact considered
19 erosion in connection with its 2005, 2006 rulemaking
20 and the post 10,000 year performance assessment that
21 discussions in connection with our rule waiver
22 petition, Nevada Safety 203. So I would just refer
23 to the Board that discussion with respect to the
24 issue whether the Commission actually considered
25 erosion in the post 10,000 year period.

1 The only other point that I wanted to
2 address was some proposed concession. I don't
3 understand that.

4 We filed a rule waiver on the premise that
5 we could lose on this issue and that we could be in
6 a situation where erosion could be screened out in
7 the first 10,000 years because that's the premise
8 for our petition, because we don't know how this
9 Board is going to come out and we don't know how the
10 ultimate proof will come out on how fast erosion
11 progresses.

12 So that is not any kind of concession,
13 it's just setting up a factual premise for to make
14 our rulemaking petition a meaningful one so that it
15 actually is correctly framed. So I don't understand
16 how you can make any concessions on this particular
17 issue.

18 >> JUDGE MOORE: If as the Staff points
19 out, EPA in its rule didn't consider erosion, and
20 the NRC has to adopt consistent standards, would it
21 not necessarily be inconsistent for the Commission
22 to have included erosion?

23 >> MR. MALSCH: I don't think so.

24 First of all, the rule, EPA rule does not
25 have any mention of erosion. What you find is some

1 indication in the rulemaking history that EPA
2 considered erosion. But the requirement and the
3 statute is that the NRC rule must be consistent with
4 the EPA rule. There is no mention here of the
5 rulemaking history necessarily.

6 But more importantly, I think the EPA rule
7 which is in 197 -- I believe it's 19736 has
8 introductory clause section accept as introductory
9 clause on the nature of the statute because policy
10 act which is the in effect, EPA rules are minimum
11 requirements NRC is consistent with EPA rule as long
12 as requirements are equal to EPA minimum
13 requirements but NRC has the authority under the
14 public health and safety to ask for more.

15 That simply turns us away from the rule
16 into what the NRC rule provides and thus been
17 arguing about so far earlier this morning.

18 So I don't see how the EPA rule can be
19 controlling one way or the other.

20 Thank you.

21 >> JUDGE MOORE: Thank you. Would you
22 like to go ahead and address Issue 6?

23 >> MR. MALSCH: Yes.

24 In Issue 6, Nevada argues that preliminary
25 and conceptual repository design information is

1 insufficient.

2 And that final design information must be
3 provided in the license application. And by final
4 design information, we mean that level of design
5 information one finds in a typical final safety
6 analysis report under Part 50 operating license and
7 a combined license application under Part 52 and DOE
8 and Staff disagreed.

9 The resolution of issue we believe turns
10 upon looking carefully at the licensing process in
11 Part 53 and especially its history as it resolves
12 from Part 60.

13 Part 63 does not use adjectives "final" or
14 "conceptual" or "preliminary" in specifying the
15 amount of design detail required in the license
16 application.

17 In two places it does ask for information
18 from DOE that might affect or might influence the
19 final design, but that does not necessarily mean as
20 DOE would have it, the final design is yet to be
21 developed. It could just as easily mean that the
22 final design is available and should be included in
23 the license application. But the NRC wanted a full
24 and complete disclosure from DOE of not only factors
25 that it knew influenced and in fact affected the

1 final design but also a disclosure of facts that at
2 one time, they thought may influence or impact the
3 final design so NRC could do in effect, a second
4 guessing of DOE's design evaluation.

5 So I don't think the brief references here
6 twice to final design carries today much one way or
7 the other.

8 Instead, what I think is more important is
9 to look at the overall structure of Part 63.

10 Most importantly, there is only a single
11 license application under Part 63 and only one
12 safety analysis report. There is no separate
13 application to operate. There is merely an
14 application and a update of the application to
15 construct. And the regulations specify the content
16 of that update 63.24. In that regulation, there is
17 no specific requirement to deal with any design
18 safety evaluation or submit any final design
19 information.

20 So there is only one safety analysis and
21 only one review of design under Part 63 and that
22 takes place at the construction authorization stage.

23 In NRC practice, that usually means that
24 an FSAR level of design information is insufficient
25 and we are talking here about an FSAR level design

1 information.

2 The second indication and the second
3 regulation to take a peek at is 63.21(c)3(i).

4 This says that the application at the
5 construction authorization stage must include quote,
6 "dimensions, material properties, specifications,
7 and analytical and design methods along with any
8 applicable codes and standards."

9 This language very closely resembles the
10 language in a 52.79(a)4 which specifies the contents
11 in terms of design information, of an application
12 for a combined license which that regulation makes
13 clear is an FSAR level of design information.

14 The contrast with 5204(a)3 which describes
15 what is a FSAR level of design information, a
16 preliminary design information, that is described as
17 consisting only of general arrangement and
18 approximate dimensions.

19 Here, we have not general arrangements and
20 approximate dimensions but instead a requirement
21 that there be a description of specifications,
22 arrangements and dimensions, nothing approximate or
23 preliminary about it at all.

24 The licensing process which led to Part 63
25 reinforces this concept, that Part 63 was a

1 deliberate departure from the old stage licensing
2 process in Part 50.

3 The most important part of that history is
4 we submit the indication very early on in the Notice
5 of Proposed Rulemaking at formal safety reviews
6 would be conditioned before financial and
7 institutional commitments could influence the
8 stringency of the review. That's the 44 Fed Reg
9 70410.

10 So the clear implication is here that all
11 design safety reviews would be completed before the
12 repository was constructed and there would be a
13 related financial and institutional commitment.

14 So in summary, we believe the
15 regulations and history indicate that Part 63 is a
16 deliberate departure from Part 63. This departure
17 was intended only one design safe and that's at the
18 construction authorization stage. This review takes
19 place before there are significant and institutional
20 and financial commitments.

21 This -- normally NRC practice suggests
22 there must be an FARS design and the language in
23 63.21 intends to confirm this.

24 We believe the closest analogy to Part 63
25 is the combined licensing process in Part 52 which

1 under 5279 clearly requires a design information at
2 the construction authorization stage.

3 The history cited by Staff just calling a
4 process multi-step or multi-staged does not tell us
5 a whole lot about what kind of information must be
6 included in what particular stages. And calling
7 Part 63 risk-informed, does not resolve the issue
8 because after all, Part 52, the combined license
9 application requirements call for a final design
10 information which clearly that is risk-imformed so
11 there is nothing incompatible with the idea of a
12 regulation being risk-informed and the idea that at
13 the construction authorization stage, one must
14 include final design information.

15 I think the most difficult question here
16 is whether -- what is wrong with looking at the
17 application here and deciding on a structure system
18 or component basis, SSE basis by basis, whether the
19 amount of design information is clearly not
20 sufficient to do the necessary safety evaluation.
21 This would be a case-by-case approach involving
22 difficult judgments in each case about level -- what
23 level of design information is sufficient.

24 And I would concede that in theory, that
25 could be done. I mean, after all, that was done for

1 all the hundred reactors or so that are in operation
2 today, did not necessarily produce an unsafe result.
3 But what it did produce, results in which there was
4 considerable regulatory instability and constant
5 back-fitting because the practice -- as practice and
6 history developed, it turned out that when the final
7 design was developed and issues arose, with the
8 result that when an application was filed at the
9 operating license stage, there was a constant need
10 for very expensive back fitting and regulatory
11 changes.

12 I think the regulatory history shows a
13 deliberate intent to avoid and prevent that
14 situation from occurring and that's why case-by-case
15 judgment would be insufficient.

16 >> JUDGE MOORE: But doesn't the analogy
17 break down when you consider that you're talking a
18 hundred year span of time from the grant of a
19 construction permit to final closure? An awful lot
20 can happen in a hundred years.

21 MR. MALSCH: Well, that's true but I'm
22 really focusing on the span of time between
23 construction authorization and authorization to
24 receive possess and dispose of waste, we were
25 talking about four or five years. It is interesting

1 if you look at the regulations that define the
2 content of the application to amend the license for
3 final closure. There is nothing to hear about
4 design -- the assumption it's already been settled.
5 Nor is there any indication to -- the updated
6 application to receive and possess waste, there is
7 no indication there that is any design information
8 to be submitted.

9 The clear assumption is that whatever you
10 need by way of design information, is in the
11 application at the construction authorization stage.

12 And I think the history of regulatory
13 processes for complex facilities under the Atomic
14 Energy Act, that is associated with a final level of
15 design information, not a preliminary level of
16 design information.

17 >> JUDGE RYERSON: Is this to some extent,
18 Mr. Malsch, a semantic distinction that we are
19 perhaps drawing? I have some concern about where
20 resolution of the issue as it has been put to us
21 today, as to where that takes us.

22 Now, there are two contentions, two
23 identical contentions I think, 146 and 201 basically
24 say the same thing.

25 So those contentions would be resolved by

1 our decision. But beyond that, don't we have an
2 obligation in other contentions that deal with the
3 sufficiency of the design information to basically
4 look at each of those as a factual matter and it's
5 not clear to me how much resolution of this issue
6 will affect that.

7 Could you comment on that?

8 >> MR. MALSCH: I think if this issue is
9 resolved in our favor, then that should effectually
10 moot those other contentions because it will turn
11 out that for those other contentions, needed a final
12 design information and it wasn't provided.

13 >> JUDGE RYERSON: So you would envision
14 summary disposition on those other contentions?

15 >> MR. MALSCH: We would. We would.

16 Just to give you an indication by way of
17 background, typically, a preliminary safety analysis
18 report is submitted at a stage when at least for
19 safety significant structure, this is from
20 components, the level of design is about 30 percent
21 complete.

22 And FSAR level design is about 70 percent
23 complete.

24 In a PSAR, the application usually
25 contains criteria for development of the design,

1 codes and standards and then, as Part 50 suggests,
2 approximate of dimensions in general arrangements,
3 not exact dimensions. In contrast at the operating
4 license stage, you would have much more detailed
5 design information, you would have piping
6 instrumentation diagrams, design procurement
7 specifications, electrical diagram and ventilation
8 diagrams.

9 You don't see any of that in typical
10 preliminary safety analysis report. And that's the
11 distinction, level of generality in terms of how the
12 design is described and how much detail is given to
13 it.

14 >> JUDGE WARDWELL: Did you say that the
15 FSAR in general is based on about 70 percent design
16 completion?

17 >> MR. MALSCH: When the FSAR was
18 submitted, the design was about 70 percent complete.
19 I'm not exactly sure I would say 70 percent of the
20 design was in the FASR, that would be an enormous
21 calculation.

22 >> JUDGE WARDWELL: But what's your
23 definition of final design, then? I mean you've
24 used that argument because the word "final"
25 preliminary are in here in 63, then, therefore, it

1 must mean final. So you're satisfied with
2 75 percent as being final design? What's your
3 definition of final design?

4 >> MR. MALSCH: Final design includes as I
5 just suggested includes such things as actual
6 dimensions, not approximate dimensions, actual
7 arrangements, not general arrangements. Diagrams,
8 design procurement specifications and the like. If
9 any application or reference some place in the
10 application.

11 >> JUDGE WARDWELL: And your position is
12 that even if those are important to waste isolation
13 or other safety aspects, they still should be in
14 there or only those components that are safety
15 related?

16 >> MR. MALSCH: I would say logic would
17 only apply to structure systems either important to
18 safety or important to waste isolation.

19 >> JUDGE WARDWELL: But certainly, you
20 don't envision that every final detail can possibly
21 be nailed down at this time when or that you would
22 ignore other information that's gained in the future
23 during this period of time that yes, they are going
24 to receive and possess something within five years
25 but they are also going to be receiving and

1 possessing it as construction continues over a 100
2 year period?

3 >> MR. MALSCH: That's true and in fact,
4 when you look at the regulation and updating the
5 license application, it talks about updating it with
6 among other things, the design information developed
7 during construction.

8 So I think contemplated in that although
9 there should be a FSAR level in the design
10 application, that could change as construction
11 progresses and that would be the appropriate
12 suggestion of an update.

13 >> JUDGE WARDWELL: But they never stated
14 that a FSAR type of design information needed to be
15 submitted with this application?

16 >> MR. MALSCH: It is not specific.

17 AS I said, it doesn't use the word
18 "preliminary" or "conceptual" and FSAR versus PSAR.
19 But I think the history shows that there was to be a
20 definite departure from the approach whereby at the
21 construction authorization stage, all you had was a
22 PSA design information. I think that was the
23 Commission's clear intent.

24 >> JUDGE MOORE: The contention is
25 general. Give me some specifics as to what's

1 missing. If you look at 63.21.3, little (i) --

2 >> JUDGE WARDWELL: I missed your letter.

3 63.21 3 (c) --

4 >> JUDGE MOORE: Are there specifications
5 of the waste package missing?

6 >> MR. MALSCH: I think there are some
7 elements of it missing. I can give you some
8 examples of things that are missing.

9 >> JUDGE MOORE: Are the dimensions
10 missing?

11 >> MR. MALSCH: There are some dimensions
12 missing.

13 Let me give you some examples from the
14 application.

15 For example, let's take the so-called tad
16 canister. It says, this is SAR Section 1.3.1.2.4.
17 It says "The thermal capacity of tad canister as
18 well as its capability to meet radiation dose limits
19 have been left to the cask vendor." It says codes
20 and standards have been evaluated and design
21 requirements and testing specifications are being
22 developed to ensure the functions performed by the
23 transport and replacement vehicle, the thing that
24 replaces the waste. It says that those are being
25 developed. Those are just two examples.

1 There are probably numerous other examples
2 in the license application there where design
3 details are missing and left for later development
4 and later consideration.

5 >> JUDGE RYERSON: Do you agree,
6 Mr. Malsch that the fundamental or the prime
7 requirements goes back to 63.21 (a) which says, the
8 application must be as complete as possible in light
9 of the information that is reasonably available at
10 the time of docketing.

11 That's the general statement and then it
12 proceeds to be more specific on other aspects of the
13 application. But would you agree that that is the
14 prime standard that applies?

15 >> MR. MALSCH: No, I don't think that is
16 the prime standard because if you take it literally
17 and say that all that is required to be submitted is
18 whatever is reasonably available at the time, then,
19 DOE is in total control of the contents of the
20 license application which can't possibly be the
21 case.

22 I think all that regulation means, I
23 think the history of the regulation supports the
24 proposition is that it boils down whatever
25 information is required to be submitted by other

1 regulations has to be submitted. This regulation
2 just tells you to be especially fullsome and
3 complete in your disclosures but it does not excuse
4 you in complying with any other regulation
5 disclosure requirement.

6 >> JUDGE MOORE: Isn't it a case by case
7 -- you mentioned this before but if you apply the
8 language of 63.21(a) and apply any of the other
9 provisions of 63.21, it is a determination depending
10 on what component you're looking at at any
11 particular time, whether there is enough
12 information? And at what stage? Isn't that what's
13 reasonable available at the time of docketing, all
14 that implies?

15 >> MR. MALSCH: I think that begs the
16 question of what the regulation requires. The
17 regulation about reasonably available at the time of
18 docketing does not undercut any other Commission
19 regulation. They have to be satisfied at first.

20 So putting that regulation aside, the
21 question then is what does 5021 require in terms of
22 the contents of the license application? And we say
23 that regulation considering the legislative
24 regulatory history indicates we are talking about a
25 final level of design information.

1 If we're right about that, the sentence
2 you quoted doesn't undercut the requirement. If
3 we're wrong about that, we're just wrong about that
4 and that particular section is just irrelevant.

5 >> JUDGE WARDWELL: There is nothing in
6 this reasonably available statement in 21(a) that
7 excludes DOE from vigorously analyzing everything it
8 can up to that point. There has to be a reason why
9 it is unavailable. They can't just dictate that it
10 is not available because we didn't get it. Isn't
11 that a fair assessment of how that is interpreted?

12 >> MR. MALSCH: I think that is a fair
13 assessment except that even if they had every good
14 reason for not having a particular piece of
15 information available in terms of logistics,
16 resources, timing, personnel; still, if another
17 regulation requires it be submitted, that regulation
18 does not offer them any respite or excuse. It has
19 to be submitted and in fact history indicates, that
20 provision indicates that other regulations have to
21 be satisfied before that regulation even comes into
22 play.

23 >> JUDGE WARDWELL: But doesn't 20 -- 32(b)
24 and 24(b) go to a certain extent, defining what
25 isn't reasonably available? And in there, aren't

1 there statements with regards to what needs to be
2 updated later which to me defines what isn't
3 available now?

4 >> MR. MALSCH: I think that is a fair
5 comment. But if you look at the regulations in
6 terms of what is to be updated later, you will see
7 no reference to include a safety evaluation of any
8 design; there is no update calling for a safety
9 evaluation design. The only safety evaluation of
10 design mentioned in the regulation is the one that
11 takes place at the construction authorization stage.
12 That's it.

13 >> JUDGE WARDWELL: But if a design is
14 going to change because of any update, it would
15 require that also?

16 >> MR. MALSCH: That is true. That is
17 true.

18 So, we would say that the regulations and
19 the history contemplate there would be a final level
20 of design information but that new information
21 developed during construction would call for an
22 update.

23 But that does not undercut the initial
24 requirement that the initial application at the
25 construction authorization stage be complete and

1 have a final level of design information.

2 >> JUDGE MOORE: Thank you, Mr. Malsch.

3 >> MR. MALSCH: I would like to reserve a
4 few minutes for rebuttal.

5 >> JUDGE MOORE: DOE?

6 >> MR. KUYLER: The legal issue before the
7 Board is not what the right level of design detail
8 should be in the license application or even whether
9 the existing design is preliminary and conceptual.
10 Those words don't appear in the legal issue. The
11 issue of what the right level of design detail is
12 whether DOE's design preliminary or construction
13 activities cemental railroad are factual issues in
14 this contention the issue is whether there is a
15 regulatory requirement for final design information
16 to be submitted for all components across the board
17 in the repository.

18 Plain language of Part 63 does not include
19 any requirement like this for final design.

20 The State appears to avoid the plain text
21 issues and focuses instead on the alleged overall
22 structure of Part 63 and the alleged single step
23 process that is analogous to Part 52 and seeks to
24 import standards from Part 50 and Part 52 into Part
25 63 where they don't appear.

1 As we pointed out in our brief, the
2 Government regulation of approximate regulation of
3 63.21(c)3 which does not refer to final design
4 information. Instead as we have explained, this
5 regulation and the other provisions in Part 63 allow
6 DOE to submit an application that provides
7 sufficient information to demonstrate compliance
8 with performance objectives to enable the Commission
9 to reach the safety conclusions and essentially a
10 functional analysis while retaining the flexibility
11 to further design.

12 State brings us to 63.21 (c) -- I think we
13 raise this as well which talks about information
14 probable license specifications. The regulation
15 adds special attention in SAR which comparable
16 license specification, special attention must be
17 given to those items that may significantly
18 influence the final design. That provision makes no
19 sense.

20 If there already had to be a final design
21 in SAR particularly if one considers what a license
22 specification is which is something that a licensee
23 must do or not do under the terms of its license
24 after he gets it.

25 So why would one have a license

1 specification addressing final design if it already
2 had to be there.

3 So, although the plain text is clear, the
4 Board may not require further and believes the
5 regulatory history confirms our reading of the
6 regulations.

7 The State relies on the two key arguments.
8 First, that if a design is not final, then, it
9 necessarily must be preliminary or conceptual and
10 therefore, must be deficient.

11 We disagree with that unsupported
12 characterization of our license application, and
13 more importantly, the questions of whether the
14 design is preliminary and conceptual or whether such
15 a design would be sufficient if it existed are not
16 the legal issue before the Board today.

17 Second, in an effort to manufacture the
18 finality requirement, it doesn't appear in the text
19 of Part 63, the State relies on an extensive
20 discussion of regulatory history of other
21 regulations, Part 60, the licensing support network
22 and various other rulemakings over the years.

23 We think that most of that regulatory
24 history cuts in our favor in supporting the idea of
25 a functional analysis and in any case, does not

1 change the plain text of the regulation.

2 >> JUDGE WARDWELL: Is there anywhere in
3 the regulations that provides guidance in regards to
4 what you as the applicant might have just decided
5 you didn't want to evaluate so you didn't collect
6 any data so therefore, it wasn't reasonably
7 available even though it could have been if you were
8 conscientious in your effort to incorporate it into
9 the design at this point in time when you submitted
10 your application?

11 >> MR. KUYLER: I'm not sure I entirely
12 understand your question, Your Honor but --

13 >> JUDGE WARDWELL: The argument comes up,
14 Nevada brought it up today and certainly it's
15 logical that if final design isn't required or if
16 you go to 21(a) for instance and just whatever is
17 reasonably available, one could interpret that to
18 mean, oh well, DOE just won't bother getting some
19 information, therefore, it won't be available when
20 they submit their application, therefore, it doesn't
21 need to be part of the application. But it was
22 because -- it wasn't because the information
23 couldn't have been gotten, or collected to provide
24 the design, but that the applicant didn't bother
25 doing it because of personnel expense, whatever,

1 they just decided we are not going to do it.

2 21(a) still allows me just to submit an
3 application with whatever I've got available at that
4 time.

5 >> MR. KUYLER: I don't agree with that,
6 Your Honor.

7 I think that the reasonably available
8 language does not swallow up all the other
9 substantive requirements in Part 63.

10 The Department must submit a license
11 application that has sufficient detail to enable the
12 Staff to review and to reach conclusions, final
13 conclusions as appropriate for the construction
14 authorization stage important to safety --

15 >> JUDGE WARDWELL: Does it allow you to
16 update your design in the future between the
17 construction authorization and up to the receive and
18 possess state?

19 >> MR. KUYLER: Yes, Your Honor, we
20 believe it does; 63.24 talks about updating the
21 application and expicitedly include the design
22 information that's in 63.24(b)1.

23 >> JUDGE WARDWELL: What does it say there
24 with regard to the types of things that could be
25 considered either there or 32(b) or both?

1 What are the types of things that they are
2 thinking about that might be included in those
3 updates?

4 >> MR. KUYLER: I think they are talking
5 about items that might have been identified during
6 construction or deficiencies that have been revealed
7 through construction.

8 >> JUDGE WARDWELL: So it would be
9 something that you came upon while you're
10 constructing that you would update?

11 >> MR. KUYLER: That appears to be what's
12 contemplated in those regulations.

13 >> JUDGE WARDWELL: I think it also says
14 something about long-term testing too. Certainly if
15 you had such a program with such an application like
16 63, High Level Waste, there may be some very
17 long-term testing stuff that goes on, that won't be
18 complete for decades.

19 That I can understand. But baring that,
20 isn't that pretty much what they are talking about
21 as far as updating? They are not talking about, oh,
22 you know, here's some other stuff.

23 You should have a pretty well-defined set
24 of design completed at the construction
25 authorization stage exclusive of what you might see

1 different during construction or long-term testing
2 assessment --

3 >> MR. KUYLER: I would agree with that
4 and I believe that is generally what the Department
5 has done.

6 There is an updated safety analysis that
7 must be submitted with the receive and possess
8 license. In 63.41 there is a provision for more
9 general reviews, 63.41(b), that activities to be
10 conducted at the Geologic Repository operations area
11 will conform with the application as amended, the
12 provisions in the Atomic Energy Act, et cetera and
13 the rules and regulations of the Commission.

14 So, again, I don't see any requirement
15 that the design be final at the construction
16 authorization stage nor is it clear exactly what
17 "final" means in Part 63.

18 >> JUDGE MOORE: Is there to be any
19 significance to the fact that in 63.21(c)2, the
20 Commission uses the words "approximate dimensions"
21 when speaking of the GROA and less than 50 words
22 later in speaking of not only the GROA but the
23 engineered barrier systems, it speaks in terms of
24 dimensions and specification without the word
25 "approximate". Does that not clearly imply that

1 they are different? And there is a different level
2 of detail?

3 >> MR. KUYLER: It may or may not. I'm
4 not sure that it clearly implies that. The State
5 talks in its legal brief about dimensions and
6 specifications and the alleged lack thereof.

7 We think that and there is a great deal of
8 detail in the design that exist in the application
9 and more importantly, though, by its own terms, this
10 contention raises a pure legal issue, does not
11 allege any specific components lack dimensions and
12 specifications. By its own terms offers no factual
13 support and there are other contentions that it has
14 raised and have been admitted and alleged design.

15 We believe they should be evaluated under
16 the functional analysis that exist in Part 63. And
17 --

18 >> JUDGE WARDWELL: Let's make sure this
19 round is going to go to the next question, that even
20 if we resolve this legal issue that there is nothing
21 specific in 63 that dictates final design be
22 submitted, that does not necessarily preempt any
23 factual issue associated with sufficiency of the
24 design that may be brought up in some of the
25 contentions. Is that a fair assessment?

1 >> MR. KUYLER: Not that's already in an
2 admitted contention, your Honor.

3 >> JUDGE WARDWELL: That's what I mean,
4 thank you.

5 >> JUDGE MOORE: Thank you Counsel. NRC
6 staff.

7 >> MS. BUPP: Good afternoon Your Honor,
8 my name is Magaret Bupp. I represent the NRC staff.
9 NRC staff's position with respect to Legal Issue 6
10 is that the regulation does not require final design
11 information to be included for all topic and license
12 application.

13 Rather, the finality and level of the
14 detail for information provided will vary for each
15 license application according to the risk
16 significance of the topics. Therefore, any
17 contention concerning sufficiency of design
18 information, in the license application must be
19 resolved in on the technical merits.

20 First, the regulations do not explicitly
21 require final detailed design to be submitted across
22 the Board for each topic in the license application.

23 The safety finding that the NRC must make
24 at the construction authorization stage is whether
25 there is reasonable assurance that the types and

1 amounts of radioactive material described in the
2 application can in a geological repository
3 operations area of the design proposed without
4 unreasonable risks to the health and safety to the
5 public and whether there is a reasonable expectation
6 that the materials can be disposed of without
7 unreasonableness to the health and safety of the
8 public. At the construction authorization stage,
9 the only information that is required to be
10 submitted is information that is needed to support
11 the Commission's finding.

12 As I think as has already been discussed
13 extensively in the other two prior arguments, 63.21
14 (c) 3 describes the requirements for description and
15 discussion of design various components of the
16 Geologic Repository operations area and engineering
17 barrier system, does outline what type of
18 information, DOE must submit but even here, does
19 not state whether this information must be final.

20 In addition, the regulatory history of
21 both Part 60 and Part 63 support the staff's reading
22 of the regulations.

23 As the Commission was considering Part 60
24 final rulemaking, the Commission stated, "if the
25 issue being address in the license application is

1 one that is important at construction authorization
2 stage, reasonable available standard is intended to
3 require DOE to develop and provide information in
4 detail. This shows that even prior to the
5 implementation of Part 63, the Commission understood
6 that not every topic in the license application
7 would require the same level of detail.

8 Part 63 itself is designed to provide
9 necessary flexibility for making licensing decisions
10 consistent with the amount and level of detailed
11 information, appropriate at each licensing stage.
12 That means the level of detail for information
13 provided at each little stage may vary.

14 For example, knowledge available the time
15 of construction authorization will by be less,
16 August annealing on the part of the Commission
17 that information could change over time, that DOE
18 could provide additional information over time and
19 that was built into the requirements in Part 63 for
20 a license application followed by an update in the
21 license application and two, reviews by the NRC, a
22 separate construction authorization review. And
23 then, a later possess and --

24 >> JUDGE WARDWELL: Do you know of any
25 other update criteria besides listed in 24 and 32(b)

1 respectively, specifically focusing on just that
2 information that's observed during construction or
3 discovered during construction or long term testing?
4 I'm paraphrasing, there may be a couple of others in
5 there?

6 >> MS. BUPP: There is the only
7 requirement specifically for the license application
8 update. However, during the construction period, if
9 there were to be hearing changes made to safety
10 significant portions of SAR during the period of
11 construction, DOE would have to follow the 63.44
12 change process and potentially come in for an
13 amended construction authorization.

14 So there is that requirement as well. If
15 the changes were so significant they changed the
16 criteria for filing a construction --

17 >> JUDGE WARDWELL: But you don't envision
18 anything more than those items that would be updated
19 at the receive and of the update, is that
20 correct? The design would be sufficient enough the
21 construction authorization stage such that it only
22 need to be updated with those types of information.

23 >> MS. BUPP: Yes, but at the
24 construction, the application must include all of
25 the information 63.21 to a sufficient level of

1 detail for NRC to make a finding. You can't put it
2 off.

3 Finally, in addition to the plain
4 language of the regulations and the regulatory
5 history of Part 63, the fact that Part 63 is a
6 risk-informed performance based regulation provides
7 additional support from the NRC staff's position.

8 The --- in the final rule for Part 63 at
9 page -- Federal Register, I think 74, page 74
10 Federal Register, 55732, the Commission discussed
11 about Part 63 is a risk-informed, performance-based
12 regulation. They defined a risk-informed
13 performance based regulation as approach to focus
14 attention on the most important opportunities to
15 establish objective criteria based upon risk for
16 evaluating performance and develop measurable or
17 calculable parameters and to focus on the results as
18 the primary basis for regulatory decisionmaking.

19 >> JUDGE MOORE: You said that was the
20 final rule?

21 >> MS. BUPP: Yes, for Part 63.

22 >> JUDGE MOORE: --Your cite --

23 >> MS. BUPP: I may have mis-spoken.

24 >> JUDGE MOORE: I believe your page
25 number was --

1 >> MS. BUPP: Was incorrect. It is 66
2 Federal Register.

3 >> JUDGE MOORE: So that would have been?

4 >> MS. BUPP: In 2001 and it is page 557.2
5 of 66 Federal Register. I apologize for
6 mis-speaking. I confused 2000 and 2001.

7 And in the preamble background section of
8 the rulemaking the Commission defines Part 63 as
9 risk-informed requirement-based regulation and
10 defines performance-based regulation as one where
11 you focus on the most risk significant activity.

12 This goes to the idea that different
13 activities that are contemplated under the license
14 application will require different levels of detail
15 with regard to the design because we want the most
16 information and the Staff want to focus its review
17 on the most risk significant activities.

18 So since the level of information required
19 is different activities under the license
20 application will vary, then you can't have this sort
21 of blanket idea that Nevada is proposing where all
22 the information must be final and if it's not final
23 detailed information, it is no good.

24 From the Staff's perspective, you have to
25 look issue by issue and look at each specific

1 component of the design and decide whether the
2 Commission provides support for that one specific
3 topic is sufficient.

4 And it will require hearing if there is an
5 admitted contention on sufficiency design detail.
6 It will require hearings rather than being able to
7 file a motion for summary judgment based on a legal
8 issue but I think the appropriate thing is for there
9 to be a specific hearing on each of the admitted
10 contentions.

11 Unless the Board has further questions,
12 that summarizes the Staff position.

13 >> JUDGE MOORE: Mr. Malsch, do you want
14 a few moments of rebuttal?

15 >> MR. MALSCH: Yes, thank you, just a
16 very brief comment.

17 If the Board wants to rule in our favor on
18 these two contentions, result would be that a FSAR
19 level detain information is required.

20 As I understand from the DOE, they believe
21 that in all or at least, many respects, their
22 application currently meets that requirement. If
23 that is their belief and the Board decides to issue
24 in our favor, there remains a factual issue as to
25 whether in fact, various components, a final level

1 design information is or is not provided.

2 So there is the possibility of a hearing
3 but that does not preclude to resolve this legal
4 issue on legal grounds.

5 >> JUDGE MOORE: You have specific
6 contentions where you claim the information is
7 inadequate?

8 >> MR. MALSCH: That is correct. So if we
9 were not to prevail on the these particular
10 contention, those contentions would remain as issues
11 for hearing controversy.

12 >> JUDGE WARDWELL: Could you reiterate
13 what your definition of final design is?

14 >> MR. MALSCH: The level of design
15 information typically found in a final safety
16 analysis report at the operating license stage under
17 Part 50 or combined license application under Part
18 52.

19 >> JUDGE WARDWELL: But you admit it was a
20 70 percent design?

21 >> MR. MALSCH: We are talking about in
22 general terms a level design detail associated
23 with 70 percent inclusion design.

24 >> So why does that not get us back
25 because that is kind of a type of thing. What is

1 70 percent? Does that mean the whole design, or and
2 the fact there is a phrase, final or preliminary is
3 not used in 73, where is this all getting us.

4 I'm back to Judge Ryerson's comment
5 earlier about it.

6 Why don't we just jump to the issue of
7 importance and that's the individuals that you feel
8 is a sufficiency of design and be done with this.

9 >> MR. MALSCH: We address that one.
10 First of all, you're right, we can't look at the
11 application as a whole and resolve this question as
12 a factual matter depending upon whether it's
13 70 percent or 30 percent.

14 You have to look at the particular
15 descriptions of each structure and component, and I
16 would submit that there is a fairly well understood
17 collection of knowledge and criteria that would
18 enable one to decide whether a description one sees
19 for a particular structure component is preliminary
20 or final.

21 And I can offer you some examples of what
22 an application looked like as it progresses from the
23 preliminary design stage to the final design stage.

24 People recognize how these things develop.

25 >> JUDGE WARDWELL: Just using your

1 definition of 70 percent there could be some
2 components, at 20 percent and a whole plethora of
3 others that averages out to 70 percent final design,
4 does not mean every component has to be as
5 70 percent and the fact that you agree that there's
6 no words in here that say specifically final design
7 must be submitted in Part 63.

8 >> MR. MALSCH: I agree, it does not say
9 final design but the structure of the license
10 process and history suggest that what they had in
11 mind was the final level of design information.

12 But I do agree that whether or not a
13 particular level of information is final or
14 preliminary, can't be decided on some overall
15 70 percent 30 percent basis.

16 You have to look at each structure system
17 component and see whether it looks like what one
18 signs in a FSAR.

19 >> JUDGE WARDWELL: And aren't we doing
20 that to those we have submit-to us and on a factual
21 basis.

22 >> MR. MALSCH: You could do that.

23 >> JUDGE WARDWELL: We admitted contentions
24 what you deem is appropriate for pursuing further
25 on the basis.

1 >> MR. MALSCH: My only point would be
2 that this is a general contention. Those are
3 specific contentions. If one were to resolve this
4 contention in our favor, we would like at those
5 other contentions already knowing that the general
6 contemplation of regulation was that a final level
7 of design information should be provided that would
8 very much help the litigation although it would not
9 eliminate them completely.

10 >> JUDGE MOORE: Thank you Mr. Malsch.
11 Would you like to address Issue 7.?

12 >> MR. MALSCH: Issue 7 addresses --
13 relates to Nevada's Safety 149 which addresses the
14 possibility that the circumstances of the as-built
15 repository waste might deviate from what was
16 authorized because of human error.

17 We argued in our opening brief that such
18 errors enough be screened in or screened out using
19 the same frequency and consequence screening
20 criteria.

21 >> JUDGE WARDWELL: Sorry to interrupt you
22 and I don't want to look up my notes. I have a
23 legal question in my notes as being DOE rely on QA
24 program procedures to exclude consideration of the
25 TSPA.

1 >> MR. MALSCH: Yes, that's what comes up.
2 That is what the legal question is.

3 We argue that they should be screened out
4 applying the same consequence or frequency criteria
5 applied to other FEPs. We believe that DOE has
6 screened these FEPs out based upon regulation or
7 based upon the legal interpretation.

8 As things now stand, I don't believe
9 either staff or DOE take issue with Nevada's legal
10 argument these things can not be screened out purely
11 on legal ground and we agree with staff and DOE that
12 a QA program may be a factor one may take into
13 account as long as one uses takes into account in
14 applying the usual screening criteria applied to
15 other FEPs.

16 Now, DOE now says that oh no, we did
17 screen these FEPs out on the basis of regulation or
18 legal grounds but basis of low consequence.

19 DOE came to this conclusion and did you go
20 out their millions of LSN documents, a correction to
21 the FEPs screening criteria document that was
22 referenced in the licensing application.

23 This correction didn't change the analysis
24 underlining the FEP evaluation at all, simply
25 changed the ultimate conclusion from screened out on

1 the basis of regulation to screen out on the basis
2 of consequence.

3 >> JUDGE RYERSON: The correction was made
4 before you filed your contention.

5 >> MR. MALSCH: Just before we filed our
6 contention, when DOE pointed that out to us in their
7 Answer to our petition, we said in our reply that we
8 could not forgive them for missing that because it
9 was a very obscure document but if what DOE Intend
10 to do is screen this out on the basis of low
11 consequence, applying the issue FEPs criteria, then,
12 we said and preserve the issue by saying their
13 evaluation is inadequate.

14 I would like to call your attention to
15 exactly what is their screening justification. It
16 is actually in a analysis at page 6-39 to 4-40 of
17 LSN document, DEN 001, 584 824. But all that
18 document says is basically what DOE quoted in its
19 brief. There is nothing more than document than
20 what DOE quoted in its brief. What the brief said
21 we screened it out because we have a compliant QA
22 program and program will lead to proposition that
23 these areas are not expected end of discussion.

24 There is no mention of the criteria in
25 102(j) or 342(a).

1 >> JUDGE RYERSON: This is a part of legal
2 question isn't it? This seems to me, we are
3 bordering on whether sufficiency of how they are
4 screened or not.

5 MR. MALSCH: It could be but let me make
6 the point as they said, if it walks like a duck,
7 quacks like a duck, flies like a duck, it's a duck.
8 Their particular argument sounds like a legal
9 argument and sounds or crashes like a legal
10 argument, really does look like a legal argument.
11 But at DOE's insistence that it was not authority
12 that we think that by claiming that is insufficient
13 in our reply to DOE's answer, we have preserved the
14 issue.

15 >> JUDGE MOORE: In response to Judge
16 Ryerson's question, you said the correction appeared
17 just before you filed your contention.your
18 contentions were filed in late December.

19 I believe that document showed up in the
20 LSN in June.

21 Does that not draw in the question the
22 factual premise of the contention and whether or not
23 it's properly preserved?

24 >> MR. MALSCH: I don't think so. The
25 difficulty is this, that the application says that

1 the document was screened out on the basis of low
2 consequence.

3 You could refer to the document to which
4 the application refers, it says screened out on the
5 basis of regulation which is a legal basis.

6 There are several discussions here sounded
7 like it's being screened out on a legal basis, don't
8 believe the application references the SEARA Report,
9 among the million of LSN documents, there is no
10 reasonable grounds to believe that we should have --
11 we should be assumed to have adequate notice of that
12 particular document since it was not particularly
13 referenced.

14 >> JUDGE RYERSON: If we were to find that
15 the issue before us today as a legal issue is moot,
16 but that there is a viable factual issue, the
17 contention would be interpreted as a factual one.
18 Is that a problem from your standpoint?

19 MR. MALSCH: That is really not a problem
20 from our standpoint.

21 >> JUDGE MOORE: Thank you Mr. Malsch.

22 DOE?

23 >> MR. SILVERMAN: Thank you, Your Honor.
24 Don Silverman for DOE. If I may take one moment to
25 review the citations earlier to give you a citation

1 for earlier that may or may not be helpful to you on
2 the NEI contention. I mentioned there was a SAR
3 section that simply stated additional reactivity
4 controls.

5 >> JUDGE MOORE: This was issue one.

6 >> MR. SILVERMAN: Issue 1 and I want to
7 cite you to the SAR page 1.2-2, 1, 1.2.1-17,
8 1.5.1-4, and 2.2-42.

9 Those sections identify the need for
10 additional reactivity controls in general for a
11 small percentage of the few and an example that is
12 used to achieve that objectivity so you have those
13 cites to look at your leisure.

14 With respect to this particular issue, the
15 issue is the legal issue is it may rely on the
16 quality assurance program as a basis for excluding
17 from a detailed consideration in the TSPA, potential
18 deviations from the design or errors and waste
19 replacement.

20 Nevada's position is that such errors must
21 be screened out only on the basis of frequency or
22 consequence criteria that apply under FEPs.

23 We agree with that.

24 We -- Nevada however, characterizes our
25 argument as a argument based purely on regulation,

1 that we simply took the assumption that we have a QA
2 program, therefore we can rely on it and screen out
3 the FEP. That is not what we did.

4 We used the QA program along with design
5 considerations and other factors and analysis we
6 performed to -- in application determining
7 probability of consequence in this and others, and
8 then, made the screening decision.

9 And Mr. Malsch points out that there is
10 really no discussion about how we apply those
11 criteria, the QA Program, that we just jump to a
12 conclusion that we have one, therefore, we are
13 entitled to exclude these sorts of things. And that
14 it really is dangerous for sheep's clothing but in
15 fact, as you pointed out, that I did not have the
16 exact internal documentation so probably I did
17 appear in the LSN some time in near 09 -- but I
18 point out that the NRC staff in addition to the FEP
19 addresses this issue, specifically errors and waste
20 replacement which was the one that was corrected to
21 say from regulation to consequences. In addition to
22 that, the NRC staff asked a specific RAI and they
23 were questioning our analysis here. And it is
24 already RAI number 117 and I can give you the LSN
25 number, DEN, 001, 611, 309.

1 And the question that we are asked is,
2 provide a technical basis for exclusion of this
3 particular FEP that's consistent with the screening
4 decision of low consequence.

5 This information is needed to verify
6 compliance with 63.114 (e) and (f) and they go on 1,
7 2, 3, 4, 5, 6 pages to discuss our rationale. If it
8 was merely the fact that we were saying we had a QA
9 program, we can exclude. I don't think we would
10 have 6 pages. I'm not going to read that to you, I
11 think it is worth reading.

12 And I think we would suggest that you do
13 that.

14 We apply the consequence criteria and we
15 are entitled to apply those criteria just like we
16 are making screening decisions, just like we are
17 entitled to apply other elements and design, quality
18 assurance program. The function of quality
19 assurance programs is to have systematic actions to
20 provide adequate confidence that the repository will
21 perform as anticipated.

22 That's cited -- definition in 63.141 and
23 the NRC has historically relied on allowing their
24 quality assurance programs. We did not exclude this
25 on fairly legal grounds.

1 >> JUDGE WARDWELL: I take it DOE considers
2 the issue framed to us to be moot, is that correct?
3 You see the legal issue as moot because it doesn't
4 comport with the facts as you understand them?

5 >> MR. SILVERMAN: Yes, Your Honor.

6 >> JUDGE WARDWELL: Now, what is DOE's
7 position on whether there is a remaining fact
8 question arising from this contention or some
9 related contention? Is this a fact question or do
10 you feel -- or is it your position that since the
11 legal issue is moot, the matter is over?

12 >>MR. SILVERMAN: I would have to recheck
13 the contention and I apologize, I don't have it in
14 this package here but if you conclude that the
15 Quality Assurance Program is an appropriate element
16 in the consideration of including the FEPs and we
17 would look -- you would need to look at the
18 contention to see if it alleges in any way that we
19 would improperly apply the Quality Assurance
20 Program. If that is such an element, that would be
21 fact question remaining for litigation.

22 >> JUDGE RYERSON: I think the contention
23 is 149 if I recall it, because of the
24 misunderstanding of -- perhaps the misunderstanding
25 of the factual situation, it may be a legal

1 argument. It is not sufficient in itself that you
2 have a quality assurance program.

3 >> MR. SILVERMAN: That's correct, 149 is
4 designated by Nevada as a legal issue and in that
5 regard, I would have to read again the language is a
6 legal issue and it basically states the actual issue
7 that we may not rely on QA program, it would be
8 moot, it would be no factual issue remaining for
9 litigation.

10 >> JUDGE MOORE: Is it not DOE's position
11 that in screening out a FEP, that DOE may rely
12 exclusively on its QA program?

13 >> MR. SILVERMAN: I would say that there
14 is -- one could conceive of a situation where we
15 perhaps could rely exclusively on our QA program.

16 If in fact, -- if in fact one could
17 explain the controls that are provided by that
18 program and those controls such as procedures,
19 configuration management, inspections, and other
20 verifications, procurement controls and all those
21 sorts of things that make up quality assurance
22 programs, if one were to do an analysis and conclude
23 that reduces the probability below the appropriate
24 probability performance criteria or reduces the
25 consequence, then, that would be appropriate.

1 In this case, I think we did more than
2 that.

3 >> JUDGE WARDWELL: That sounds to me what
4 you just described as a factual evaluation of that.
5 Seems like we are talking the same thing.

6 >> MR. SILVERMAN: That would be a factual
7 evaluation but the legal issue is here, may we rely
8 actually on the QA program as an A basis, not B
9 basis.

10 Mr. Malsch went on the to say that our
11 evaluation is manifesting inadequate. That goes the
12 quality of the analysis. And so, that's really all
13 I have unless you have questions.

14 >> JUDGE MOORE: Thank you.

15 NRC staff?

16 >> MR. GENDELMAN: Adam Gendelman for the
17 NRC staff. I don't think there is too much
18 disagreement on this issue. But, I think just to
19 sort of clarify the direction I think we're going,
20 the Staff's position is that DOE may rely upon its
21 QA program procedures as a basis for its FEPs
22 screening decision because the Commission has not
23 placed restrictions on the kind of information that
24 DOE play submit in support of a FEP's screening
25 position.

1 I think it is important to make a clear
2 distinction between what I will call the
3 justification or reason for FEP's screening which is
4 very much prescribed by Commission regulations.

5 In 63,114(a)5 and 63.322(a) concerning
6 probability of low consequence and excluded by
7 regulation. And the one is also helpful here at
8 2.2-9 acceptance criteria juxtaposed with the
9 technical basis providing in support of that
10 screening decision which is not so restricted.

11 And that is what -- it is the Staff's and
12 DOE's I think understanding of what the QA program
13 is being relied upon for as a technical basis under
14 114(a)5 in support of its low consequence under
15 114(a)5, discussing the language we discussed,
16 changing the outcome of the assessment, hence,
17 justification with reason for which there is a
18 technical basis.

19 In its briefs though, I think this is
20 clarifying Nevada discusses the actual probability
21 of errors and wafted in placement goes to merits of
22 whether DOE's analysis is adequate which is not an
23 issue in this contention. The Staff is considering
24 justification and technical basis provided by
25 Department and we will make a safety finding based

1 upon whether it finds that information adequate.

2 Thus, while the Staff has no position on
3 the adequacy of the technical basis that DOE
4 provided in support the FEPs Quality Assurance
5 Program as a technical basis as the program is the
6 sort of thing on which the Department may rely to
7 possibly satisfy 114(a)5 requirement. And unless
8 Board has any questions, I have nothing further.

9 >> JUDGE MOORE: Thank you. Mr. Malsch,
10 do you have any brief rebuttal?

11 >> MR. MALSCH: Yes, thank you.

12 >> JUDGE MOORE: Thank you Judge Moore.
13 Just a brief comment and that is to refer to the
14 language in our reply to DOE's answer to our
15 petition.

16 This is in our reply, page 654 where we
17 specifically challenge the adequacy of DOE's
18 screening out discussion assuming as DOE said, it
19 was screened out on the basis of consequence, not on
20 the basis of regulation.

21 We said quote, "nothing in that" --
22 referring to the underlying FEPs being done even as
23 it was modified on this errors reports -- "nothing
24 in that qualitative discussion about how great
25 things can be implemented and supports the

1 proposition that errors and repository design and
2 errors in recent places will occur at a frequency of
3 less than one in 10,000 in 10,000 years."

4 And this is the screening criteria. So I
5 think we have clearly preserved this issue as a
6 factual controversy even though there is no longer
7 any dispute regarding the legal criteria.

8 >> JUDGE RYERSON: That applies to Safety
9 149?

10 >> MR. MALSCH: Correct.

11 >> JUDGE WARDWELL: Is there any other
12 contention you would suggest comes to mind?

13 >> MR. MALSCH: This is the only one that
14 comes to mind, yes.

15 >> JUDGE MOORE: Thank you Mr. Malsch.
16 It's now probably a good time to take a brief ten
17 minute recess.

18 We will reconvene at 3:25.

19 (Whereupon, a short break was taken)

20 >> JUDGE MOORE: Please be seated.

21 Mr. Malsch, we will proceed with Issue
22 Number 8.

23 >> MR. MALSCH: Thank you. Issue 8
24 requires that we define the issue carefully. We
25 believe this issue is all about defense indepth.

1 There is no issue here about whether DOE
2 will renege on its promise to dip shields and no
3 issue about whether the absolutely sets of dip
4 shields is the result of a FEP.

5 Instead, the fundamental issues here are
6 whether there is any requirement in Part 63 that the
7 design of repository reflect the Tennessee in depth
8 principle, what fence indepth means and in looking
9 beat at DOE's completed design in its license
10 application, how it should be determined.

11 More specifically, with reference to the
12 drip shield, should DOE be required to postulate the
13 absence of failure of all dip shields and assess the
14 results to ascertain their contribution to overall
15 performance and there by, determine whether the
16 exhibits, offense in depth, we think such an
17 evaluation is required and the staff argued that no
18 such evaluation is required.

19 Before though I get to Part 63, I should
20 address the arguments of Staff and DOE about the
21 relevance of the DC Circuit decision and in that
22 case, the state of Nevada argued that the multiple
23 barrier requirement in the statute required that
24 Part 63 look like Part 660 in that it was required
25 under the statute for NRC to describe in Part 63, in

1 advance of their filing a license application,
2 minimum performance requirement for individual
3 barriers. The Court concluded that the NRC had
4 discretion to interpret the statute differently. We
5 also argue that it was arbitrary and capricious for
6 the Petitioner to abandon in Part 60 when it
7 promulgated Part 63 and the Court agreed with the
8 NRC that it's departure from Part 62 -- departure
9 from Part 60 and promulgated Part 63 was neither
10 arbitrary or capricious.

11 But there was no issue in that case
12 addressed as to whether any particular DOE design
13 and actual license application complied with the
14 multiple barrier requirement.

15 Or how defense indepth completed design
16 concept should be evaluated and those are the issues
17 here. So we don't see this case as relevant at all
18 for this discussion.

19 Instead, we see this discussion is
20 controlled by a careful analysis in Part 63 and
21 doing so, we take Part 63 as the Commission
22 promulgated it, not as the Commission would have
23 wished it to be when it argued the dba case.

24 We will take Part 63 as given and look at
25 it based upon its rule language and its regulatory

1 history.

2 The most important discussion of multiple
3 barriers in 63.102(h). In fact the title of this
4 particular subsection is multiple barriers and
5 that's what this subsection is all about.

6 It's a rather long and wordy subsection
7 but does contain a number of important
8 interpretative nuggets, explain that is multiple
9 barriers work in combination with each other to
10 enhance resilience of repository design. And it
11 also further explains why the resilience in the
12 design is important.

13 102(h) says it is to compensate for
14 uncertainty in inherit to the performance of natural
15 and engineered barriers, especially engineer
16 barriers.

17 The Physicist Boris once said that
18 predictions are always difficult especially when
19 they are about the future. This is about an
20 especially difficult one about the future up to a
21 million years and so many uncertainties are rampant.

22 So under 63.102(h), multiple barriers is
23 designed -- the local barrier concept is intended to
24 enhance resilience and the reason why it enhances
25 resiliency, it is important is because it

1 compensates for uncertainty. And you then know more
2 about the multiple barrier requirement from the
3 regulatory history of Part 63 and here, the most
4 important parts in 63 Federal Register, 55758 and
5 5759.

6 In response to a specific question by
7 a commentator, how the Multiple Barrier Provision in
8 Part 63 reflects the philosophy of defense indepth
9 at the repository system should reflect the
10 philosophy of defense indepth.

11 That is not surprising and NRC practice,
12 multiple barriers and defense indepth are often used
13 as interchangeable terms. The Commission further
14 said that it's local barrier requirement could
15 result in repository that is quote, more talented or
16 unanticipated failures. So resilience, the term
17 102(h) in Part 63 and defense indepth, the term
18 discussed particularly in regulatory history must be
19 interchangeable terms.

20 They both reflect the NRC implementation
21 of the multiple barrier and information and the
22 ability to compensate for uncertainties not
23 anticipated and therefore not evaluated.

24 So the question then is what is defense
25 indepth? The Commission said its regulations

1 included its philosophy of defense in depth? What
2 does it mean? We know it was designed to make
3 repositories more tolerant of unanticipated
4 failures.

5 But we also learned from the regulatory
6 history and this is at 66 Federal Register, 55758
7 that in accordance with defense indepth, a design
8 must not be wholly dependent on a single barrier.

9 ACNW, the Commission's advisory committee
10 working on high level waste matters when Part 63 was
11 in development also understood from its reading of
12 the regulations and its discussion of NRC staff that
13 the result of the regulation and the application of
14 the defense in concept. The defense indepth concert
15 would be that the posture of rock depends on single
16 barrier.

17 So from these we conclude one, multiple
18 barriers means resilience in design, resilience in
19 design to compensate for unanticipated failures and
20 uncertainties.

21 Resilience is the same as defense indepth
22 and defense indepth means the repository was not
23 beholden upon a single barrier. So the key question
24 then is, well, how is defense indepth supposed to be
25 evaluated.

1 We know from that same regulatory
2 experience, this is again, 66 Federal Register,
3 557589, that defense in depth, that is to say,
4 whether there is undue or whole dependence on a
5 single barrier. The thought on that was it is to be
6 demonstrated quantitatively. The Commission said
7 specifically that the rule requires DOE to quote,
8 the describe quantitatively.

9 The ability to commute information
10 bill tee to contribute to waste isolation in a way
11 that lack of resilience under the unanticipated
12 failures or external challenges. So the demonstrate
13 must before quantitatively. In fact, it said it
14 twice at the same point in the federal register.
15 The Commission explains that in additional
16 quantitative discussion and description of barriers,
17 capability is not required because quantitative
18 evidence of capability of individual barrier does
19 contribute to waste isolation is an integral part of
20 performance assessment.

21 Therefore, I think there is no doubt that
22 defense indepth is a requirement under Part 62. Defense
23 indepth means there should not be whole or undue
24 reliance upon any single barrier, whether there is such
25 undue reliance on a single barrier and evaluates

1 quantitatively, not just qualitatively.

2 So the question is: Does that mean we should
3 postulate the total absence of dip shields.

4 Well, DOE certainly thought that was true
5 when it first determined its concept plan for finalizing
6 this application. DOE's staff at one point thought that
7 this was true. They were talking about something very
8 close to this, postulating the what if analysis.

9 So what happened to defense indepth? I would
10 submit that defense indepth is the preverbal elephant in
11 the room and Staff's and DOE's message is basically,
12 ignore that elephant.

13 But you can't ignore the elephant. It is in
14 Part 63, reinforced by B. We also say that the analysis
15 is not required by the regulation but neither tell us
16 how they propose otherwise to evaluate the defense
17 indepth inherent in Part 63. So if a neutralization
18 analysis is not required, well, then, what, Staff and
19 DOE are completely silent on this subject.

20 So, we say that in sum, defense indepth is
21 part of part of 63 design must reflect the defense
22 indepth concept, the concept was designed to compensate
23 for uncertainties and defense indepth means there can
24 not be undue lines in single barrier. And whether or
25 not there is undue reliance, should be demonstrated

1 quantitatively, as the total system assessment.

2 We have postulated here this should be done by
3 neutralization analysis. DOE once thought that was the
4 way to negotiation. Staff thought something similar
5 would be done before you today and they are silent.

6 So as I say, defense indepth is the elephant
7 in the room and the message for Staff and DOE is ignore
8 that elephant. But you can't.

9 >> JUDGE WARDWELL: When you say that DOE was
10 initially considered these neutralization analysis, was
11 that in reference to your statement that on Page 27
12 where you actually cite a document they submitted, that
13 does what? Does it allege that it has something that
14 was not included in the application? What is that?

15 >> MR. MALSCH: I think what that is a
16 planning document to plan the contents of the license
17 application which DOE expert opined this is what Part 63
18 intended and this is how defense indepth should be
19 evaluated.

20 I don't contend there is a legal requirement
21 but I do contend that it shows what we have in mind is
22 something that DOE also had in mind at least at one
23 time, something that should be done.

24 >> JUDGE WARDWELL: But you state on 27 DOE has
25 already performed one or more drip shield neutralization

1 analysis.

2 MR. MALSCH; Oh, I'm sorry, have performed one
3 more analysis. That is true from documents that are on
4 the LSN. They just were not included in the license
5 application, DOE concede they do that but says they did
6 not find their way into a license application, and they
7 don't explain why.

8 >> JUDGE MOORE: What do those analyses show?

9 >> MR. MALSCH: We believe it shows without
10 the drip shield, NRC performance objectives.

11 Now, there could be some dispute over that and
12 that would be a factual matter.

13 >> JUDGE WARDWELL: And you don't know whether
14 the neutralization of other barriers will achieve the
15 same thing? That gives no relative feeling on whether
16 the system is dependent on drip shields or not?

17 >> MR. MALSCH: I don't know, I don't know the
18 answer to that question.

19 >> JUDGE WARDWELL: What is the difference
20 between what you describe as neutralization analysis and
21 those failure analysis or FEPs screening analysis that
22 DOE claims as proof that they actually have done
23 something similar?

24 >> MR. MALSCH: That is a good question. The
25 purpose of defense indepth is to compensate for

1 unanticipated failures and challenges.

2 By definition, you could anticipate there is a
3 challenge. They should have been considered in the FEPs
4 screening analysis and either screened out or screened
5 in depending on consequences and probabilities.

6 By definition, if you could anticipate defense
7 indepth is designed to compensate for FEPs that you
8 never imagined and therefore, never evaluated.

9 >> JUDGE MOORE: So Nevada's position is that
10 10 CFR 342 -- 63.342 is not an answer to the multiple
11 barrier requirement that is specifically set forth in
12 the regulation?

13 >> MR. MALSCH: Absolutely not. It is a way
14 to evaluate failures and challenges even anticipated but
15 the very purpose of the multiple barrier requirement is
16 to address and compensate for failures and challenges
17 that you could not anticipate.

18 There is a good analogy here. The screening
19 and definition of FEPs, promulgation of FEPs through the
20 performance assessment and the ultimate calculations are
21 somewhat like the probabilistic risk assessment for a
22 facility like a reactor.

23 I believe there was a risk assessment done
24 before the Challenger accident. There was a risk
25 assessment done of some sort before the Apollo accident.

1 I think there was also some sort of risk assessment done
2 before the T0I 2 accident.

3 The problem was and it also came to us that
4 what happened was simply not anticipated and therefore,
5 not evaluated.

6 So the purpose of defense indepth is to handle
7 challenges and failures you could not anticipate and
8 therefore you could not even imagine and including your
9 FEPs screening analysis.

10 >> JUDGE RYERSON: Mr. Malsch, assuming that
11 an analysis showed that the requirements could not be
12 satisfied without the drip shield, I mean, what would
13 that show? The drip shield is one of what, a handful of
14 barriers?

15 How many barriers are there?

16 >> MR. MALSCH: Well, it depends on how you
17 define. DOE sees many barriers.

18 >> JUDGE RYERSON: How many do you see?

19 >> MR. MALSCH: Well, there is the unsaturated
20 zone above the repository; the saturated zone below the
21 repository; the waste package and the drip shield.
22 Those are the basic areas.

23 >> JUDGE MOORE: And when you speak of an
24 engineered barrier in the context of drip shields,
25 you're talking about the entire one thousand --

1 >> MR. MALSCH: The entire system of drip
2 shields.

3 >> JUDGE MOORE: It's a system of drip
4 shields, not the individual shield in an individual
5 cask?

6 >> MR. MALSCH: Correct.

7 And I think right, if you did -- to answer
8 Judge Ryerson's question -- you did the evaluation of
9 any barrier, whether it's natural or engineered, and the
10 result was non-compliance with performance objectives
11 without the barrier; what that tells you is that you
12 better be very, very sure the barriers are going to
13 perform as expected. It is a little bit like my analogy
14 would be a pressure vessel and a reactor. It's a
15 barrier.

16 It so happens that for most accident analysis,
17 if the barriers fail catastrophically, there is no
18 balance system. So there is an example where the
19 barrier does not exist, you flunk Part 50 of the safety
20 regulation.

21 What does that tell you about the pressure
22 vessel? What that tells you, you ought to be really,
23 really sure the pressure vessel will work.

24 >> JUDGE WARDWELL: But in our case here where
25 we have so many -- you broke it into three categories,

1 two natural barriers and one engineered barrier if I
2 might just simply say it that way, and their components
3 within each of those as you say, so it depends on how
4 you count it.

5 But, isn't it just as important to know
6 what the relative contribution is of each barrier
7 because you may be able to take out any one of those
8 barriers and not necessarily meet compliance. But
9 if each one is the same, well, fine, they are still
10 working in concert together to create what you want
11 to create, that is, meeting the performance of the
12 system.

13 And isn't it more important to see whether or
14 not one dominates? Isn't that what we are really trying
15 to do with this is to make sure that -- you're not
16 relying on one for the entire protection of the standard
17 that we are trying to achieve?

18 >> MR. MALSCH: Well, I think that would be an
19 important part of the evaluation. But I still think if
20 you do a neutralization analysis of each of the barriers
21 as I've define them in general and I would say that if
22 the result of that analysis is that in a particular
23 number of cases, the system doesn't comply without the
24 barrier, I think that tells you a lot about that
25 barrier.

1 That tells you that you better be really,
2 really sure that you're right about the assessment of
3 that barrier and in particular, you should look to see
4 whether there are redundancies in the system because we
5 are talking about unanticipated failures and challenges,
6 not failures and challenges that you can anticipate in
7 advance through the selection of FEPs.

8 >> JUDGE WARDWELL: And if that happened with
9 every barrier, then you just need to be sensitive about
10 the whole system, knowing what it is.

11 MR. MALSCH: I think that is a fair comment.

12 >> JUDGE WARDWELL: DOE and I think Staff
13 but I may be misquoting, does bring up the statement
14 that the Commission has emphasized that there is no
15 need to have a performance -- design specification
16 for any one barrier because they are not -- you don't
17 want to focus on any one of them being removed or
18 anything like that, something to those effects.

19 Would you like to comment on what is the
20 difference between what you're suggesting in that
21 particular statement or those particular statements
22 by the Commission that says we are not going to
23 provide design specification characteristics of the
24 individual barriers because we are counting on them
25 acting together?

1 >> MR. MALSCH: I think the history of that
2 particular provision is important.

3 Part 60 had in it in its' provisions,
4 particular as I recall it, quantitative requirements on
5 particular individual barriers that had to be met,
6 regardless of how DOE might otherwise decide to design
7 the repository --

8 >> JUDGE WARDWELL: That's what I call the
9 design spec approach as opposed to performance spec.
10 That's a little heavier.

11 MR. MALSCH: The National Academy in its
12 report criticized that on the basis that that could be a
13 suboptimize design. And the NRC in Part 63 also pointed
14 out that this would inhibit DOE's design flexibility.
15 But those aren't an issue here.

16 We now have a design, DOE has presumably
17 optimized that design. And the question is whether
18 given DOE's design, that design that it has chosen and
19 optimized purposely reflect the defense indepth concept.

20 So I think it is a different idea. The
21 question -- defense indepth concept can possible lead to
22 a less than optimal design, verses an applicant that
23 presumably optimal design take advantage of design
24 flexibility.

25 Then the question is, looking back, is there a

1 defense indepth and if it turns out there is not, the
2 applicant has the flexibility to go back and revise the
3 design.

4 >> JUDGE WARDWELL: So the mere fact that the
5 Commission has declined to provide design specification
6 for each individual barrier does not preempt the need to
7 in your opinion, address what --how the system would
8 behave if any one barrier didn't function as
9 anticipated?

10 >> MR. MALSCH: That's correct because the
11 Commission after abandoning the Part 60 approach still
12 said that defense indepth would be part of the
13 repository design. So it's still there.

14 >> JUDGE MOORE: Mr. Malsch, you pointed to
15 the 2001 rule statement of considerations. You were
16 focusing on Section 3.8 entitled Multiple Barriers and
17 Defense Indepth.

18 And as part of 3.8 before you get to 3.9, it
19 poses a second question. All of the things you pointed
20 out and there's a handful of others where they use the
21 words quantitatively analysis, is quantitative or
22 qualitative assessment. And then, they go on and point
23 out, they join the sections-- point out that there is no
24 requirement for quantitative, merely a qualitative
25 assessment will be sufficient.

1 How do you reconcile what appears to me to be
2 quite contradictory in the legislative history with
3 regard to multiple barriers defense indepth?

4 >> MR. MALSCH: Well, the Commission said here
5 that, if you read it carefully, I think, I would submit
6 it says it saw no need for additional quantitative
7 evaluation. It says a qualitative evaluation might do
8 and gave a number of reasons. But one of them was that
9 the quantitative evaluation that had already been done
10 as a part of the total system control assessment.

11 So the apparent view of the Commission is that
12 the evaluation of the defense indepth and whether the
13 defense indepth concept is satisfied would be part of
14 the total system performance assessment itself. And
15 beside, it has to be so that this would be evaluated
16 quantitatively. I don't see how you could evaluate it
17 qualitative because you are looking at contributions to
18 overall system performance and the ultimate result of
19 the performance is a release of doses calculated.

20 >> JUDGE MOORE: Let me just clear up one
21 thing I may have misunderstood you. I believe you
22 pointed to four barrier systems, one of which was the
23 waste package and separate from that are the drip
24 shields.

25 >> MR. MALSCH: That's correct.

1 Waste package is one of the -- the drip
2 shields are this elaborate accumulation of I think
3 11,000 of them placed over the waste packages to protect
4 the waste packages from dripping and rock falling and
5 the like.

6 >> JUDGE WARDWELL: as you say, there is more
7 that that too, there is a foundation and several little
8 components of the engineering barriers.

9 MR. MALSCH: Correct, and you can get into
10 difficult questions about how finely you define barriers
11 for this purpose. But I would suggest we just use a
12 common sense approach here and see what comes out of the
13 evaluation.

14 I think what's missing here as I said is from
15 the standpoint of DOE and Staff, defense indepth is the
16 elephant in the room. They have not proposed to you how
17 they propose to actually deal with the subject and in
18 fact, DOE says there is no defense indepth requirement
19 and they deny any obligation to do any kind of
20 quantitative evaluation of this issue whatsoever.

21 >> JUDGE MOORE: Well, they just merely say
22 342 is the only requirement.

23 >> MR. MALSCH: Right and that is clearly
24 incorrect.

25 >> JUDGE RYERSON: 113 a through C say the

1 engineering barriers should be working in combination
2 with natural barriers. Do you know of any way to show
3 that is taken playing beside something like
4 neutralization analysis?

5 >> MR. MALSCH: I don't know and I would say
6 frankly if the Board decides that we are correct about
7 defense indepth, that it means it should not be undue
8 reliance in any single barrier and that the presence or
9 absence of undue reliance must be demonstrated
10 quantitatively.

11 If in response to that, the DOE were to amend
12 its application and propose some other method beside
13 neutralization analysis, I think we would have a
14 technical dispute, but they have not done that.

15 Their application is silent on that subject.

16 Thank you.

17 Oh, I would like to reserve a few minute for
18 rebuttal, please.

19 >> JUDGE MOORE: DOE?

20 >> MR. SILVERMAN: Don Silverman for the
21 Department of Energy. The state of Nevada's basic
22 position is that the Department is required to perform
23 what they refer to as neutralization analysis,
24 essentially taking away all of the drip shields, failure
25 of all of the drip shields.

1 >> JUDGE WARDWELL: Is it a failure or is it
2 just what you said initially, it is a taking away of
3 those to determine the relative impact?

4 >> MR. SILVERMAN: The legal issue evaluation
5 is to evaluate the drip shields first which I interpret
6 it to mean, we make the conscious decision not to put
7 them in or we cannot out them but Nevada has made clear
8 that they are not alleging that any further.

9 >> JUDGE WARDWELL: How would you demonstrate
10 compliance with 113(a) through (c) that the engineering
11 barrier be working in combination with natural barriers
12 if you don't do something like that?

13 How have you done that in your license
14 application?

15 >> MR. SILVERMAN: We have done that in our
16 license application through a discussion of all the
17 barriers and their capabilities and providing a
18 description of their capability and then, taking
19 together all the barriers together performing analysis
20 to determine whether the dose performance objectives
21 there were met, et cetera, never's position is a
22 neutralization analysis, the only basis for that would
23 be they are looking to see if there is basically, they
24 are suggesting there must be a quantitative requirement
25 for each individual barrier with respect to the ultimate

1 dose standard.

2 Take it away and see how that affects the
3 ultimate dose.

4 >> JUDGE WARDWELL: How would you require --
5 not require but the basis for the regulation in the
6 statement consideration in the 2009 revision when the
7 Commission affirmed that the emphasis should not be
8 isolated performance of individual barriers but rather
9 ensuring that repository system is not wholly dependent
10 upon a single barrier.

11 How are you going to show any indication of
12 whether or not the barrier system is dependent upon one
13 single barrier without taking it away and seeing what
14 the reaction is? Not that that's going to occur but
15 that's how -- that's one way to assess it.

16 Give me confidence that you have done a
17 similar thing in your answer.

18 >> MR. SILVERMAN: It may be one way to assess
19 it and I would probably want to talk to her and see
20 about the technical answer. But the legal answer is
21 there is nothing in these regulations or in the
22 statements of considerations that requires this type of
23 a specific analysis taking away a particular -- in this
24 case, it is a portion of a barrier.

25 We think the upper natural barrier, the

1 engineered barrier system which include the drip
2 shields, the waste package and other elements and then
3 the lower natural barrier.

4 There is nothing in the regulations. And you
5 won't find that in the general analysis and you won't
6 find that in the general concepts of defense indepth
7 that requires that sort of thing.

8 If the Commission had wanted that kind of
9 analysis done, I think they would have specified it.

10 >> JUDGE WARDWELL: Why haven't they, in what
11 they require? Where have you demonstrated that you have
12 a defense indepth?

13 >> MR. SILVERMAN: We have demonstrated
14 defense indepth by describing the capability of the
15 individual barriers, and then, describing the barriers
16 and their function, describing their capability,
17 describing how they contribute to waste isolation.

18 Let me speak to that if I can. And then
19 ultimately, doing a dose analysis to see how far below
20 we are the performance objectives.

21 Nevada -- and I think Judge Moore have
22 probably pointed two pages of the Federal Register
23 notice that I admit are a little bit complex to read but
24 important. They are the ones you cited before, 66
25 Federal Register, 55758.

1 >> JUDGE WARDWELL: Could you bear with me
2 while you get there then? Is there a page number.

3 >> MR. SILVERMAN: Yes. 66 Fed Reg, 557 a 58,
4 55759. In Nevada's brief in particular, they focus on
5 one sentence one phrase at the bottom of 5575 A.

6 If you look at the very bottom, right handle
7 corner, says the proposed rule would have required
8 describe a description quantitatively -- describe
9 quantitatively each barriers' ability to contribute to
10 waste isolation.

11 Let me explain what we think that means and
12 what we have done. That does not mean that and it
13 cannot mean if you read many, many quotes of these two
14 pages as I'm prepared to read to you if you want but I
15 think you should read them. That does not mean that you
16 have to quantitatively, determine whether for example,
17 the removal of the drip shields would produce a dose in
18 excess of the performance requirement.

19 What it does mean is you need a
20 quantitative discussion of that particular barrier
21 or component of the barrier. And to give you an
22 example, we do that throughout the application.

23 I would like to use the upper natural barrier
24 as an example and what we do in the application,
25 quantitatively is provide the -- we quantify the

1 fraction of water that enters the system, as
2 precipitation and eventually makes its way into the
3 repository.

4 So we provide a fraction of the water that
5 enters into the system. That is a quantitative analysis
6 of intermediate measure, if you will. We do that with
7 other barriers as well.

8 So we provide quantitatively analysis of
9 barriers of I think even components of barriers. But
10 what Nevada is arguing for is not that.

11 What Nevada is arguing for is take these away
12 and see what the impact is on the ultimate dose.

13 And that is essentially imposing a
14 quantitative requirement on individual barriers to
15 demonstrate their contribution to the ultimate dose
16 standard.

17 If you read these two pages --

18 >> JUDGE WARDWELL: Why would you not want
19 that? That's what the Commission was asking for when it
20 said we want to make sure it is not dependent upon one
21 barrier --let me finish my question.

22 Wouldn't you and DOE want to know whether or
23 not the drip shields are contributing 99 percent of the
24 protection of that and all the other is just
25 miscellaneous noise that yeah, we got an upper natural

1 barrier and yeah, we see the relative amount of water
2 that comes through but in fact if that natural barrier
3 does not work, it does not matter because we got the
4 drip shields. If the drip shields don't work and we
5 lose 99 percent of the protection, isn't that what the
6 Commission wants the applicant to assess so that
7 considerations can be given for either redundancies or
8 higher QA standards for getting that in place, yada,
9 yada, yada, all the other actions that you want. That's
10 common engineering practice.

11 >> MR. SILVERMAN: My understanding is that is
12 not what the Commission want. And based upon --

13 >> JUDGE WARDWELL: Where have you shown the
14 barrier is not wholly dependent on a single barrier?

15 >> MR. SILVERMAN: For meeting the performance
16 objectives? To the best of my knowledge and again, I
17 will find out, make a correction if I'm wrong, we have
18 not done that but we have relied on the system of
19 multiple barriers to demonstrate compliance with the
20 performance objectives.

21 And if you look at these two pages
22 carefully, we got this one sentence, which I have
23 explained how we applied in the context of multiple
24 places, where the Commission says, and they asked
25 the question should NRC set a quantitative limit

1 that is a subsystem requirement for specific
2 barriers that make up the repository system? And
3 they go on to say the final rule adopts a single
4 quantitative performance goal for individual
5 protection and separate limits to groundwater
6 protection. Final rule does not place
7 quantitatively limits on individual barriers. They
8 go on and on.

9 >> JUDGE WARDWELL: Isn't that merely though a
10 statement that we got performance specs here and not
11 design specs in regard to barriers? It has nothing do
12 with neutralization analysis.

13 >> MR. SILVERMAN: It is a statement we have
14 performance specs for the overall system, not for
15 individual barriers.

16 >> JUDGE WARDWELL: Correct, but that is a
17 separate issue from whether or not you need to
18 evaluate what is the relative importance of each
19 barrier so we can adjust our whole design and
20 construction program to address any sensitivity
21 associated with the magnitude of the protection
22 provided by any one barrier.

23 >> MR. SILVERMAN: Again, I would have to
24 verify but I strongly suspect that there was sensitivity
25 analysis done on the TSPA and on the analysis in the

1 TSPA to various parameters and assumptions to test those
2 sorts of things. I don't know the details of that. I
3 really have to follow up on that.

4 >> JUDGE MOORE: But isn't the sensitivity
5 analysis essentially a neutralization analysis if
6 you're applying it to the drip shields?

7 >> MR. SILVERMAN: No, it does not imply that
8 at all. Neutralization to me is destruction, voiding
9 eliminating. That is the drip shields and that is what
10 they are asking for here, to take away --

11 >> JUDGE MOORE: Let's back up just a minute
12 so that I'm clear.

13 >> MR. SILVERMAN: Sure, Your Honor.

14 >> JUDGE MOORE: 63.113 requires multiple
15 barriers.

16 >> MR. SILVERMAN: Yes.

17 >> JUDGE MOORE: And it's clear from the
18 history of this regulation as well as the philosophy of
19 the Commission over time that defense indepth and
20 multiple barriers are hand mates.

21 That being the case, why is 63.342 the only
22 test of the multiple barrier system?

23 >> MR. SILVERMAN: Well, in the case of this
24 legal issue, the question is raised about whether we
25 must consider the failure of all the drip shields.

1 In my view --

2 >> JUDGE WARDWELL: The absence of all
3 barriers, because that implies and I believe that's the
4 --

5 >> MR. SILVERMAN: No, absence or failure,
6 Your Honor.

7 >> JUDGE WARDWELL: Because one implies that
8 things are actually failing.

9 They are not postulating that all these drip
10 shields are going to fail, are they?

11 >> MR. SILVERMAN: Yes, I think they are.

12 >> JUDGE MOORE: Before we pass on to another
13 matter, you in your briefs note that DOE did do an
14 analysis under 342 with respect to a certain --

15 >> MR. SILVERMAN: Yes.

16 >> JUDGE MOORE: There was a second one.

17 >> MR. SILVERMAN: Yes, it was. I believe
18 there were actually three. We postulated the failure
19 of all of the drip shields in at least three
20 situations, certain seismic --

21 >> JUDGE MOORE: And you used that word "all"
22 in your brief but then when I tried to parse it, it
23 appears to me that not all 11,000 of the drip shields
24 were removed in -- any of those were calculated as
25 failing in any one of those analysis; is that not

1 correct?

2 >> MR. SILVERMAN: My understanding was that
3 there were certain scenarios where we failed all of the
4 drip shields, certain seismic scenarios, certain igneous
5 scenarios and certain corrosion scenarios. And we did
6 it because --

7 >> JUDGE MOORE: What did those analysis
8 show?

9 >> MR. SILVERMAN: I would have to ask my
10 technical people that but that goes back to 63.342
11 question and that is that we did that because we applied
12 the probability and consequence criteria of a seismic
13 event or igneous event with general corrosion and we
14 concluded that those scenarios met the criteria for --
15 it was possible, probable, or the consequence limits and
16 therefore, included those as FEPs and analyzed those
17 situations. And our view is that's our obligation to do
18 it as a FEP if consequence probability criteria drive you
19 there.

20 >> JUDGE MOORE: The igneous event, did that
21 not deal with a small percentage because of the
22 footprint of the repository and --

23 >> JUDGE WARDWELL: Did it not only evaluate
24 that zone and that drip area where you anticipate
25 volcanism activity --

1 >> MR. SILVERMAN: With a 30 sound pause, I
2 can ask. I don't know the answer to the question.

3 >> JUDGE MOORE: I believe we will come back
4 to it.

5 I think I interrupted you.

6 >> MR. SILVERMAN: I'm not sure that you did.
7 I've been given a signal like this, (indicating) it was
8 all and if that's wrong, I will correct that on the
9 break.

10 >> JUDGE RYERSON: But I'm a little confused.
11 Would the total failure of the drip shields be different
12 from the absence of drip shields for purposes of
13 analysis, or is it the same thing?

14 >> MR. SILVERMAN: I imagine it's the same
15 thing. They are not there.

16 >> JUDGE WARDWELL: Except in a philosophical
17 discussion of whether or not Nevada is hypothesizing
18 that all the drip shields will fail.

19 I think what they are trying do is to say
20 let's evaluate the relative potential and influence of
21 each barrier. Is that a fair assessment, Mr. Silverman?

22 >> MR. SILVERMAN: On the ultimate dose, I
23 think that's what they are trying to say, yes.

24 >> JUDGE WARDWELL: And why does a FEP
25 screening analysis or how does a FEP screening analysis

1 achieve the evaluation of whether or not you are
2 achieving defense indepth? It seems to me that
3 provides a pretty good argument--

4 >> MR. SILVERMAN: They would include FEPs for
5 the seismic and igneous and general corrosion so
6 therefore, an analysis was done.

7 >> JUDGE WARDWELL: My question is why does
8 that analysis which is an anticipated failure based on a
9 specific type of activity, have anything to do with
10 evaluating defense indepth which is according to Nevada,
11 in a protection mechanism against unanticipated
12 failures? It seems like they were pretty persuasive
13 that there were two separates analyses and that's where
14 we get back to Judge Ryerson's comment about the
15 difference between the failure and a absence.

16 >> MR. SILVERMAN: I guess all I can say about
17 the defense indepth, we fully recognize the importance
18 of the concept, the centrality in many forms.

19 We have applied the defense indepth
20 concepts. Nevada's position nearly takes the
21 general principle of defense indepth and draws --
22 that is something, a requirement that we need to
23 build into the design of the facility and extends
24 that without any reference to the regulatory
25 language and inconsistent with these two pages that

1 are critical of the statements of consideration to
2 say that we have a legal obligation to assume away
3 those drip shields.

4 And I don't believe that follows from the
5 regulation. They have not pointed to anything
6 specific in the regulation that supports that
7 position and the statements of consideration do not
8 support that decision.

9 >> JUDGE RYERSON: Not to belabor my point, if
10 you will help me to understand Mr. Silverman, in some
11 scenarios as required by 342, you have postulated the
12 total failure of the drip shields. And I take it in
13 those scenarios, the dose limits are still achieved?

14 >> MR. SILVERMAN: Yes.

15 >> JUDGE RYERSON: Then I'm somewhat confused.
16 If you can postulate the total failure of all drip
17 shields under any scenario, then, and still achieve dose
18 limits, then why -- I'm not sure what the difference is
19 in postulating the absence of drip shields under
20 some other --

21 MR. SILVERMAN: It may end up being more of an
22 academic exercise but our position was that if the FEPs
23 screening criteria drove you to a conclusion that you
24 could have a failure of all the drip shields, then we
25 had a legal obligation to analyze that and look at the

1 ultimate effect on dose. But in the absence of that,
2 there is no requirement based upon multiple barriers and
3 defense indepth to do any further analysis.

4 >> JUDGE MOORE: But if you've already done
5 it three times, it is an academic question, is it
6 not?

7 >> MR. SILVERMAN: At least to that extent,
8 yes, sir.

9 >> JUDGE MOORE: To go to Judge Ryerson's
10 question, to that extent, removal is removal rather it's
11 seismic, igneous, or corrosion, or for that matter,
12 Tinker Bell.

13 >> MR. SILVERMAN: I guess your point is well
14 taken. If they are gone, they are gone.

15 >> JUDGE WARDWELL: Well, let me ask this then
16 to rain on some parades here: If in fact one barrier
17 accounted for 99 percent of all the protection, would
18 you as DOE not want to know that?

19 >>MR. SILVERMAN: I imagine we would.

20 >> JUDGE WARDWELL: How have you done that?

21 >> MR. SILVERMAN: Well, I have to talk to our
22 technical people about how we did the TSPA.

23 >> JUDGE MOORE: And while you're shorting
24 that, add this to the list; you said there were three
25 barriers, two natural, and one engineered barrier

1 system. And the barrier system, I then take it
2 incorporates both the waste package and accouchements as
3 well as the drip shields.

4 Those are not separate entities.

5 >> MR. SILVERMAN: They are separate but they
6 are all part of the engineered barrier system.

7 >> JUDGE MOORE: Single system or multiple
8 system?

9 >> MR. SILVERMAN: My understanding is and
10 DOE's interpretation is that we argue there are three
11 barriers and they multiple components to them, the upper
12 natural barrier, the engineered barrier system which has
13 multiple components and the lower natural barrier.

14 >> JUDGE MOORE: So there's one engineered and
15 two natural barriers?

16 >> JUDGE WARDWELL: Systems, correct? There
17 are three systems?

18 >> MR. SILVERMAN: Yes.

19 >> JUDGE WARDWELL: And to refine my question
20 again, would not DOE be interested if one of the
21 components of one of those systems provided the vast
22 majority of the protection, wouldn't it be of
23 engineering interest to you as the applicant?

24 >> MR. SILVERMAN: We will answer your
25 question before we close. I guess I would like to add

1 one other thing and that is that Mr. Malsch indicated --
2 tried to draw a distinction with respect to the NEI
3 case and we think the NEI case is dispositive on this as
4 well. We disagree with this interpretation.

5 The NEI case involved a question about
6 whether the NRC regulations as written violated the
7 Nuclear Waste Policy Act and the particular question
8 was whether there had to be specific limits for
9 specific barriers. And the Court ruled that the NRC
10 regulations satisfied the statute. And now, he is
11 saying, well, the regulations require something
12 different.

13 And they require a quantitative analysis, as
14 regulations as written, of the individual barriers or
15 some subcomponents against the dose standards, the Court
16 ruled against that. They think it is the same issue.

17 We don't see the distinction that it draws.

18 >> JUDGE WARDWELL: Didn't that case focus
19 on whether or not performance specifications are
20 adequate as opposed to design specifications though?

21 >> MR. SILVERMAN: There is a section of the
22 case that deals specifically with what's called the
23 Multiple Barrier Claims.

24 >> JUDGE WARDWELL: In regards to whether or
25 not a performance specification for them was sufficient

1 or whether or not there was a need to come up with a
2 specific design specification.

3 >>MR. SILVERMAN: Well, the argument is stated
4 as follows: This is the Court speaking. Nevada next
5 argues that NRC violated the WPA requirement that a
6 repository incorporate multiple barriers. By failing to
7 include "any specific requirement for any barrier to
8 provide any degree of protection that is substantially
9 independent of the others."

10 They were not providing safety redundancy -- a
11 term Mr. Malsch used today -- by specifying minimum
12 performance standards for each of the multiple barriers
13 Nevada maintains, NRC deprived the multiple barriers
14 requirement of any vitality. We disagree. And they go
15 on to explain the rationale.

16 >> JUDGE MOORE: Thank you, Mr. Silverman.
17 NRC staff.

18 >> MS. BUPP: Magaret Bupp for the NRC staff.

19 >> JUDGE MOORE: How many barriers are there
20 Ms. Mr. Bupp?

21 >> JUDGE RYERSON: This is a quiz. Have you
22 been paying attention. How many components?

23 >> MS. BUPP: As DOE describes it in the
24 application, there are three barriers, two natural
25 barriers, the upper, lower and the one engineered

1 barrier system would actually consist of several
2 components, including the drips themselves as they are
3 carved out of the rock, is my understanding, the drip
4 shields which are at issue here, the waste package, the
5 waste form then there are a couple of other components
6 in the engineered barrier system that are not considered
7 important to waste isolation.

8 I believe it is sort of the -- excuse me,
9 I'm not a technical expert but they are the supports
10 for the waste packages, and a couple of the other
11 sort of components inside that are used to hold in
12 all the other components. Any other questions?

13 >> JUDGE MOORE: You done good.

14 >> MS. BUPP: Okay, thanks. I think the issue
15 here is whether -- it is not whether or not DOE would
16 ever have to consider the failure of all the drip
17 shields. It's whether the regulations require DOE to do
18 so outside of the performance assessment.

19 I think what we have to do first is to look at
20 the language of 10 CFR 63.115 which sets the requirement
21 for multiple barriers and specifically look at Part(c)
22 of that regulation which requires the technical basis
23 for the description of the capabilities of the multiple
24 barriers to be consistent with performance assessment.

25 The question there is, what does consistent

1 performance assessments mean? It means that DOE is
2 required to accurately reflect what could happen based
3 on a reasonable probability. And here the reasonable
4 probability as set by regulation is a chance of 1 to 10
5 minus 8, 1 in 100 million chances.

6 So the question is not -- so DOE must consider
7 all challenges to the barrier system whether it's the
8 natural barrier system, engineered barrier system and
9 how it works together that are within his probability.
10 And even outside of that probability, does not need to
11 be considered. There's nothing in the regulation that
12 requires things outside of that probability to be
13 considered.

14 >> JUDGE MOORE: So it is your position that
15 63.342 constrains 63.113 local barrier requirement?

16 >> MS. BUPP: Yes, Your Honor.

17 >> JUDGE WARDWELL: Under 115(c) as you said,
18 the technical basis for each barrier's capability shall
19 be based on and consistent with the technical basis for
20 performance assessment. You fail to mention that. It
21 goes on to say that used to demonstrate compliance with
22 113(b) and (c). And 113 (b) at least says that the
23 engineered barrier system must be designed so that
24 working in combination with a natural barrier's
25 radiological exposures to a reasonable REMI are within

1 the limits.

2 How does the applicant show that the
3 engineered barriers are working in combination with
4 those without seeing what the relative impact of those
5 are? Would you describe -- another way to ask the same
6 question is, if one of the barriers provided 99 percent
7 of the protection and the other two only one percent,
8 would you consider that to be working in unison with
9 them, or in fact, dominating them, just the opposite.
10 The others aren't needed?

11 >> MS. BUPP: I think what they have to show,
12 they have to show all of the reasonable stresses that
13 the barrier system could be subject to and how the
14 barrier system will respond to those stresses.

15 If there is a reasonable stress whereby one
16 portion of the barrier system would fail, and then, it
17 would not be able to provide assurance for the rest of
18 the barrier system, then, yes, you're right. If one
19 portion of the barrier system is providing 99 percent of
20 protection for one stress situation, then, that is
21 something we would want to know. But you still have to
22 look at it in terms of what are reasonable stresses that
23 could face -- that the repository could face.

24 And the failure of all the drip shields absent
25 something like the igneous event or seismic events, or

1 any other event which is within the 63.342 probability
2 is not something that is required by the regulation.
3 And the Commission specifically considered whether or
4 not they should require an individual barrier by barrier
5 assessment and they did not. They had two opportunities
6 to do so both 2001 and again in 2009 --

7 >> JUDGE WARDWELL: But again, back in regards
8 to evaluating whether to require design specifications
9 in the regulations or whether to require performance
10 specifications; Wasn't that in the context that they
11 were doing that?

12 >> MS. BUPP: It was related to the decision
13 as to whether or not they should require the more
14 specific prescriptive Part 60 design specifications or
15 whether they would move to the more performance-based
16 Part 63 requirement which is what they did.

17 But I think it is also important to look again
18 in the context of when they were making the move from
19 Part 60 to Part 63, the consideration was that if you
20 look in 64 Federal Register on page 8649 --

21 >> JUDGE RYERSON: Bear with us while we get
22 that. That will give you some time too.

23 >> MS. BUPP: And I'm looking specifically at
24 the bottom of the middle column on 8649 of 64 Federal
25 Register.

1 >> JUDGE MOORE: Go on. I won't be able to
2 get that far.

3 >> MS. BUPP: I'm paraphrasing a little bit
4 for time but geologic disposal of high level waste was
5 predicated on the expectation that a portion of the
6 geologic setting applied to a barrier both to water
7 reaching the waste and to dissolve radionuclides
8 migrating away from the repository and thus, contribute
9 to waste isolation.

10 However, and so this sort of points to the
11 Commission considering that being made a barrier is the
12 geologic setting.

13 There is a reason why the waste is being
14 buried under a mountain. However, there are
15 uncertainties with regard to geologic record and
16 performance of the geologic record. Those concerns need
17 to be quantified generally and addressed by use of a
18 multiple barrier system which consist of both the
19 natural setting and an additional engineered barrier
20 system.

21 The Commission wanted to have redundancies to
22 protect against the uncertainties that are implicit in
23 using the geologic setting as the main barrier. And so
24 the engineering barrier system is there to work with the
25 geologic barriers to provide extra confidence and to

1 protect against some uncertainties.

2 It was never designed that -- never considered
3 that either the geologic barrier or the engineering
4 barrier system working on our own would provide
5 100 percent confidence. The idea is that they work
6 together and that if one particular event challenges the
7 engineered barrier system, you have the geologic barrier
8 system there to provide some extra protection.

9 And if there is an event that challenges the
10 engineered -- the geologic barrier system more, that
11 then you would have engineered barriers to provide sort
12 a system of checks and balances. One is designed to be
13 two redundant systems.

14 >> JUDGE WARDWELL: Let me chunk this down a
15 bit. Maybe this will help. It seems to me that your
16 discussion of 342 went back to again a failure analysis
17 in regard to anticipated failures and FEPs that might be
18 screened out from that.

19 If in fact, one of the components of just the
20 engineered barrier system provided 99 percent of the
21 protection -- that the engineered barrier system
22 provided on its own, wouldn't you as a reviewer want to
23 know that so that you could then -- that would influence
24 your evaluation of a number of things including QA
25 programs, everything else associated with that design

1 just by the mere fact that one component of that
2 engineered barrier system provides the bulk of the
3 process? And in fact, that's what the Commission wanted
4 in their statement of considerations of 2009, to assure
5 it was not wholly dependent upon a single barrier.

6 >> MS. BUPP: While that type of information
7 would not necessarily be dispositive, I think you're
8 right it would be useful information for a technical
9 reviewer -- statement.

10 >> JUDGE WARDWELL: And doesn't the statement
11 of consideration ask you to look at that by saying you
12 want to judge whether or not it's wholly dependent and
13 that's reflective I think in the wording of 113 (a)
14 through (c) by saying they have to assure that they are
15 working in combination with each other?

16 >> MS. BUPP: Yes, again, in combination.

17 >> JUDGE WARDWELL: Thank you.

18 >> JUDGE RYERSON: But don't you have
19 sufficient information from the scenarios that were
20 undertaken under 342, igneous, total failure of the
21 drip shields; don't you know at least from that that
22 the drip shields are not 99 percent of the
23 protection? If you can still meet the dose standard
24 with a total failure of the drip shield, it seems to
25 me that it's kind of logical that it's not the whole

1 thing.

2 Obviously, it's not even apparently necessary
3 although that is not a requirement.

4 >> MS. BUPP: I have to caveat the response.
5 The Staff has not completed its technical review of what
6 DOE has submitted, and also, I'm not the technical
7 expert who will be completing the review what DOE has
8 submitted. But I think you're right from a logical
9 standpoint, if in fact DOE has provided sufficient
10 information with regard to scenarios under 342 that has
11 analyzed, then that does give the technical reviewer the
12 information it needs to know that there isn't any one
13 component of the engineered barrier system that is 99
14 percent or 98 percent --

15 >> JUDGE RYERSON: I take it if there were
16 three barriers, you would be very unhappy or concerned
17 if the top barrier, the geologic barrier existed, the
18 middle engineered barrier was made of cardboard and the
19 bottom barrier was geologic and somehow, the TSPA showed
20 that in combination, those barriers met the dose
21 standard. That still would not be I take it an
22 acceptable approach.

23 >> MS. BUPP: The idea of the multiple
24 barrier system is to have three robust barriers. But
25 the idea is not that each individual barrier should

1 be sufficient to provide all of the protection.

2 >> JUDGE RYERSON: I guess my suggestion --
3 maybe the question should go to Nevada more than you
4 but my suggestion is, don't you have enough information
5 to show that that engineered barrier isn't anything like
6 cardboard?

7 MS. BUPP: I think --

8 JUDGE RYERSON: Isn't that enough?

9 MS.BUPP: Honestly, I can't say whether the
10 Staff agrees with that statement or not and again maybe
11 you should ask DOE to confirm this but I think from
12 reading the Department of Energy's briefing and the fact
13 that they submitted a SAR that DOE at least would say
14 they have provided enough information to show that.

15 >> JUDGE MOORE: Thank you Ms. Bupp.

16 Mr. Malsch, you wanted a brief rebuttal.

17 I would like to ask Mr. Silverman one question
18 in between if I may.

19 When I asked about the analysis that DOE had
20 done, one of which was the igneous event and it ended up
21 in the removal of all of the drip shields, I take it you
22 were speaking if I understood you correctly and remember
23 my question correctly, we were talking about a component
24 of the engineered barrier system, not the entire
25 engineered barrier system failure.

1 Would your answer remain the same?

2 >> MR. SILVERMAN: Yes.

3 >> JUDGE MOORE: Mr. Malsch.

4 >> MR. MALSCH: I just wanted to clarify one
5 important point: As DOE informed you, in various
6 maybe two, maybe one FEPs analysis, we don't end up
7 with all the drip shields failing.

8 Let me illustrate something that DOE failed to
9 tell you and take this as an example, corrosion as a
10 process. In DOE's corrosion FEPS analysis, it turns out
11 that in fact, the drip shields fail from a combination
12 of corrosion and rock fall after many tens of thousands
13 of year, maybe 200,000 years. I forget the exact
14 number.

15 So while it is true that they did FEPs
16 evaluations that resulted in the eventual absence of the
17 drip shields, they did not evaluate the failure of
18 behavior of repository without the drip shields from the
19 very beginning. So to take my example, their corrosion
20 FEPs analysis said nothing about the role of the drip
21 shields protecting the public health and safety in the
22 first several hundred thousand years. So it is just not
23 the case that DOE's FEPs evaluation is the same thing as
24 neutralization analysis which we are asking to be done.

25 They are entirely different. And that is even

1 apart from the fact that by its very nature, the FEPs
2 evaluation evaluates events and processes that are
3 anticipated whereas the purposes of defense indepth --
4 the purpose of defense indepth is to deal with issues
5 and processes and events that could not be anticipated
6 and therefore, were not included in the FEPs evaluation.

7 >> JUDGE RYERSON: Do you agree with Ms.
8 Bupp's statement that it is not necessary that say two
9 out of the three barriers be sufficient to meet dose
10 limits?

11 In other words, obviously, they are all
12 three in concert must meet dose limits. Each of
13 them must be to some degree robust and significant
14 but do you agree with Ms. Bupp that you don't have
15 to have for example, achieve ability with two of the
16 three barriers?

17 >> MR. MALSCH: I don't think that the defense
18 indepth concept is that specific. As I said, I just
19 think that if you do want to do a neutralization
20 analysis to know the importance of the particular
21 barrier so you can be really, really sure that they will
22 function as proposed, and they will not be vulnerable to
23 unanticipated failures and challenges.

24 I don't think that necessarily means any one
25 or any combination of barriers must function to comply

1 with the standard but I do think that the defense
2 indepth evaluation gives you important insights that you
3 really need to know before you license the repository.

4 JUDGE MOORE: Thank you Mr. Malsch. Let's
5 move on to Issue 9.

6 >> MR. MALSCH: Issue 9 deals with plans for
7 retrieval of ultimate storage of radioactive waste.

8 The Commission's regulations in Part 63 at of
9 63.21 (c)7 require that the application include a
10 quote, "description" closed quote of plans for retrieval
11 and ultimate storage of radioactive waste.

12 We argue in our opening brief and in our reply
13 brief, that this regulation must be read to require that
14 the retrieval plans exist and both DOE and Staff
15 disagree.

16 First of all, the most natural reading of the
17 regulation is that the plans must already exist because
18 we can't describe plans that don't exist.

19 >> JUDGE MOORE: Mr. Malsch, you can't
20 describe something that's unanticipated as to why you
21 have to retrieve the waste. Would not the plan depend
22 on what the challenge is?

23 >> MR. MALSCH: It could depend on the
24 challenges but you can go pretty far in advance of
25 describing the plan in terms of expected challenges and

1 do the best you can. But we have here in the
2 application nothing even remotely resembling a plan.

3 >> JUDGE WARDWELL: And I guess I don't fully
4 understand why you feel there is a plan needed before
5 you describe it. One technique is to develop a plan is
6 first to scope out the types of things that you're going
7 to put into it and then get into the details of writing
8 it. That's one way to do it, a storybook, if you will.
9 And that's a perfectly acceptable method of doing such a
10 thing.

11 And one could argue that there is no need
12 to spend the time to get into the nitty-gritty
13 details, just crossing T's and dotting the I's.

14 >> MR. MALSCH: I think one could make that
15 argument but is not an argument that the Commission
16 accepted and promulgated in Part 63 because --

17 >> JUDGE WARDWELL: And you will tell us why.

18 >> MR. MALSCH: I'll tell you why. In Part
19 63, the Commission says in the rulemaking, in the
20 Notice of Final Rulemaking at page 55743, the
21 Commission says specifically that retrieval operation
22 would be an unusual event and may be involved in
23 extensive operation and then as such, DOE can't
24 expect that its plans and procedures in this area
25 will receive extensive detailed review by the NRC

1 staff as a part of any construction authorization
2 review.

3 So I think the Commission could not have been
4 clearer. The plans and procedures themselves are not
5 merely descriptions of them reviewed at the construction
6 authorization stage.

7 Obviously, they must exist at least in some
8 fairly complete fashion for them to review in the first
9 place. So I don't disagree, Dr. Wardwell, that the
10 regulations could have been worded differently and could
11 have provided for the description to be available at
12 that stage. But that is apparently not what the
13 Commission contemplated.

14 What is interesting here is that in 63.21,
15 there was reference made to some 14 different kinds of
16 plans and programs.

17 In seven of these, the regulation provides for
18 the application containing description. And another
19 seven, the regulations are clear that the plans and
20 procedures themselves must be available.

21 I can't clearly detect any rhyme or reason
22 behind why in some cases, a description would be
23 sufficient and other places, a plan itself would be
24 necessary.

25 A good example of the Commission's I would say

1 unfortunate use of the word "description" clearly did
2 not mean that is in the quality assurance area. The
3 application says specifically that the application shall
4 include a description of the quality assurance program.

5 But clearly, the Commission is going to be
6 reviewing the quality assurance program itself because
7 it applies during construction. So this is an example
8 where you have a plan that must be reviewed and
9 evaluated prior to the issuance of a construction
10 authorization if the application requirements speak in
11 terms of a description.

12 So I think it is difficult looking at the
13 language of the regulations to resolve this one way or
14 the other. You need to go to the regulatory history and
15 the history indicates clearly the Commission anticipated
16 the Staff review plans for themselves, not just
17 descriptions of plans.

18 >> JUDGE MOORE: Mr. Malsch, do you have
19 procedures before you have plans? Because the
20 legislative regulatory history that you just quoted says
21 that the Commission -- DOE can expect that its plans and
22 procedures will be reviewed at the construction
23 authorization stage.

24 >> MR. MALSCH: I'm honestly not sure the
25 Commission intended this to be any fancy distinction

1 here between plans and procedures in either case and I
2 would say the plans would be include procedures.

3 >> JUDGE WARDWELL: But with that statement
4 then an applicant could submit procedures for retrieval
5 and -- meet what is intended on the statement of
6 consideration, could it not?

7 >> MR. MALSCH: Well, it says plans and
8 procedures is needed to the extent there is any
9 distinction between the two. I'm not sure there is, but
10 that particular excerpt from the regulatory history
11 talks about the Commission reviewing plans and
12 procedures.

13 >> JUDGE WARDWELL: Right but it doesn't say
14 for every item the plan and the procedure needs to be
15 submitted. It means total that some may have plans
16 submitted and others may just have procedures submitted
17 as another way of interpreting that sentence; wouldn't
18 it?

19 >> MR. MALSCH: I'm not sure about that. I
20 would read this to say that both must be evaluated
21 before the construction authorization was issued.

22 >> JUDGE WARDWELL: Again, that sounds pretty
23 redundant if in fact that applied to every submittal
24 need -- I don't know what the right word to use is but
25 that implies to me that some issues will have plans

1 submitted and other issues will have procedures, only
2 the procedures of the plan submitted. And that yes, for
3 the total application, you must review all the plans
4 that are submitted for those that need it and all the
5 procedures for those that don't require the full plans.
6 That is consistent with what 21 seems to jump back and
7 forth between description and plans.

8 >> MR. MALSCH: Well, it does jump back and
9 forth but I think I would read this to say that the
10 plans and procedures must be evaluated in tandem, in
11 concert with each other --

12 >> JUDGE WARDWELL: Just kind of a colloquial,
13 just a phrase.

14 >> MR. MALSCH: I think it's just a phrase.

15 >> JUDGE MOORE: Regardless, Mr. Malsch of
16 which interpretation one were to accept, DOE's and
17 the Staff's or yours, there is no way to reconcile
18 the regulatory language of description of plans and
19 the statement of considerations regulatory history
20 that you cite.

21 They are at polar extremes.

22 The description is the regulatory language,
23 regulatory history is -- essentially says we got to
24 have the plans, not description of plans. You can't
25 reconcile both under either interpretation.

1 >> MR. MALSCH: I think you can reconcile them
2 by saying that the plans must exist but the application
3 need only contain a description of the plans so as to
4 avoid the need to amend the application whenever there
5 was any minor change to the plan themselves.

6 >> JUDGE WARDWELL: Does that resolve the legal
7 question?

8 >> MR. MALSCH: Well, the legal question, we
9 do not intend that the application must include or
10 incorporate by reference plans for retrieval. But what
11 we do say is that they must be available for review as a
12 part of the review of the description.

13 >> JUDGE MOORE: Thank you, Mr. Malsch.

14 DOE?

15 >> MR. SILVERMAN: Thank you. Don Silverman
16 for DOE, Your Honor. Just a couple of points, two or
17 three and then answer any question you have. One of the
18 first things that Mr. Malsch said was and I'm basically
19 quoting "you cannot describe the plans that don't exist
20 as patently incorrect" and excellent -- two excellent
21 examples. And the first one is even better than the
22 second. The first one is decommissioning plans for
23 reactors for other facilities. What happens with almost
24 every application that I have seen, whether it's reactor
25 or fuel cycle facility is when they file the license

1 application, either for possession of use license, or
2 combined license, if it's here in the Richmond facility,
3 there is a requirement to provide a general description
4 of the decommissioning plans. And there is a general
5 description of the basic concepts of how they envision
6 doing the decommissioning at the point in time weighing
7 many years in future when it is required.

8 It is not and there is no requirement and it
9 is clear in the regulations and because it is explicit
10 in the regulations to submit or even have an actual
11 decommissioning plan until the time that you're getting
12 close to license termination, you know what your
13 contamination is, you know where it is, you know what it
14 is, you know what your facility configuration is and the
15 rules are explicit that that is when you develop your
16 actual plan.

17 Seems to me that a retrieval plan in this
18 context is very, very similar to that. You don't know
19 what's going to happen or even if you are going to need
20 to retrieve that waste until many, many years down the
21 line. So the notion that you can't describe the general
22 concept of the plans without the plans being in place
23 themselves is really wrong. In that context, another
24 context is the notion of procedures.

25 Most applications say we will have the

1 following kinds of procedures, types of procedures. But
2 until the application is granted in the -- before the
3 licensee starts operating at least with respect to
4 operating procedures, most of those procedures often are
5 not even written.

6 So I disagree with that.

7 >> JUDGE WARDWELL: Doesn't receive and
8 possession license have to occur fairly shortly after
9 construction begins, if I remember correctly. But
10 correct me if I'm wrong, but isn't there a stage
11 sequence of building needs and then, starting to fill
12 some of the tunnels as the rest of them are being
13 constructed. So in fact, shortly after -- by shortly, I
14 mean less than 100 years, say it takes 100 years to
15 build all those drips, well before those 100 years,
16 i.e., within tens of years if not less than tens of
17 years, waste will be started to be placed in there,
18 correct?

19 >> MR. SILVERMAN: It will.

20 >> JUDGE WARDWELL: And at that point before
21 that happens, one will have to have a retrieval plan in
22 place to know how to pull it out should need be or
23 immediately after.

24 >> MR. SILVERMAN: Our position, Your Honor is
25 the regulations state our obligation is to design the

1 repository and this is a quote, "preserve the option of
2 retrieval." It is not to have the plans specifically
3 -- and we have done that -- the plans specifically for
4 exactly how it will be done. And we have designed the
5 facility to preserve the option of retrieval, both.

6 >> JUDGE WARDWELL: When do you think the
7 retrieval plan needs to be in place?

8 >> MR. SILVERMAN: DOE's position is the
9 retrieval plan needs to be developed at the time that it
10 is determined -- if it is determined that retrieval is
11 necessary, and that's not necessarily the case that it
12 will even be necessary. And then, a specific plan would
13 be prepared on how that would be done.

14 That doesn't mean once again we haven't
15 designed the facility to preserve that option. That's
16 subject to NRC staff review. We have done that.

17 >> JUDGE WARDWELL: So is it needed at the
18 receive and possession stage?

19 >> MR. SILVERMAN: No.

20 >> JUDGE WARDWELL: If it isn't, how does one
21 evaluate that you have preserved the ability to
22 retrieve without that plan, without the detailed plan?

23 >> MR. SILVERMAN: Through the review of the
24 design of the repository. For example, the repository
25 has been designed -- the transportation replacement

1 vehicle, the vehicle that brings the waste into the
2 drifts to able to move backwards along the rails. The
3 rails have been designed to allow movement both ways.

4 The drift walls themselves have metal lining
5 that runs I think somewhere in the area of 278-degrees
6 from the top down the sides of the wall to protect the
7 packages from rock fall which could impede the ability
8 to retrieve that waste.

9 There are probably many, many other design
10 features. Those are just a couple I know of.

11 So we have done that design. Staff is
12 reviewing that design and that is what the regulations
13 require.

14 And also, I would like to point out that the
15 regulations typically specify the contents of the
16 license application. They typically do not specify what
17 needs to be behind that and supporting that license
18 application.

19 Remember, the issue here that Nevada is now
20 arguing is that these plans should be available for
21 review.

22 The NRC -- we were really wandering in a area
23 that has some NRC staff discretion here, we need to
24 review the license application.

25 When you review the license application, if

1 there is additional information not in the license
2 application that they need to satisfy themselves that
3 we preserved the option of retrieval, they can ask
4 request for information which they have done. They can
5 do site visits. They can have licensing meetings. And
6 this is really what, I think, the forum in which these
7 type of issues get resolved.

8 >> JUDGE WARDWELL: I got another quick
9 question.

10 What is your interpretation of what this legal
11 question is that we're trying to address? What is the
12 problem we're trying to solve?

13 >> MR. SILVERMAN: What is the problem?
14 Nevada says we have a legal obligation to have sitting
15 on the shelf at the Department of Energy offices, a
16 plan, a specific plan for the retrieval of the waste, as
17 opposed to designing to ensure to provide some
18 reasonable expectation of assurance that we can
19 retrieve.

20 We do not have that plan. We do not need that
21 plan. We have a lot more than design. We have a number
22 of background documents that get into considerably more
23 detail. We would not call those a plan themselves. So
24 the legal issue is whether we have to have that
25 particular document, a retrieval plan like an emergency

1 plan or a decommissioning plan on the shelf available
2 for staff review. And I can't think off the top of my
3 head of a regulation that specifies that sort of thing.

4 Outside the scope of -- I could be wrong, I
5 can't think of any at the moment -- but outside the
6 scope of what needs to be in the LA. Again, if it's
7 not enough information in the LA, staff will ask for it.

8 If there is not enough information in the LA,
9 the Intervenors can file a contention alleging that our
10 description is inadequate. But those are the forums at
11 which that gets addressed.

12 >> JUDGE WARDWELL: I couldn't pull out an
13 Order of what the parties submitted as their suggested
14 legal issue. But I am reading one here that's
15 highlighted and it sounds similar. I just want to make
16 sure that does jog your memory to make sure I'm clear of
17 what we are addressing here. And this says the legal
18 issue is whether 6321(c)7 and 6331 allow DOE to submit
19 in the license application, a description of its
20 retrieval plans without having a full retrieval plan
21 available for review.

22 Does that sound sufficient?

23 >> MR. SILVERMAN: That's exactly right.

24 >> JUDGE WARDWELL: So in fact it doesn't
25 reference all the regulations, it references just two.

1 parts of it.

2 >> MR. SILVERMAN: That is correct. That is
3 correct and we agreed with the State of Nevada that
4 while the parties were free to argue any regulation in
5 which the argument support of their position, the issue
6 is those two regulations right there.

7 >> JUDGE WARDWELL: Thank you.

8 >> JUDGE MOORE: Thank you Mr. Silverman.
9 Staff?

10 >> MS. BUPP: Magaret Bupp for the NRC staff.
11 The NRC staff agrees that the legal issue is whether 10
12 CFR 63.21 (c)7 and 10 CFR 63.31 allow DOE to submit a
13 description of retrieval plans without having a full
14 plan available for review. The Staff position is that
15 yes, DOE may submit a description of its retrieval plan
16 in the license application. That is what is required by
17 the regulations.

18 >> JUDGE MOORE: What does the Staff Yucca
19 Mountain review plan say with regard to the retrieval
20 plan?

21 >> MS. BUPP: The Yucca Mountain Review Plan
22 encompasses four acceptance criteria. To summarize
23 them, they are first, of all, whether the plans for
24 retrieval packages are based on -- they are to --
25 whether the plans for the retrieval of waste package is

1 based on reasonable schedule, are provided and can be
2 implemented if necessary; whether the proposed retrieval
3 operations comply with requirements of performance
4 objectives, whether the proposed alternative storage and
5 retrieval of radioactive waste is reasonable, and
6 whether a reasonable schedule for potential retrieval
7 operations is provided. Basically the big idea in the
8 Yucca Mountain Review Plan and of the Staff's review is
9 whether DOE's retrieval plan as described is both
10 feasible and reasonable.

11 >> JUDGE MOORE: How does the Staff intend to
12 comply with the Commission's direction in the Statement
13 Of Considerations that you will give extensive and
14 detailed review with the construction authorization
15 stage of DOE's plans and procedures for recruitment?

16 >> MS. BUPP: I think, first of all, we have
17 to look at the somewhat troublesome language of the
18 words, plans and procedures for retrieval without the
19 qualifier description of plans.

20 The Staff's view is that the actual language
21 in the regulation controls and therefore, DOE is
22 required to submit only a description of the plans.

23 However, Staff must provide a full and
24 complete review of that description. They must look
25 at the description to determine whether or not the

1 description shows that DOE will be able to carry out
2 these plans as they are described and whether and
3 also, I think you have to look at -- the Staff is
4 looking at in concert with the requirement 63.111(e)
5 where DOE is required to design the GROA so that any
6 or all the replaced waste could be retrieved under a
7 reasonable schedule. And so we looked at the DOE's
8 design elsewhere in the license application to make
9 sure that nothing in that design conflicts with the
10 feasibility and the reasonableness of DOE's
11 description of the plans.

12 >> JUDGE MOORE: When does the Staff believe
13 it will be necessary for DOE to actually create the
14 retrieval plan?

15 >> MS. BUPP: At this point in time, with
16 the Staff not having finished its review of the
17 description of the plans, I can't give a firm answer
18 to that but it is possible that DOE could delay
19 developing full plans until the time that retrieval
20 becomes necessary. However, the Staff does have the
21 ability at both the construction authorization stage
22 and license receive and possess stage to put
23 conditions on both the construction authorization or
24 the license receive and possess that would either
25 require DOE to submit such plans at a certain point

1 in time, or would block any certain portions of DOE's
2 description of plans at this point that must be
3 included in the final plans to make sure that the
4 final plans will meet some minimal level as described
5 in the license application.

6 >> JUDGE WARDWELL: Could you describe your
7 philosophy in license conditions? Specifically, do you
8 believe license conditions can be applied to make up for
9 any insufficient application requirements?

10 >> MS. BUPP: No, it cannot. However, I think
11 it can in a situation like we have at present, where
12 there is an action that may or may not happen for a
13 long time in the future, and that will be the result of
14 a very unusual condition.

15 The repository is designed to hold waste.
16 That is its purpose. Retrieval of the waste would
17 likely be due to some very unusual event and so it
18 is difficult to put the retrieval plans firmly in
19 place right now when retrieval could take place a
20 hundred years from now. And I think counsel for
21 DOE's comparison for of retrieval plans,
22 decommissioning plans is an act of comparison. They
23 are very similar in that both actions could take
24 place a long time from now and where there could be
25 many intervening events that could affect exactly

1 what is required.

2 So I think in this case, it would not be
3 acceptable to review nothing with regard to retrieval
4 plans and put in the license condition that says, please
5 submit your plan at a later date. But where we have a
6 description of retrieval plans, where in concert with
7 description of the design of the repository, gives us
8 reasonable assurance that such retrieval plan is
9 reasonable and could be carried out in the future; I
10 think it would be appropriate for the Staff to if
11 necessary, put in some license conditions or some
12 construction authorization conditions that would lock in
13 certain portions of the description of the retrieval
14 plan.

15 >> JUDGE WARDWELL: And just for completeness
16 and I assume also the license condition should be
17 granted to meet any reasonable assurance standard
18 required for the project to proceed safely?

19 >> MS. BUPP: I'm sorry, I don't quite
20 follow you.

21 >> JUDGE WARDWELL: You couldn't put a
22 license condition -- you couldn't generate a license
23 condition or an order for the application and the
24 applicant to meet the reasonable assurance that
25 public safety is being protected, either?

1 >> MS. BUPP: I think what you're asking, if
2 whether or not you can put a license condition in place
3 in lieu of the applicant making a showing that there is
4 reasonable assurance -- no, that is not.

5 >> JUDGE WARDWELL: That's just what I said,
6 what you said. But doesn't this fly a little bit in at
7 least in regard to notes I have and correct me if I'm
8 wrong, but I got here somewhere I thought that the 2001
9 Commission statements and promulgated rule stated that
10 the retrieval plans would receive extensive staff review
11 as part of any construction authorization. Did I copy
12 that wrong?

13 >> MS. BUPP: No, that is correct. And the
14 Staff is actually in the midst of reviewing the
15 retrieval plans. As counsel for DOE noted, we have
16 asked request for additional information.

17 >> JUDGE WARDWELL: So you have a plan?

18 >> MS. BUPP: We have a -- I'm sorry. We are
19 in the midst of reviewing the description of the
20 retrieval plans and where that description we felt
21 there was more information that was needed, we have
22 asked for request of additional information.

23 I would note, however, that the Staff's review
24 in this area is intended to be included in Volume II of
25 the Safety Evaluation Report and so it is still -- we're

1 still in the early stages of our review with regard to
2 this issue.

3 >> JUDGE MOORE: Ms. Bupp, assume 55 years
4 from now, DOE creates a retrieval plan in response to a
5 challenge, physical challenge, necessitates it. Would
6 that plan require some kind of a license amendment when
7 they actually produce it? And if not, how -- because
8 it's going to be dependent upon the challenge that
9 you're facing, how are the hearing rights of those
10 challenging an application dovetail or not, do not
11 dovetail with that problem?

12 >> MS. BUPP: I think whether or not we -- the
13 plan would require a license amendment sort of depends
14 on what the plan actually says. If anything in the
15 plan conflicts with what's in the construction
16 authorization or the licensee to receive or possess,
17 then they would potentially come in for a license
18 amendment. However, there is nothing in the regulations
19 akin to requirement they come in for a license
20 amendment. For example, when they close the
21 repository.

22 >> JUDGE MOORE: A description of a plan is
23 often referred to as a plan, to prepare a plan.

24 MS. BUPP: That is not entirely accurate here.
25 It is my understanding of what DOE has submitted, is

1 that it does include certain characteristics that the
2 plan will have to meet.

3 It includes sort of more of a parameters for
4 the plan rather than a plan to do a plan at a later
5 date. It is enough information in the plan that there
6 are certain things that are included in the Safety
7 Analysis Report.

8 There is information in the Safety Analysis
9 Report that DOE has submitted as part of its license
10 application so that is the type of information that's in
11 the SAR that has the same status as other information in
12 the SAR. It's not just a plan for a plan.

13 >> JUDGE MOORE: Thank you. Mr. MALSCH. Did
14 you want any rebuttal?

15 >> MR. MALSCH: Thank you. Just one point,
16 one brief comment. I think the question arises that
17 whether if actual retrieval plans are not to be reviewed
18 at the construction authorizations, then, when will it
19 be reviewed? And I would just submit to you that there
20 are three stages specified in Part 63 licensing
21 regulation. Basically, there's a construction
22 authorization stage, a receive and possession stage, and
23 then there is an amendment to the license to effect the
24 permanent closure of the repository.

25 The only references made anywhere to retrieval

1 plans is in connection with the license application and
2 construction authorization stage. There is no mention
3 whatsoever in there at all about retrieval plans either
4 before receipt of the waste or before the repository is
5 permanently closed.

6 So it is a very good question, if not now,
7 when, of these plans to review? I would suggest by
8 default that the contemplation of the Commission was
9 that they review the construction authorization stage
10 because there was no specific provision made for
11 reviewing them at any other stage.

12 >> JUDGE WARDWELL: Could one also interpret
13 the lack of any definitive time that it be reviewed
14 meaning that it would -- it could be reviewed at any
15 time that it became apparent retrieval was actually
16 needed and that the license would then have to be
17 amended based on the review of that plan at that time?

18 >> MR. MALSCH: Well, I don't think so because
19 the Commission went to some effort to specify what
20 particular things would be reviewed at particular stages
21 and nowhere in Part 63 is there an indication that
22 retrieval plans would be reviewed at the time retrieval
23 becomes necessary.

24 >> JUDGE WARDWELL: But there wouldn't be a
25 place to do that because it would not necessarily be a

1 retrieval possession at the end construction
2 authorization or at the end of construction for that
3 matter, and certainly not after closure.

4 >> MR. MALSCH: The real danger here is
5 without having actual retrieval plans, you will not
6 ever know for sure whether retrieval is actually
7 feasible.

8 I mean, the best way to evaluate whether the
9 option of retrieval is preserved and retrieval is
10 feasible, is to have plans and then compare the plans to
11 the repository design.

12 >> JUDGE WARDWELL: But there is nothing in the
13 regulations and in those two specific areas, the
14 sections quoted in the legal issue that says the plan
15 has to be submitted; a description is sufficient at this
16 stage.

17 Now, you can argue that the description is
18 insufficient and then, you can get into the factual
19 component of this if you wish, but --

20 >> MR. MALSCH: Well, our argument, I take the
21 Commission at its word that would review the plan in
22 detail before issuing a construction authorization. So
23 we took that to mean that while the application need
24 only contain a description, the plans themselves would
25 also need be available for review. Thank you.

1 >> MR. SILVERMAN: Would you mind if I add one
2 comment?

3 >> JUDGE MOORE: Certainly.

4 >> MS. SILVIA: I'd call your attention to
5 two regulations, 10 CFR 63.45, which is amendment of
6 license. It says application for amendment of a
7 license may be filed with the Commission et cetera,
8 et cetera. And B, it says "in determining whether
9 amendment will be approved, the Commission will be
10 guided by the considerations that govern the issuance
11 of the initial license to the extent practicable."

12 There is an amendment provision there and
13 remember some of the conditions that are involved in the
14 initial license of whether retrieval ability option has
15 been preserved.

16 And if there was a need for an amendment, the
17 NRC would have to consider that. And furthermore, in
18 63.46, it specifically says, "particular activities
19 require the license amendment unless it's specifically
20 authorized in the license, the license amendment is
21 required for the following activities: Any action that
22 would make a place high level waste be retrieval or
23 substantially increase the difficulty of retrieving
24 waste." I'd call those to your attention and I would
25 just like to briefly say with respect to hearing rights,

1 go back to to decommissioning plan analogy.

2 When a particular applicant files a
3 license application, they do not file a
4 decommissioning plan. At that time, there is no
5 hearing right with respect to the decommissioning
6 plan itself. At the point in time when they are
7 getting ready to terminate their license and they
8 prepare the decommissioning plan, they may or may
9 not need a license amendment. Some licensees do and
10 some don't.

11 If they do, there would be direct appropriate
12 hearing rights. And if they don't, there would not be
13 those hearing rights.

14 >> JUDGE MOORE: Thank you Mr. Silverman.

15 >> MR. SILVERMAN: Thank you.

16 >> JUDGE MOORE: Instead of pushing on, I
17 think we will adjourn for the day. Tomorrow morning,
18 we will reconvene with the case management conference
19 at 9:00 a.m., push forward and upon completion, then
20 resume to hear the oral argument on Issue 10 and
21 Issue 11.

22 Do any of the parties have anything further
23 today for us before we adjourn? Then, we will adjourn
24 and see you all at 9 o'clock in the morning.

25 Thank you.

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(Whereupon the proceedings were adjourned)

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CERTIFICATE OF REPORTER

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of U. S. Department of Energy High-Level Waste Repository, Docket No. 63-01, ASLBP No. 09-892-HLW CAB04 on September 14, 2009, Las Vegas, Nevada, was held as herein appears and that this is the original Transcript thereof for the file at the U.S. Nuclear Regulatory Commission taken by Caption Reporters Inc., and that the transcript is a true and accurate record of the foregoing proceedings.

Lorraine Carter, RPR
Official Court Reporter

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
3 ATOMIC SAFETY AND LICENSING BOARD HEARING
4

5 In the Matter of
6 U.S. Department of Energy
7 High-Level Waste Repository
8 Docket No. 63-001-HLW
9 ASLBP No. 09-892-HLW-CAB04

10 January 27, 2010

11 11:00 a.m. PST

12 TRANSCRIPT OF PROCEEDINGS

13 Pre-Hearing Conference

14 Before the Administrative Judges

15 CAB04

16 Judge Thomas Moore, Chairman

17 Judge Paul S. Ryerson

18 Judge Richard E. Wardwel

19 APPEARANCES

20 For the NRC Staff:

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12 For White Pine County:

13 Richard Sears
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15 Greg James

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17 Jennifer Gores

18 For Native Community Action Council

19 Rovanie Leigh

20 For California Energy Commission:

21 Kevin Bell

22 For Joint Iimbisha Shoshone Tribal Group:

23 Douglas Poland
Shane Elk

24 For Nye County:

25 Mal Murphy

For Eureka County Diane Cur

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

2 JUDGE MOORE: Please be seated. We will
3 resume with the oral arguments, and we're on Issue
4 No. 10. Mr. Malsch.

5 >> MR. MALSCH: Thank you very much, Judge
6 Moore. Marty Malsch for the State of Nevada. Before
7 I begin on Issue 10, I wonder if I could beg the
8 Board's indulgence to call their attention to a
9 technical fact bearing on Issue 8. That's the
10 defense's FEPs issue, which was called to my
11 attention after the argument yesterday, so if I could
12 only take a few seconds.

13 >> JUDGE MOORE: Go ahead.

14 >> MR. MALSCH: There was a discussion with
15 regard to Issue 8 regarding the possible equivalency
16 between a neutralization analysis and a FEPs
17 analysis. The additional FEP called to my attention
18 was this and that is that in a neutralization
19 analysis, you were doing a basically a conditional
20 analysis in which the effect of the drip shield is
21 felt in an unmitigated fashion on the ultimate dose
22 calculation. In a FEPs calculation, though, if you
23 were examining a FEP, which leads to, let's say, the
24 total failure of all drip shields, the effect of that
25 failure, the ultimate calculation is mitigated by the

1 probability of the FEP in the first place.

2 So, for example, imagine an igneous
3 scenario which leads to the total failure of all
4 waste packages, that would be felt in the ultimate
5 calculation, but it would be discounted by something
6 on the order of a tenth of a minus 8 because you
7 take into account the probability of the FEP in the
8 first place. That was called to my attention after
9 the argument. I thought it was important to tell
10 the Board about this.

11 >> JUDGE MOORE: Thank you. Proceed.

12 >> MR. MALSCH: Issue 10 deals with DOE's
13 drip shield installation schedule and what we believe
14 is a -- a very visual and unique issue which it
15 poses. DOE will not install its drip shields until
16 the end of the 100 year --

17 >> JUDGE WALDWELL: Can I interrupt you
18 right off the bat?

19 I remember when I was in graduate
20 school, Compadre in my room had a little sign above
21 his desk, "this is a problem I'm solving, a simple
22 equation." It always got him focused again. For
23 10, I am not sure of the problem we are trying to
24 solve. What is your opinion of what is the legal
25 question before us with this?

1 And can you enlighten me on how it became
2 designated as a legal question because I'm confused
3 on how it did also.

4 I don't see it in your previous
5 contentions, itself, when we're dealing with 162 nor
6 can I really ascertain where it came from.

7 I've read where it's alluded to the Board
8 that, omitted the contention, but I couldn't find
9 that either. And I just need to be steered if you
10 can help me with that before we get into any of your
11 other details, if we could.

12 >> MR. MALSCH: Sure, I'd be happy to do
13 that.

14 Our contention as I recall it said because
15 of DOE's plan to delay installation of a drip shield
16 until the end of the 100-year period, post --
17 pre-disclosure period, after all, the 11,000 or so
18 waste packages containing the wastes that have been
19 in place, that that could not possibly be justified
20 as safe. I think that's the essence of our
21 contention.

22 The legal issue here today is -- is --
23 what I would call a subset of that, and that is that
24 it cannot be legally justified as safe because by
25 virtue of the schedule, a safety finding, which the

1 regulations require be made before a license is
2 issued to receive and replace waste cannot possibly
3 be made. I think that dovetails in with the -- with
4 the contention as written.

5 >> JUDGE RYERSON: Was 162, Nevada Safety
6 162 admitted as a legal issue contention?

7 >> MR. MALSCH: No, it was not admitted
8 specifically as a legal issue.

9 >> JUDGE WALDWELL: Nor did you have
10 questions associated with it?

11 >> MR. MALSCH: That is true. That is
12 true.

13 >> JUDGE WARDWELL: And when did this come
14 up as a subset, this schedule? I see now what you
15 are driving at win regard to the scheduled portion of
16 it.

17 Can you enlighten us on when and who and
18 how this rose up to the level it has?

19 >> MR. MALSCH: I'm trying to remember when
20 we very first raised the issue. We certainly raised
21 it in connection with the negotiation and discussion
22 of the legal issues; but we had raised it earlier --
23 and I'm trying to recall and I don't know whether we
24 raised it in our reply or not. I'm sorry, I just
25 don't recall.

1 >> JUDGE WARDWELL: And to the best of your
2 knowledge, the Board that admitted this -- the Board
3 that was dealing with this, there was nothing in our
4 Board Order that admitted it as a legal contention
5 when we admitted contentions?

6 >> MR. MALSCH: You didn't designate it as
7 a legal contention, really, one way or the other,
8 that is correct.

9 >> JUDGE WARDWELL: I'm encouraged that I'm
10 not completely loony.

11 >> MR. MALSCH: You are not. In any event,
12 the premise for the legal question is precisely this,
13 if DOE will not install its drip shields until after
14 all 11,000 waste packages containing 70,000 metric
15 tons of waste have been in place; and, thus, systems
16 and structures necessary for disposal safety of the
17 drip shields ill not be installed until many years
18 after the radiological hazards with which they were
19 designed to address have already been introduced.

20 As I said, this is a very unusual -- very
21 unusual proposal. Commission policy and practice
22 has always been that a safety finding must be made
23 before any actual radiological hazards are
24 introduced, not afterwards. That's why specific
25 licenses are required in the first place. And that

1 where complex facilities are involved -- and
2 certainly this is a complex facility -- that safety
3 finding required before the hazards are introduced
4 always includes a finding that all of the systems
5 and components necessary for safety have been
6 properly fabricated and installed.

7 For example, you see that for full power
8 reactor licenses in 50, in 57(a)(1). You see that
9 for low power licenses under Part 50, that's in
10 50.57 (c) and even for some materials licenses, for
11 example, plutonium processing facilities under 70.23
12 (a)(a).

13 So the issue here is whether Part 63
14 incorporates that same policy. If so, exactly how
15 does it incorporate that policy; and if it does, are
16 we required to do anything about it at all at this
17 particular stage in the licensing proceeding?

18 >> JUDGE WARDWELL: The policy you are
19 referring to in regards to the other licenses, is
20 that -- is that merely a policy or is it truly a
21 regulation that says, that thou shall not -- that
22 there shall be a safety finding prior to any
23 radiological impact being installed?

24 >> MR. MALSCH: Yes. In the three
25 regulations that I cited, no license can be issued

1 until that finding is made, and that even applies to
2 a low power license, for example.

3 We believe that Part 63 is consistent
4 with this longstanding policy and practice. 63.41
5 (a) (2) requires that before waste may be received
6 or placed in a repository, the NRC must find, quote,
7 "That the construction of any underground storage
8 space required for initial operation is
9 substantially complete in conformity with the act
10 and the application in the regulations."

11 The wording is a bit awkward, but it must
12 mean that satisfactory completion of any underground
13 storage space required for an initial operation must
14 mean satisfactory completion of whatever safety
15 features are necessary for adequate isolation of the
16 waste that will be in place as a part of the initial
17 operation. And in our case, that finding cannot be
18 made, because all of the waste will be in place
19 before a single drip shield is installed.

20 >> JUDGE WARDWELL: When will -- when will
21 the receive and possession license be needed in order
22 to start receiving the waste?

23 >> MR. MALSCH: It would be needed before
24 any waste could be received on the site.

25 >> JUDGE WARDWELL: What I mean is regards

1 to construction starts, constructional license
2 granted, construction starts -- it takes 100 years to
3 complete all the -- all the tunnel drifts, as I
4 understand it, or approximately. But at that same
5 time, waste, there is a plan to -- at the -- as a
6 companion activity, start putting waste in some of
7 those drips already completed; is that not correct?

8 >> MR. MALSCH: That -- that is correct.

9 >> JUDGE WARDWELL: And receive and
10 possession license would be needed for that activity;
11 would it not?

12 >> MR. MALSCH: That is correct.

13 >> JUDGE WARDWELL: And approximately about
14 how -- do you remember how much lag time there is?
15 How many drips have to be constructed before they're
16 going to start the companion, the dual duplicative --
17 not duplicative but the parallel activities at the
18 site?

19 >> MR. MALSCH: I don't know. I mean, I'm
20 not sure. It's a fairly long period. I don't know
21 exactly how long it is. All right. Now, DOE --

22 >> JUDGE MOORE: The waste will arrive on
23 the GROA years in advance to be in place underground.

24 >> MR. MALSCH: Well, some years in
25 advance. I presume they could commence construction

1 of the underground facility as soon as they receive
2 the construction authorization and, in theory, they
3 would be poised to begin in placing waste very
4 shortly after the above-ground infrastructure was
5 available to allow that to be done. That would be in
6 the very beginning. What I don't know is how long
7 the actual replacement operations would last.

8 Now, DOE's staff tell us that there's no
9 problem here, because, first of all, they say, all
10 that is required by way of a finding is a finding
11 that -- that the construction of underground storage
12 space has been completed. And I would submit,
13 that's -- that's a silly reading of the regulations.
14 Obviously, what the Commission had in mind is not
15 only adequate completion of the space, but also
16 adequate completion of whatever facilities in the
17 space are necessary for safety.

18 For example, this would now include not
19 only disposal safety but in placement safety. For
20 example, this staff would be very interested, the
21 Commission would be very interested in the safety of
22 tunnel support or rails for in placing waste or
23 waste monitoring equipment, that would all be a part
24 of this finding. So satisfactory completion of the
25 space must mean also satisfactory completion of

1 necessary structured systems and components in the
2 space.

3 Well, then the next response is, well,
4 but, no, the only finding is that structured systems
5 components necessary for initial operation are
6 completed and we need not concern ourselves with the
7 drip shields because they will not be in stored as a
8 part of the initial operation. And that is true in
9 any temporal sense; but in a more meaningful sense,
10 I think the regulation has to be read to say that as
11 the -- as the waste are in place in the tunnels, one
12 should be sure that there is completed construction
13 of whatever safety features are necessary to assure
14 that those wastes that are being placed in the
15 initial operations will be in place with adequate
16 disposal safety.

17 And, in fact, the regulatory history
18 suggests of this initial operations, suggests it was
19 added not to avoid having to address some safety
20 question, but purely to allow DOE to begin disposal
21 operations without excavating the entire repository
22 drifts. So they can begin with just one tunnel.
23 They wouldn't have to construct all the tunnels; but
24 that doesn't necessarily excuse them from having
25 necessary structure systems and components for

1 disposal safety in place.

2 >> JUDGE RYERSON: But if 162 was admitted
3 as a fact, as a factual contention and I guess I'm
4 not quite clear how the legal issue, particularly as
5 it's been framed here, how that necessarily advances
6 or doesn't advance the ball. I -- this is the issue
7 as it was agreed upon by the parties, I take it, and
8 we had an opportunity in our Order to modify it and
9 we didn't avail ourselves of that opportunity; but as
10 I look at it, I find it a little confusing. I think
11 the issue we are arguing, and tell me if this is
12 correct, is basically whether as a matter of law it's
13 impossible for the Commission to make the required
14 findings to issue a construction authorization in
15 light of the drip shield installation plan? I mean,
16 is that essentially the issue?

17 >> MR. MALSCH: That's a fair statement of
18 the issue.

19 >> JUDGE RYERSON: Okay. Why is that an
20 issue of law as opposed to an issue of fact to be
21 adjudicated?

22 >> MR. MALSCH: Well, I think -- I think if
23 you read the regulations the way we read them, the
24 impossibility arises as a matter of law, not as a
25 matter of fact. Once you accept the factual premise,

1 that there will be no drip shields in place until
2 after all the wastes are in place in the tunnels. I
3 think that's the factual premise. I believe that's
4 what the application provides. I think once that's
5 the premise, I think our argument flows from that.

6 >> JUDGE RYERSON: But the substantial
7 completion section is not -- is only indirectly
8 relevant, I take it, at the constructional
9 authorization phase? I mean, we can't have
10 substantial completion before a construction
11 authorization?

12 So it's -- it's simply in anticipation of
13 whether that would be possible, which strikes me as
14 more of a fact question.

15 >> MR. MALSCH: Well, I don't think it's a
16 fact question, if what you are talking about is a
17 legal certainty that a safety finding cannot be made
18 at the operating license stage. I mean, I agree with
19 you, in ordinary circumstances, one would not be
20 concerned about that as the construction at the
21 construction authorization stage. There is no
22 construction to address; but if you know now at the
23 construction authorization stage, that because of the
24 schedule, a finding required for operation cannot
25 possibly be made, then we would say it would be

1 irrational not to take it into account now before DOE
2 gets its license. Because otherwise the results
3 would be DOE could commence construction of the
4 repository only to be told by the NRC five years
5 later, sorry, we can't give you a license and ha-ha,
6 we knew that all along. I mean, that's irrational.

7 If this is the problem we think it is, it
8 has to be addressed now and it can't be postponed
9 until later. But it did occur to me, there is a
10 factual issue that is associated with this issue and
11 that is NEI contends that the drip shields are not
12 necessary. So if NEI were to prevail on that
13 contention, then, then we don't need the drip
14 shields. We wouldn't need to make any finding
15 amount about satisfaction of the completion of the
16 drip shields. And the issue I guess is effectively
17 moot. So that issue would remain, no matter what
18 one, what the Board did with this particular issue;
19 although, if the Board decided this issue in our
20 favor, then NEI's contention would be a very
21 important contention.

22 >> JUDGE RYERSON: Yeah. Well, I guess
23 that's my concern. You're asking us to decide, as a
24 matter of law, what might be a fact question five
25 years down the road. If NEI were to prevail, for

1 example, then, as a matter of law, the finding could
2 be made, could it not, of substantial completion if
3 the drip shields were turned out not to be necessary,
4 hypothetically?

5 >> MR. MALSCH: Well, I agree with that,
6 except that we are dealing with the application as
7 filed. And we filed contentions, if the application
8 is filed. I think judgments need to be made based
9 upon the application as filed; and the application as
10 filed has drip shields.

11 Now, if in response to some
12 reconsideration, the DOE may want to undertake
13 either after consideration of the NEI contention or
14 otherwise, they want to either amend the drip shield
15 installation schedule so drip shields are installed
16 as the wastes are in place, or they want to do away
17 with it altogether, well, then they'd have to file
18 an application, an amendment to the license
19 application and we would deal with it then; but for
20 now, we're -- we're dealing with the application as
21 it stands.

22 >> JUDGE MOORE: Mr. Malsch, if -- as DOE
23 states -- the drip shield is a component part of the
24 waste package engineered barrier, then it can't
25 possibly be installed until the other components of

1 the waste package engineered barrier are installed.
2 But if it is looked at, as DOE proposes, that it is
3 one engineered barrier, one system with
4 subcomponents, then that initial waste package has to
5 be in place before you could put the drip shields in.

6 Aren't you looking, especially with regard
7 to your argument about what the word "space" in
8 63 -- I believe it's 41 means? It's a physical
9 impossibility under their definitions to put the
10 drip shield in before you put the waste in place?

11 >> MR. MALSCH: Well, I think the time
12 difference is in that respect almost trivial. I
13 mean, you would be installing the waste package and
14 the drip shield almost simultaneously. I don't see
15 why things can't be engineered in that manner. And
16 if that's the way it's done, then the finding would
17 be made, there wouldn't be any problem.

18 >> JUDGE MOORE: Why isn't it being done
19 that way?

20 >> MR. MALSCH: Because DOE is proposing to
21 install all of the waste packages before installing
22 any single one of the drip shields.

23 >> JUDGE WARDWELL: And -- and the reason
24 for that, is it not, is to maintain the ability for
25 retrieval, exactly, if I recall?

1 >> MR. MALSCH: I don't know what the
2 reason is.

3 >> JUDGE WARDWELL: Right now, the drip
4 shields will not be installed. They'll be installed
5 all at once after all the waste packages are
6 installed, even though the waste packages will be
7 installed sequentially while other drifts are being
8 excavated.

9 >> MR. MALSCH: Right. Right.

10 >> JUDGE WARDWELL: Something you said may
11 -- have confused me a little. Is it your position
12 now, there are no factual issues left in 162?

13 >> MR. MALSCH: Not if the Commission
14 decides this issue in our favor. I think if they
15 decide this issue against us, I'm not sure if it
16 would remain a factual issue other than NEI
17 contention. But I think it would be an important
18 policy question for the Commission to address as to
19 whether they would want to contemplate this highly
20 unusual situation. I mean, for example, if the Board
21 should decide that, yes, we agree that it would be an
22 impossibility of making this operating license
23 finding but because of the two-stage licensing
24 process, it isn't necessary to look at that now. I
25 think the Commission might want to look at that even

1 as a policy matter and decide whether that makes any
2 sense. I mean, among other things we have discussed
3 in our Briefs, DOE's suggestion that this matter
4 could be handled by a license condition; that is to
5 say, a license to receive and possess would be issued
6 on condition that all of the 11,000 drip shields
7 would be installed 100 years from now. And we raised
8 I think what is the very important question of
9 exactly what would be the effect of such a license
10 condition?

11 I mean, if the -- if the great, great,
12 great grandson of the current NRC inspector of Yucca
13 Mountain were to inspect the site prior to permanent
14 closure and happen to notice there were no drip
15 shields and ask the DOE official on site, you know,
16 What's going on here, and was told, we're really,
17 really, really sorry, we had every intention of
18 installing them. It turned out we just couldn't.
19 What would the NRC be in a position to do now with
20 all the waste packages in place?

21 I mean, in theory, we -- obviously, a
22 civil penalty would do no good. It would simply
23 pass Treasury monies from the treasury to DOE to NRC
24 back to the Treasury. It wouldn't address a safety
25 problem. NRC's ability to enforce license

1 conditions is rooted upon its fundamental authority
2 to revoke licenses and to order divestiture of the
3 materials. In this case, that would mean orderly
4 retrieval.

5 But as we pointed out in our Briefs, that
6 would be a very difficult order to issue because it
7 would entail a balancing of the risks to workers and
8 maybe others associated with the retrieval
9 operations associated with the risks to the citizens
10 of Nevada with a repository with no drip shields and
11 possibly in violation of the EPA standards. I don't
12 know what the outcome would be of that; but it could
13 be that Nevada is stuck with a repository that's in
14 violation of the EPA -- EPA rules. So I don't think
15 the license condition which -- which DOE has
16 proposed is by any means a satisfactory answer to
17 this problem.

18 I think this is a real serious problem
19 with DOE's proposal. I think it should be addressed
20 now, because, otherwise, what is the purpose of a
21 construction authorization proceeding if not to
22 examine the possibility of real serious problems
23 with preventing an operating license from being
24 issued in the first place. So it is no answer to
25 say, oh, this is just a two-stage licensing process.

1 >> JUDGE MOORE: What happens to NEI's
2 contention if your position were accepted?

3 >> MR. MALSCH: Well, if our position were
4 accepted, that would be the law of the case. Then we
5 could -- if NEI presumably wishes to go forward --
6 litigate that issue in which case I suppose it would
7 be moot. If DOE then also filed an amendment to its
8 license application which, if given, no indication it
9 would do so. So I think we have to deal with the
10 application as it is currently filed and that is with
11 the drip shield installation schedule as is currently
12 filed.

13 Even if DOE should prevail in its -- in
14 its contention, that doesn't require the DOE to
15 amend its license application. It could still go
16 forward on the drip shields. If it amended the
17 license application to eliminate the drip shields or
18 to install them as the wastes were in place, then
19 that would effectively moot this issue; but it
20 hasn't done so or given any indication that it
21 would.

22 >> JUDGE WARDWELL: It's my understanding
23 DOE doesn't exactly agree with your legal
24 interpret -- your definition of the legal issue in
25 this contention; is that correct?

1 >> MR. MALSCH: I think we have a
2 disagreement as to whether it's within the scope of
3 the contention.

4 >> JUDGE MOORE: Okay. Well, we'll ask
5 them as they come up for their opinions. Thank you,
6 Mr. Malsch.

7 >> MR. MALSCH: Thank you.

8 >> MR. SILVERMAN: It's still morning.
9 Good morning, Your Honors.

10 Don Silverman with the Department of
11 Energy. Before we get into our position and my
12 responses to Mr. Malsch, I want to go to the
13 specific question that Judge Wardwell asked at the
14 beginning and I think Judge Ryerson followed up on
15 with, which is: What is the legal question? What's
16 the problem? And where did this all come from?

17 And in particular, I think you were a
18 little befuddled -- correct me if I'm wrong -- with
19 respect to the fact that you didn't see a clear
20 relationship to the legal issue in the contention.
21 And I would just like to make clear, we did not
22 agree to this language in this contention. We
23 worked very closely with Nevada and agreed on almost
24 every single contention; but in this particular one,
25 when we filed our joint stipulation with the Board,

1 we specifically said Nevada and DOE disagree with
2 respect to the nature of this legal issue, raised in
3 this contention and we'll file separate views. We
4 filed separate views.

5 The essence of those separate views were,
6 Nevada is arguing that the pre-operational findings
7 that are required by 63.41 (a) need to be addressed
8 now. And our objection was that 63.41 (a) -- and
9 that requirement didn't appear in the contention at
10 all. And the Board for whatever reason, made the
11 judgment to admit this legal issue as a legal
12 issue -- admit might be -- to have us argue this
13 legal issue as it is written today, which was the
14 way it was proposed by the State of Nevada. So I
15 just want to clarify, we did not believe this was an
16 appropriate interpretation, that this did not flow
17 logically from the contention, and particularly
18 because this -- the very regulation that's at the
19 essence of their argument wasn't even mentioned in
20 the contention. I did want to point that out.

21 Our main response to Mr. Malsch is -- is
22 really three-phased. The first is, we have plain
23 language in these regulations. Our basic position
24 is, we are not required to make this pre-operational
25 finding that construction of the underground storage

1 space is -- that the 63.41 (a) finding, the
2 construction underground facility has substantially
3 been completed at this time. These regulations, the
4 structure and language is clear. There are -- there
5 is a regulation which specifies findings to be made
6 at the construction authorization stage. That is in
7 63.31 (a) (2). Those are the ones that we have to be
8 focusing on.

9 There is a separate regulation that
10 specifies findings to be made at the possession and
11 use stage. That is 63.41 (a), not mentioned in the
12 contention, but very clear in the regulations.
13 There are two different regulations, they're
14 established for two different stages of the license
15 proceeding. And if NRC had wanted us to import into
16 this current proceeding the criteria for issuance of
17 a license to possess and use, we believe they would
18 have done that. So as a matter of plain language of
19 the regulations and the structure of the
20 regulations, we don't think that's appropriate and
21 consistent with the regulations.

22 Furthermore, with respect -- secondly,
23 with respect to the language of the regulations, if
24 you do look at 63.41 (a), which is the
25 pre-operational findings, it defines what that

1 finding is, that the facility has been
2 substantially completed in accordance with the
3 application. And it does use, it says absolutely
4 modifies that, defines it, says the construction is
5 considered to be quote "substantially complete if
6 the underground storage space required for initial
7 operation is substantially complete."

8 Our position is the space, is -- should
9 be defined in an ordinary definition. The
10 Commission could have said, construction is
11 considered to be substantially complete if the
12 underground storage facility was substantially
13 completed, if the underground facility and equipment
14 was substantially completed, if the underground
15 facility and engineer barriers were substantially
16 completed. But they didn't do that; they said
17 "space". And, furthermore, they modified the phrase
18 further with the phrase required for initial
19 operation. And if you look at the regulations, the
20 conceptual regulation, 63.102 (c), it defines three
21 periods of operation and there is an initial period
22 of operation, which is the period of in placement.
23 That's one of the three defined phases. The drip
24 shields are not required for that phase of the
25 proceedings, for that phase of the process. The

1 drip shields are a protection measure. They are a
2 part of the post-closure safety case.

3 So, for that reason as well, we think the
4 plain language does not support Nevada's position.

5 Mr. Malsch suggests there is a safety
6 issue here. And he suggests -- doesn't suggest --
7 states that there is a definitive safety finding to
8 be made at this particular time, and I want to
9 respond to those points.

10 First of all, with respect to the --
11 whether there is a safety issue, we don't believe
12 there is one for several reasons.

13 First of all, the application makes clear
14 that there will be some drip shields, a small
15 number, installed early in the "in placement"
16 process for purposes of the performance confirmation
17 program. So there will be analyses done and
18 scientific studies done early on to see how well
19 these drip shields perform.

20 Secondly, the NRC still has to determine
21 based upon the license application that the drip
22 shields can be installed in accordance with our
23 commitments and can confirm adequate installation
24 before closure, before the time these drip shields
25 are needed to perform their function. And that

1 would be as part of a closure amendment. There is a
2 specific proceeding for an amendment application to
3 close the facility. That's in Section 63.51.

4 Third, we have the requirement to preserve
5 the ability to retrieve the waste through the
6 repository design prior to permanent closure. If we
7 meet that obligation to the satisfaction of the
8 agency, in my view, that obviates the safety issue
9 and, in fact, Nevada essentially acknowledges that
10 last point on safety, on Page 862 of its actual
11 contention.

12 With respect to the notion -- and
13 Mr. Malsch did not address there today -- a
14 definitive disposal finding to be made today or in
15 connection with this construction application, it's
16 a misreading of the regulations.

17 There are multiple important safety
18 findings to be made and they are made at different
19 stages of the process. There is the 63.21 finding
20 to be made with respect to the construction
21 authorization. There is the 63 -- I'm sorry, the
22 63.31, reasonable expectation finding. There is a
23 finding before possession and use. It's in section
24 63.41. And it requires the NRC to find that our
25 activities will be in conformance with the LA, the

1 Atomic Energy Act, the regulations; and there will
2 be -- will not constitute an unreasonable risk to
3 public health and safety, more than broad enough
4 language to encompass the findings that need to be
5 made at that point.

6 More on point is the provisions governing
7 the permanent closure amendment, because that is
8 when the drip shields come into play. And the
9 regulations that govern the findings to be made
10 there at that point in time are in Section 63.45 and
11 Section 63.51; and the regulations say that the
12 Commission will make the same determinations that
13 quote "govern the issuance of the initial license
14 and any other information bearing on permanent
15 closure, i.e., such as, the adequacy of the drip
16 shields to perform their function that was not
17 available at the time the license was issued."

18 We feel that fits perfectly, those are all
19 in the regulatory scheme. And as I said earlier, I
20 think the waste retrieval provisions and the
21 obligation to preserve the option of retrieval,
22 largely dispose of any significant safety issue.

23 Just bear with me a minute. Those are my
24 major comments, but I would like to look over the
25 points that Mr. Malsch made. He did say this was a

1 very unusual proposal, the notion of installing the
2 drip shields not until after all the waste is
3 installed and after the adequate safety finding, it
4 would be too late to make that finding.

5 As I pointed out, there is a permanent
6 closure amendment findings to be made and I think
7 that demonstrates that that's a faulty assumption.
8 And again, I want to remind the Board, it's not an
9 unusual proposal because the drip shields are
10 intended -- they're a part of the post-closure case.
11 They're a part of the post-closure amendment safety
12 findings.

13 >> JUDGE WARDWELL: Can we address that for
14 a minute?

15 >> MR. SILVERMAN: Sure.

16 >> JUDGE WARDWELL: Mr. Malsch pointed out
17 that -- are you aware, let me strike that.

18 Let me ask this: Are you aware of any
19 other license that the NRC grants where it's
20 permissible to put in radioactive materials before
21 any of the containment or controls or needs to
22 protect and provide for the health and safety of the
23 public are installed?

24 >> MR. SILVERMAN: Let me -- I think the
25 premise of your question, with all due respect, is

1 not correct. For any other facility --

2 >> JUDGE WARDWELL: It had no premise. I
3 just said it --

4 >> MR. SILVERMAN: Well, the premise is --
5 the premise is that that you are putting waste in
6 before you have certain controls or protections in
7 place to insure the safety of it.

8 >> JUDGE WARDWELL: The drip shields are
9 relied upon in order to meet safety findings; is that
10 correct?

11 >> MR. SILVERMAN: Yes.

12 >> JUDGE WARDWELL: Are there any other
13 licenses, that you are aware of, where a system
14 structure component that is relied upon for safety is
15 allowed to be installed after the radioactivity has
16 been entered into that?

17 >> MR. SILVERMAN: I'm not. But there
18 is -- this is my point. There is a fundamental
19 difference between this repository and any other
20 licensed facility.

21 >> JUDGE WARDWELL: But that's my second
22 question. Is there anything different that allows
23 you to --

24 THE WITNESS: Yeah, there sure is. This is
25 a permanent repository and the safety findings that

1 have to be made are that this waste can be disposed
2 of safely and held in the repository for a million
3 years. In -- and so the drip shields are a component
4 of the safety case to be made, to demonstrate that
5 this stuff can stay there forever.

6 All right. That is very, very different
7 from any other proceeding I can think of where there
8 is, I'm -- any other facility I'm aware of where at
9 least the initial intent is not to leave the waste
10 in place. It's to have the waste -- it's to have
11 the radioactive material come on the site, operate
12 with it, and then the envisioned -- envisioned
13 intent would be to remove it pursuant to a
14 decommissioning plan or possibly to leave it in
15 place pursuant to a decommissioning plan; but you
16 wouldn't know that until much later. It's very
17 different.

18 >> JUDGE WARDWELL: But the main purpose of
19 this is for permanent disposal? There is only an
20 option for retrieval that must be maintained?

21 >> MR. SILVERMAN: That's correct.

22 >> JUDGE WARDWELL: Is there an operational
23 license granted for this facility?

24 >> MR. SILVERMAN: Essentially, yes, sure.
25 It's the receive and possess license.

1 >> JUDGE WARDWELL: Why isn't it called an
2 operational license?

3 >> MR. SILVERMAN: It's not called an
4 operational -- operating license, because that term
5 is only used in Part 50 and perhaps Part 52 because
6 of -- under the Atomic Energy Act -- and it's I think
7 it's more form over substance really, but what you
8 have is the licensing of a facility for when you are
9 dealing with a reactor, and you're licensing the
10 construction of the facility.

11 Then you get an operating license to
12 operate the facility. There is not much difference
13 really practically between that and almost every
14 other licensed facility where you have -- rather
15 than a license to operate -- a license to receive
16 and possess. It's effectively the same thing.

17 >> JUDGE WARDWELL: Well, couldn't one not
18 argue that the post-closure period is really the
19 operational period of this facility, because this is
20 what the facility is designated for?

21 It's not a -- it's not a decommission unit
22 and reclamation process, but this facility is
23 designed for long-term storage of this.

24 That is the operations of it; could one
25 not argue that?

1 >> MR. SILVERMAN: No, I think one could
2 argue that's part of the operations.

3 >> JUDGE WARDWELL: Sure.

4 >> MR. SILVERMAN: And there are findings
5 to be made before the possession and receive and
6 above-ground operations, in placement period, and all
7 that period up to permanent closure, there is a
8 regulation that governs that. That's a part of the
9 operations period. And then we have the other part
10 of the operations period which is post -- which is
11 closure and post-closure, and there are findings to
12 be made there.

13 >> JUDGE WARDWELL: So, if, in fact, it
14 could be a part of the operations, then the statement
15 at 41 (a) (2), that talks about initial operation, one
16 could have designated these drip shields as part of
17 the engineered barrier system that we're going to put
18 in place prior to putting in place any waste material
19 underground as a logical way to do it?

20 If there was not -- unless there is some
21 other reason not to -- why aren't the drip shields
22 placed right after the waste is put in place?

23 >> MR. SILVERMAN: My understanding -- and
24 there may be other reasons, and I'll get corrected if
25 I'm wrong -- but I think it was alluded to earlier,

1 is at least one reason is that it will aid in the
2 ability to retrieve the waste prior to permanent
3 closure by not having the drip shields installed.
4 And I need to find out if that's completely accurate.

5 >> JUDGE WARDWELL: It doesn't help to turn
6 around and look at a blank stare. That's my
7 impression also. But could not the drip shields be
8 redesigned so that you could still achieve retrieval
9 without that, i.e., the drips made bigger, the drip
10 shield's clearance is less?

11 >> MR. SILVERMAN: That depends. It's
12 possible.

13 >> JUDGE WARDWELL: Is there any reason to
14 believe you couldn't? Correct?

15 >> MR. SILVERMAN: There may be -- there
16 may be no reason you can't. There may be significant
17 impediments to doing it, but the Department's
18 obligation is to propose a design that meets the
19 regulations -- and there is a specific recognition by
20 the Commission that the NRC is not to evaluate
21 alternative designs other than those proffered by the
22 Department. If it fails the appropriate regulatory
23 criteria, it fails and the license is an issue or
24 there is conditions or whatever, but --there is one
25 design to be evaluated.

1 >> JUDGE WARDWELL: Let me finish up with
2 one -- the key question that I've got here or the
3 scenario that I'm developing in my mind is that it
4 seems logical to me that you would want to have all
5 your systems in place prior to introducing
6 radioactivity. It just seems logical.

7 Would not -- even if this fails as a legal
8 issue, some of the things we've just talked about
9 are really factual types of discussions, not legal
10 discussions at all.

11 And there's valid points that you've
12 raised in regards to the questions I have; but
13 they're really to the merits issues, as I see them.
14 Do you see any reason why 162 doesn't survive as a
15 factual contention regardless of the outcome of the
16 legal aspects associated with this contention?

17 >> MR. SILVERMAN: I think it does
18 potentially survive in a somewhat constrained way. I
19 think if you find in our favor that the
20 pre-operational findings are not required at this
21 stage and obviously that particular regulation which
22 isn't mentioned in the contention at all, can't be a
23 basis for the factual arguments that are made by the
24 State of Nevada.

25 However, the contention, as written, did

1 identify a number of other regulations and argues
2 that our plan violates those regulations; and I
3 think that would be a potential factual issue that
4 would survive.

5 >> JUDGE WARDWELL: Thank you.

6 >> JUDGE MOORE: Thank you, Mr. Silverman.

7 >> MR. SILVERMAN: Thank you.

8 >> JUDGE MOORE: NRC staff.

9 >> MR. GENDELMAN: Good morning, Your
10 Honor, Adam Gendelman for the NRC staff. The Board
11 should not impute Section 63.41 --

12 >> JUDGE WARDWELL: Excuse me, may I
13 interrupt?

14 >> MR. GENDELMAN: You may.

15 >> JUDGE WARDWELL: I already have. Would
16 you mind if I need your interpretation of what the
17 legal question we had before us is?

18 >> MR. GENDELMAN: Yes, Your Honor. The
19 Staff's understanding is that because Nevada believes
20 that the license application as submitted cannot
21 satisfy Section 63.41, the license receive and
22 possess requirement, that it, therefore, would not be
23 logical to issue a construction authorization even if
24 an application was otherwise reg -- satisfactory sort
25 of by bringing 63.41 before the Board now through

1 Section 63.31 (a) (2), requiring a finding of
2 reasonable expectation that the waste can be disposed
3 of without unreasonable risk to public health and
4 safety. That's the Staff's understanding.

5 >> JUDGE WARDWELL: Isn't Nevada's position
6 even stronger that, as a matter of law, those
7 findings can't be made?

8 >> MR. GENDELMAN: Right. In publication
9 of the 2001 final rule, the Commission described the
10 purpose of Section 63.31 quote "This section states
11 the basis on which the Commission may authorize
12 construction of a geologic repository operations area
13 at the Yucca Mountain site" at 66. CFR 65.781.

14 The Commission described Section 23.41.
15 This section states the basis on which the
16 Commission may issue a license to receive and
17 possess special nuclear or byproduct material at a
18 geologic operations area at the Yucca Mountain site.
19 There is no discussion there or elsewhere about
20 imputing Section 63.41 into this construction
21 authorization proceeding.

22 The Commission recently held that quote,
23 "Courts construe regulations in the same manner as
24 they do statutes, by ascertaining the plain meaning
25 of the regulation, a basic tenet of statutory

1 construction equally applicable to regulatory
2 construction is that a statute should be construed
3 so that a FEP is given to all of its predictions,
4 it's hydro resources 63 NRC 483, 491 in 2006.
5 Nevada's reading does not give effect to the plain
6 meaning of 63.41 (a) (2); and, further, it would
7 render that section meaningless with respect to
8 license and receive and possess proceeding as they
9 would already be findings as to that requirement.

10 The Staff now is making safety findings
11 about -- in it's evaluation, it is evaluating the
12 drip shields for compliance with several safety
13 requirements, including 63.21, 31, 112, and 113.
14 That is, the Staff is evaluating the Department's
15 drip shield and installation plan to determine
16 whether there is a reasonable expectation that the
17 waste can be disposed of without unreasonable risk
18 to health and safety.

19 These aren't being delayed. These aren't
20 delayed findings. But the imputation of the Section
21 63.41 requirement is beyond the scope of this
22 proceeding and just to follow on what was discussed
23 before, the Staff followed a comment on the proposed
24 language of this -- this legal issue and felt that
25 it was beyond the scope of the contention.

1 >> JUDGE RYERSON: Do you agree that, as
2 written, Nevada Safety 162 continues to pose a fact
3 question report?

4 >> MR. GENDELMAN: I think that's right.
5 The Staff's comment was whether or not the claim that
6 63.41 requirements should be imputed was out of the
7 scope of the contention, but as to whether or not the
8 contention makes a factual claim, I -- I think
9 that's fairly clear from the language of the
10 contention.

11 Thus, the Commission makes findings
12 pursuant to 63.31 (a)2 now concerning, among many
13 other things, DOE's drip shield, fabrication and
14 installation plans.

15 To that end, in fact, the Staff issued a
16 request for additional information about those
17 fabrication and installation plans -- and I can give
18 you a citation and, I believe, the ML number and the
19 LSN number in a moment. It's ML09-182-0629, Chapter
20 2.1.1.2 set 1, where the Staff in its review now
21 during the construction authorization proceeding
22 asked questions about the drip shield fabrication
23 and installation.

24 So, in summary, the Staff is making safety
25 findings as to the drip shields now, but the

1 imputation of this requirement is inappropriate
2 under our rules. And unless the Board has anything
3 further?

4 >> JUDGE MOORE: Thank you.

5 >> JUDGE WARDWELL: I have one question O.n
6 Page 46 of your Brief where you talk about -- the
7 Brief for the legal issue, the top of the paragraph,
8 this is in your discussion of 63.41. You mentioned
9 something that you've alluded to in your oral
10 presentation here today that where a law includes
11 particular language in one section but omits it in
12 another, it is presumed that the exclusion was
13 intentional and purposeful.

14 Doesn't that contradict with your position
15 in Issue 2 that you -- when you said there was no
16 significant change intended by the removal of
17 language in that issue?

18 >> MR. GENDELMAN: Well, in this case, I
19 think that language is being used to note that this
20 fairly novel construction by Nevada reading one
21 requirement for a clearly segmented consideration
22 license to receive and possess requirements into the
23 construction authorization requirements, it is not
24 supported by a -- by a position like that.

25 I think with respect to that change, as I

1 believe was noted before, and I can get you a cite
2 for this again, if you like -- that the purpose with
3 that change was to comply with the EPA's stated
4 standard and that it was not an intentional
5 substantive change, but certainly I would speak with
6 my co-counsel and give you more on that, if you
7 like.

8 >> JUDGE MOORE: No need. Thank you,
9 counsel.

10 MR. GENDELMAN: Thank you.

11 >> JUDGE MOORE: We'll now address Issue
12 11.

13 Mr. Malsch.

14 >> JUDGE WARDWELL: Do you have time for
15 rebuttal?

16 >> JUDGE MOORE: Oh, did you want any
17 rebuttal on that, on Issue 10?

18 >> MR. MALSCH: Yes, if I may, for a few
19 minutes. Then I will go directly into Issue 11.

20 I don't think it's any secret to anybody
21 that Nevada thinks that DOE's plan to assure safety
22 of the repository by installing 11,000 drip shields
23 100 years from now is unbelievable and fantastic.
24 When Dr. Wardwell asked DOE the question whether
25 there was any precedent when the NRC has ever

1 allowed materials to be possessed on site without a
2 finding that necessary safety equipment was in
3 place, I think he really had no answer. I mean,
4 other than to say, oh, but this is different. But
5 why is this different?

6 I mean, obviously, the Commission would
7 not have allowed operation of a reactor without
8 necessary safety equipment in place and it would
9 have made no difference whether the reactor was
10 going to operate for 40 years or a hundred years or
11 a million years. The principle is still there. And
12 the principle is still the problem there.

13 The fact is there would be waste received
14 on site and in wastes in tunnel drifts, all 70,000
15 metric tons without metric systems in place. I
16 submit, that is absolutely unprecedented in all the
17 decades of NRC regulation.

18 Secondly, I agree, you could read the
19 regulations to say that at the construction
20 authorization stage, one need not address this
21 issue; but I would submit that the finding required
22 at the construction authorization stage that there
23 was reasonable assurance of safety disposal would
24 embrace this finding if it made sense to do so. And
25 I think it clearly makes sense to do so.

1 If we are right about this issue, it would
2 be utterly irrational for the NRC to authorize
3 construction of the repository, knowing that it
4 can't possibly operate. That is contrary to the
5 whole idea of there being a construction
6 authorization stage in the first place.

7 Finally, as to the scope question with
8 which is raised, whether this is within the scope of
9 our contention, I would just mention that, in fact,
10 we did raise this issue in our reply to DOE's Answer
11 to that contention. That's on Page 693 to 699.

12 We did not actually characterize it
13 precisely as a legal issue; but it is there. And
14 whether -- and whether that is within the scope of
15 the contention was addressed in papers and arguments
16 we've submitted in connection with the framing of
17 this legal issue in the first place. Thank you.

18 Let me address now Issue 11. We've
19 agreed --

20 >> MR. GENDELMAN: I'm sorry, Your Honor, I
21 apologize, in speaking with co-counsel, I wanted to
22 slightly correct what I said in response to your
23 question about Issue 2. I just wanted to note that
24 in Issue 2, the language change was from a proposed
25 rule to the final rule, where the statement I believe

1 you cited in our discussion concerned construing a
2 regulation as a whole and didn't discuss proposed
3 language versus final language.

4 >> JUDGE MOORE: Thank you.

5 Proceed, Mr. Malsch.

6 >> MR. MALSCH: Yes. This is Issue 11
7 which deals with DOE's PMA or Performance Margins
8 Analysis, we have agreed to share time 50-50 with
9 staff on this issue and we have agreed that we would
10 go first, and I would like to reserve a few minutes
11 for rebuttal.

12 In its opening Brief, Nevada argued that
13 DOE's Performance Margins Analysis is of
14 indeterminate quality and cannot be used to validate
15 or provide confidence in the TSPA because it has not
16 complied fully with Quality Assurance requirements
17 in subpart (g) of Part 63. DOE appears to insist to
18 the contrary.

19 First of all, it's important to recognize
20 exactly what the Performance Margins Analysis PMA
21 actually is. And that's explained quite carefully
22 in the Safety Analysis Report at Section 2.4 at Page
23 245 through 24 -- 246 analysis. It explains there,
24 that the PMA is a separate set of TSPA calculations
25 from which some conservatisms -- some supposed

1 conservativisms have been removed.

2 So, clearly, the PMA is is a kind of a
3 Performance Assessment much like the TSPA except
4 that certain conservativisms have been removed. It
5 clearly fits the definition of a Performance
6 Assessment in 63.2 and 102 (j).

7 Most importantly, though, DOE concedes in
8 its Brief here that the PMA uses unqualified
9 software and data. Now, QA requirements are found
10 in subpart 63 and the PMA is subject to these QA
11 requirements if three conditions are met -- and I
12 would submit that all three conditions are clearly
13 met.

14 The first condition is in 63.142 (a),
15 which sets forth the terms of the applicability of
16 subpart (g). The relevant provision here says that
17 QA requirements apply to analyses of samples of data
18 and scientific studies. And clearly, the selection
19 of data to support the Performance Margins Analysis
20 in a conduct of the PMA, itself, including the
21 developing and selection of models for the PMA
22 constitute both an analysis of samples and data and
23 a collection of scientific studies. No language
24 suggests otherwise, and DOE points to none.

25 In fact, their briefs completely ignore

1 this particular aspect of subpart (g). In fact, if
2 the PMA doesn't constitute a analysis of samples and
3 data or the collection of scientific studies, nor
4 does the total system performance assessment, and
5 not even DOE, even that is exempt from QA
6 requirements in subpart (g). So this particular
7 condition is clearly met.

8 Second, under 63.142 (a), subpart (g)
9 applies to activities that are related to the design
10 of barriers that are important to the waste
11 isolation. Well, clearly, the PMA is so related.
12 It applies to the same repository system as a TSPA,
13 and it assesses the performance of the same natural
14 engineered barriers used in a TSPA to establish
15 disposal safety. So, clearly, the PMA is related to
16 the design of barriers that are important to waste
17 isolation. This condition is clearly met.

18 Third, there at 63.141, which defines the
19 scope of subpart (g) and provides, in effect, that
20 QA requirements in the subpart apply to all
21 activities quote, "Necessary to provide adequate
22 confidence that the repository would perform
23 satisfactorily," which we take to mean will perform
24 safely.

25 So from that, we see that the PMA is

1 subject to subpart (g) and is Quality Assurance
2 requirements if it is necessary to provide adequate
3 confidence in safe disposal. So, if DOE is offering
4 the PMA in evidence because it believes it is
5 necessary to establish the adequacy of the total
6 system performance assessment, it's subject to QA
7 but cannot be used for this purpose because it uses
8 unqualified data and software.

9 If DOE doesn't believe the PMA is
10 necessary to show adequacy of the Total System
11 Performance Assessment, then TSPA is able to stand
12 on its own without the Performance Margins Analysis
13 and should stand on its own.

14 We consider the effect, the muddying
15 effect there would be if the Board and Commission
16 were to assess the accuracy of the TSPA based on a
17 combination of qualified and unqualified data and
18 models. If we're going to do this, why bother to
19 have Quality Assurance requirements in law?

20 >> JUDGE MOORE: Mr. Malsch, in your reply,
21 you state that the PMA must be struck from the
22 application. If it can't be relied upon, it can't be
23 relied upon. Why must it be struck?

24 >> MR. MALSCH: I think we should not take
25 that literally. I think I mean by that, it would not

1 be admissible in evidence to establish post-disposal
2 safety with the peak Performance Margins Analysis in
3 it.

4 Now, DOE says that in their Briefs and in
5 their Safety Analysis Report that the PMA was
6 intended as a validation tool providing confidence
7 and they also said importantly is offered to show no
8 risk of delusion, which I -- which means that it is
9 offered to show that factors or models in the TSPA
10 believe to be conservative are, in fact,
11 conservative in terms of the ultimate dose and
12 release calculation.

13 These things sure sound to us like things
14 that are necessary to establish the adequacy and
15 safety of the Total System Performance Assessment;
16 and, therefore, if that is what DOE is offering them
17 for, I think they should be subject to QA and
18 they -- as DOE has admitted -- are not fully
19 compliant with QA requirements.

20 On the other hand, if DOE is only offering
21 the PMA as corroborative evidence to show extra
22 assurance, and it's not clear at all that's all that
23 they are offering it for -- because as I indicated,
24 the SCR talks about dissolution, adequate validation
25 and the like, but if that is what they are offering

1 it for, I suppose in theory it's not subject to QA
2 because it is not necessary to establish the
3 adequacy of the Total System Performance Assessment.

4 But I do think that would lead to a highly
5 prejudicial situation for the other parties who are
6 opposing the license application. By analogy, would
7 we admit the results of a illegal search and seizure
8 in a criminal case not to provide evidence of proof
9 beyond a reasonable doubt, but evidence of proof way
10 beyond a reasonable doubt?

11 Once the evidence is received, it's
12 impossible to make distinctions of these sorts. So
13 if DOE is offering it as corroborative evidence,
14 that's all very interesting; but to admit it as such
15 would hopelessly muddle up the safety case and would
16 greatly prejudice the other parties.

17 So, in conclusion, either the term PMA is
18 necessary to show the adequacy of the TSPA; in which
19 case, it can't be allowed to do so, because it
20 relates DOE requirements. Or it's not necessary in
21 which case it's both irrelevant and its admission as
22 a part of DOE safety case would be highly
23 prejudicial.

24 >> JUDGE MOORE: Thank you, Mr. Malsch.
25 Staff.

1 >> MS. SILVIA: Andrea Silvia on behalf of
2 the NRC staff.

3 If the PMA is being relied upon to meet
4 the regulatory standard of adequate confidence, then
5 it must meet the Part 63, subpart (g) Quality
6 Assurance requirements. Section 63.142 (a) requires
7 a Quality Assurance Program to be applied to all
8 structured systems and components important to
9 safety to design an characterization of barriers
10 important to waste isolation and to related
11 activities.

12 The related activities includes analyses
13 of data and scientific studies. The PMA, a set of
14 calculations that analyzes post-closure performance
15 over a set of modeling cases falls into the category
16 of related activities under 63.142. Therefore, if
17 the PMA is needed to provide adequate confidence
18 under 63.141, that the repository will perform
19 satisfactorily, it must be subject to a quality
20 assurance program.

21 However, nothing prevents DOE from
22 providing additional information in its license
23 application to offer additional confidence in the
24 performance assessment. Information that is not
25 needed to demonstrate adequate confidence does not

1 need to be qualified under DOE's Quality Assurance
2 Program.

3 >> JUDGE MOORE: Counsel, I'm just curious,
4 how do you respond to Mr. Malsch's comment that it
5 can't be relied upon, but here it is and the -- here
6 it is, is only for the Staff to rely upon.

7 >> MS. SILVIA: Not -- the Staff does not
8 need to rely upon everything included in the license
9 application to make its safety findings. There is
10 nothing in the regulations that prevents DOE
11 from providing additional information.

12 >> JUDGE MOORE: You said that if it is
13 used to -- for added confidence, why would the staff
14 ever accept something as added confidence that was
15 not QA qualified? Almost definitionally, is it
16 something that's not QA qualified, something in which
17 one cannot establish a confidence level?

18 >> MS. SILVIA: Well, the Staff will not
19 rely on anything for its safety findings that is not
20 credible. But as of now, the Staff has not completed
21 its safety findings, so it's -- unclear how the Staff
22 will or will not use the PMA. But if it is necessary
23 to the staff safety findings, the Staff will insure
24 that it is subject to the subpart (g) Quality
25 Assurance Requirement.

1 >> JUDGE MOORE: Thank you, counsel.

2 DOE.

3 >> MR. SILVERMAN: Thank you, Your Honor.

4 Don Silverman for DOE. I think there's
5 two ways that the Board can deal with this
6 particular legal issue and there is a very simple
7 way. I'm going to address that first. And if we
8 want to get into the details of perhaps the more
9 complicated way of dealing with them, we can do
10 that.

11 A significant part of Mr. Malsch's
12 argument, was -- he's stated three reasons for why
13 the PMA is the kind of analysis that should be
14 governed and conducted pursuant to a -- the
15 department's Quality Assurance Program. We agree
16 with that.

17 And that takes me back to the actual
18 statement of a legal issue. And if we read that
19 statement as precisely as written, it says, "Whether
20 under certain regulations" -- which are basically
21 among others, the QA regulations -- "the PMA can be
22 used to validate or provide confidence in the TSPA,
23 if its data and models are not qualified under DOE's
24 Quality Issuance Program, the Department's position
25 is if those data and models are not qualified under

1 a QA program, then the answer is, no, we can't rely
2 on them. That would resolve the legal issue. We're
3 in agreement with the part with both the Staff and
4 Nevada on that.

5 Where we depart -- and that could resolve
6 the matter as a legal matter. Where we depart is
7 whether, in fact, that PMA has been conducted in
8 accordance with DOE's Quality Assurance Program and
9 our position is that it has been.

10 There was some language in the SAR and in
11 some of the supporting documents that refer to the
12 use of unqualified data. And that's where I think
13 we got a little confused that perhaps DOE's language
14 could have been written a little more clearly. But
15 the operative phrase that I think the State of
16 Nevada is relying on is a statement in a document
17 that supports DOE.

18 It's the TSPA model analysis report. And
19 they're referring to an Appendix to the TSPA model
20 analysis report. The basic TSPA model analysis
21 report sets forth the basic findings, how we went
22 about the TSPA, and the conclusions to the TSPA.
23 This Appendix that we're referring to deals with the
24 PMA as a tool to test the conservatisms in, as an
25 ancillary analysis, if you will, to test the TSPA.

1 And in that section of the Appendix, which deals
2 with PMA, we say that PMA contains both qualified
3 and unqualified data.

4 What we meant by that was in context, when
5 we refer to unqualified data, was that the data was
6 not qualified for direct use in the TSPA. That is
7 not an after the fact rationalization. If you read
8 the sentences around that particular sentence, I
9 think it is reasonable to draw that conclusion and I
10 have consulted with our people. And they assure me
11 this is what they intended. They merely meant to
12 say that this data was not suitable for use --
13 direct use -- in the TSPA; but they did not mean to
14 imply it was conducted or evaluated in accordance
15 with a QA program or that it was unsuitable for use
16 in a cooperative analysis.

17 This particular section of this
18 attachment, Appendix to the TSPA model report
19 says -- and I'm just citing the operative sentences.
20 "This PMA utilizes the TSPA-LA model with changes to
21 certain inputs in models." I'll give -- this is
22 Page C-8 of the Appendix to the TSPA model report.

23 "This PMA utilizes the TSPA-LA model with
24 changes to certain inputs in models. This section
25 presents those inputs that have been changed from

1 those used in the TSPA-LA model and additional
2 inputs necessary to support the PMA. Table C-4-1
3 lists the input parameters to the TSPA-LA model that
4 have been changed or deleted for the PMA." And then
5 it says, the PMA contains both qualified and
6 unqualified data. What we really meant there, in
7 this context was -- we couldn't use some of this
8 data for the TSPA, but we did not suggest it wasn't
9 perfectly suitable for a corroborative analysis.

10 >> JUDGE WARDWELL: So, all of this
11 discussion is really -- as you, the latter discussion
12 is really a factual issue, not a legal issue, isn't
13 that correct, on whether or not your PMA actually
14 does meet the QA is a factual discussion?

15 >> MR. SILVERMAN: I agree with that. If
16 the Board simply agrees that we cannot use data in
17 the PMA that isn't appropriately qualified under our
18 Quality Assurance Program, assuming that Quality
19 Assurance Program complies with the regulations, then
20 there would be a factual issue as to whether it does
21 or not.

22 >> JUDGE WARDWELL: So the way the legal
23 issue was framed from the suggestions of the parties
24 was whether or not under a 10.CFR 63, 113, 114, Part
25 63, subpart (g), the PMA can be used to validate or

1 provide confidence in the TSPA if its data and models
2 are not qualified under DOE's Quality Assurance
3 Program, you agree that on that legal issue, is
4 correct?

5 >> MR. SILVERMAN: The answer is no. And
6 our further position is, however, it was the -- data
7 was -- the data was qualified in accordance for the
8 purpose it was used.

9 >> JUDGE WARDWELL: Right, and that gets
10 back to Nevada Safety 171 where it basically --
11 Nevada designated it as a legal issue. They've
12 provided in their first sentence, the first half of a
13 sentence pretty much the same thing as you agreed
14 upon wording here for the legal issue of 11, but then
15 it goes on to say, but it cannot lawfully be used for
16 these purposes because it relies on data and models
17 that are not qualified pursuant to DOE's Quality
18 Assurance Program. That is a factual issue, is it
19 not, similar to what you just tried to provide
20 some defense why you felt it was qualified?

21 >> MR. SILVERMAN: I agree it is. And, in
22 fact, that statement of the legal issue and statement
23 contention is identical to the legal issue. Yes, I
24 agree.

25 >> JUDGE WARDWELL: The first half is

1 identical; but after the "but" isn't.

2 >> MR. SILVERMAN: You are right.

3 >> JUDGE WARDWELL: Because nothing in your
4 wording of 11 says anything about whether or not your
5 data and models are or are not qualified. This is
6 more specific -- and it seems to me, part of 171 even
7 though it's designated as a legal issue might survive
8 as a factual issue. Would you have any objections to
9 that?

10 If we can recast 171, the residual last
11 half of it as a remaining factual issue to be --

12 >> MR. SILVERMAN: Right, as to whether the
13 data and models are qualified pursuant to the QA
14 program, I would have no objection to that
15 whatsoever. And I think unless you have further
16 questions, that was all we have for us.

17 >> JUDGE MOORE: Thank you, Mr. Silverman.

18 Mr. Malsch, do you wish brief rebuttal?

19 There seems to be complete agreement that
20 the answer to the legal question that's posed in
21 Issue 11 is no. And do you agree that the remaining
22 part of your contention 171 is a factual matter?

23 >> MR. MALSCH: I think the remaining part
24 of the contention could be a factual matter, but I
25 still think the contention can be resolved as a pure

1 legal matter for the following reasons: What you
2 have here is a concession by DOE that its PMA used
3 models and software that were not qualified as direct
4 inputs to the TSPA and that was explained to me that
5 it could not be used to support the TSPA directly but
6 could only be used to provide corroborative evidence
7 of the adequacy to TSPA.

8 And we've agreed here that if that is the
9 only purpose for which the TSPA is being offered,
10 that is to say to provide corroborative evidence,
11 then it need not be subject to subpart (g), even
12 though it may be subject to other DOE Quality
13 Assurance requirements.

14 The problem I have is -- is a problem that
15 I raise in connection with the illusion of a
16 criminal case. I think it would be highly
17 prejudicial and contrary to the overall intent to
18 subpart (g) to admit into evidence unqualified
19 information and models and data to provide added
20 confidence on top of adequate confidence. I think
21 that muddies the issue up completely and is highly
22 prejudicial.

23 >> JUDGE MOORE: But your premise is that
24 DOE's statements from Appendix C noted in footnote 12
25 of DOE's Brief and then again in their reply Brief

1 of -- I guess it's the TSPA, Appendix C, is black and
2 white to be read literally that they used unqualified
3 data to support the PMA.

4 I believe -- and I'm sure Mr. Silverman
5 will correct me if I am wrong -- that he just
6 explained to us that -- that, although poorly
7 worded, is not meant -- was not meant literally, and
8 that there were elements of the Sandia work that
9 were unqualified or would be unqualified under DOE's
10 QA program. I do not believe Mr. Silverman said
11 that that statement was to be read literally and
12 meant that they did, in fact, use that material.
13 And that would still remain as a factual question.

14 >> MR. MALSCH: I -- I think the -- this is
15 the TSPA model report is actually quite clear about
16 this, and let me read exactly what DOE said in its
17 model report. It said, "Table C-4-2 lists input
18 parameters that have been added to the TSPA-LA model
19 for the PMA, Performance Margins Analysis. The PMA
20 contains both qualified and unqualified data."

21 Then it goes on to say, "The data
22 traceability described in Section C4-1 and C4-2
23 providing mapping from the PA-parameters to the data
24 source." So --

25 >> JUDGE WARDWELL: Well, regardless -- are

1 you still quoting, I'm sorry?

2 >> MR. MALSCH: Yes. This goes on in the
3 final section, Section C-5. I'll read that to you
4 also. "It is important to reiterate that while these
5 additional sub-models and data" -- the ones we're
6 talking about here -- "were developed in accordance
7 with apple Quality Assurance Requirements."

8 Now, these must be other than DOE's
9 Quality Assurance Plan, for direct inputs in the
10 TSPA. In some cases, they represent models with
11 limited technical foundation, verification and
12 validation consistent with the requirements of
13 SY-PRO-066 models." This is the program relied upon
14 for developing the data. "PA models, sub-models
15 manual software that is controlled but not
16 qualified."

17 So what the DOE is telling you is that
18 they, the PMA was not qualified as a direct input to
19 the TSPA and what they mean by that, clearly is, it
20 is only qualified and it was only intended to be
21 used for a corroborative evidence purposes.

22 >> JUDGE WARDWELL: Whether or not DOE's
23 data models are qualified under DOE's QA program is a
24 factual discussion, not a legal one; isn't it?

25 I mean, all you're saying is, yeah, you've

1 got a position and they've got a position and let's
2 sort it out whether or not their data or models do
3 match and are in compliance with their QA program?

4 >> MR. MALSCH: Well, but there is only one
5 Quality Assurance Program. That's the one that's
6 associated with the license application. I believe
7 the DOE is telling us that the PMA uses data and
8 models, it does not qualify in accordance with that
9 program. Perhaps --

10 >> JUDGE WARDWELL: That isn't what I just
11 heard him say but, regardless, that debate is a
12 factual issue.

13 >> MR. MALSCH: If there is a debate about
14 that, I would agree, it's a factual issue, that is
15 correct.

16 >> JUDGE WARDWELL: Okay. Whether or not
17 the PMA can be used to validate or provide confidence
18 in the TSPA, if it's -- if it's data or models are
19 not qualified under DOE's Quality Assurance Program
20 is the legal question. And both parties agree that,
21 yes, it can't be, if it doesn't meet it.

22 >> MR. MALSCH: That is correct.

23 >> JUDGE WARDWELL: So it seems to me the
24 legal issue is resolved. What's remaining is the
25 last half of what you said under 171, your position

1 is it cannot lawfully be used for these purposes
2 because it relies on data and models -- data and
3 models that are not qualified under the QA program.
4 That's a factual discussion.

5 >> MR. MALSCH: I think it is, but there is
6 another piece of the legal question that would need
7 to be addressed. And that is -- let's assume for
8 purposes of argument the resolution of the factual
9 question is that the PMA relies upon data and models
10 that are not, in fact, qualified under subpart (g).
11 The question then remains whether it may be offered
12 as corroborative evidence.

13 >> JUDGE WARDWELL: Where is that stated in
14 legal Issue 11?

15 >> MR. MALSCH: The issue is in terms of
16 whether the team may be offered to provide -- to
17 validate or provide confidence. Provide confidence
18 can mean both adequate confidence and extra
19 confidence. I think it's within the scope of the
20 legal question. And it's important to know that
21 because then we would know what uses could be made of
22 the PMA in the event it does turn out to be factually
23 correct, that it does use data and software that are
24 not qualified under subpart (g).

25 >> JUDGE MOORE: But if it can't be relied

1 upon for the TSPA, then we're all in agreement that
2 unqualified data cannot be. It's a factual matter
3 pure and simple, whether or not DOE crossed the line
4 or didn't cross the line and if in its review, the
5 staff errs because the SCR will be out by the
6 time -- there is discovery and go to hearing, that
7 will all be known whether or not the Staff has
8 complied with the regulations -- in enforcing the
9 regulations.

10 >> MR. MALSCH: Let me put it this way: If
11 the PMA, if it is agreed, that the PMA cannot be
12 offered to either provide adequate confidence or any
13 confidence at all in the TSPA, without it being fully
14 compliant and I agree, there is no other issue
15 remaining except a factual issue whether or not it is
16 fully compliant.

17 >> JUDGE MOORE: But I ask you what
18 initially that in the context of your reply Brief,
19 you said it should be struck from the application,
20 why it needed to be struck and I believe your answer
21 was that that was for perhaps an overstatement or
22 something in that regard. And you then explained
23 that it, in effect, that it did not have to be
24 physically removed. Doesn't that not contradict what
25 you are now telling me?

1 >> MR. MALSCH: No, I'm saying that in
2 terms of the ultimate DOE safety case, post-disposal
3 safety case, when it comes to establishing the
4 post-disposal safety case, if it is -- if it is
5 agreed that a PMA which uses unqualified software and
6 models, cannot be offered as any evidence of
7 confidence or any support at all for the TSPA. I
8 agree the only remaining issue is whether, in fact,
9 the TSPA is compliant or not compliant with subpart
10 (g).

11 My only issue is, this whole question
12 about corroborative evidence. And I think it should
13 be made clear that we believe that the use of the
14 PMA to provide corroborative evidence, you know,
15 added confidence, extra confidence, would be highly
16 prejudicial and contrary to subpart (g).

17 >> JUDGE RYERSON: Okay. But one
18 interpretation of the question, the legal question
19 that's been imposed would cover that, I mean, it
20 says, it can, you know, cannot be used to validate or
21 provide confidence in the TSPA. And your concern is
22 that providing confidence should be interpreted as
23 also extending to some other type of corroboration?

24 >> MR. MALSCH: Well, yeah, we were
25 construing confidence in a broad sense as support for

1 any support to the TSPA.

2 >> JUDGE RYERSON: At least not speaking
3 for he Board but for me, that's a rational reading of
4 this -- of this issue, and there seems to be no
5 disagreement on the issue as a legal issue.

6 >> MR. MALSCH: Thank you.

7 >> JUDGE MOORE: Thank you.

8 >> MR. SILVERMAN: May I add a brief word,
9 Your Honor?

10 >> JUDGE MOORE: Perhaps not.

11 >> MR. SILVERMAN: I don't know my own
12 strength.

13 One very quick comment. Mr. Malsch has
14 repeatedly said it was entirely prejudicial to admit
15 its evidence into this case, data or information
16 that's not qualified pursuant to a QA program. I
17 don't believe that's the evidentiary standard at
18 all. If it was the evidentiary standard, I don't
19 believe the state of Nevada could beat it, because I
20 don't believe -- I suspect much of the information
21 they will submit in this case is not prepared
22 pursuant to the a qualified -- pursuant to a QA
23 program that meets the requirements, I think that's
24 completely wrong.

25 >> MR. MALSCH: Your Honor, in fact, we do

1 have a compliant program data gathering analysis
2 supplied with this.

3 >> JUDGE MOORE: I think we've heard all we
4 want to hear on Issue 11. I would like to thank all
5 counsel, parties for your briefing and presentations.

6 Mr. Silverman, do you wish to be
7 acknowledged?

8 >> MR. SILVERMAN: I do.

9 >> JUDGE MOORE: If it's for the last word,
10 the answer is no. If it's for another purpose --

11 >> MR. SILVERMAN: It's for another
12 purpose. It's to respond to something I was asked to
13 respond to yesterday and to come back to you and also
14 to make one clarification on something I said
15 yesterday.

16 >> JUDGE MOORE: Go ahead.

17 >> MR. SILVERMAN: I would never seek to
18 try to get the last word in.

19 Two points I wanted to bring up, one was a
20 clarification and I -- frankly, I have not gone back
21 to look at the transcript to see exactly what I
22 said, but it's been called to my attention that in
23 connection with the Nevada 161, which is the absence
24 or failure of the drip shields, that the record
25 might not have been clear as it could have been on

1 one matter. And in the context of that discussion
2 yesterday, I wanted to point out that there was some
3 discussion of the igneous scenarios. And the record
4 might not have been clear with respect to that
5 discussion.

6 What I would like to make clear to DOE --
7 I'm sorry, what I'd like to make clear to the Board
8 is that in DOE's analysis of the igneous scenarios,
9 we not only -- what I'll say took out or pursued
10 away, assumed the failure of the drip shields, all
11 of the drip shields, in the event of an igneous
12 intrusion, but we also simultaneously assumed away
13 the waste packages. In other words, assumed failure
14 of all the waste packages. And the results of that
15 were included in our ultimate dose estimate and they
16 were documented in the TSPA analysis report. I have
17 to go back and find exactly the place in the
18 transcript where that subject came up. I must admit
19 to you I don't remember exactly what I said.
20 Hopefully, that will clarify matter if and when you
21 go back and look at that part of the transcript.

22 >> JUDGE RYERSON: Mr. Silverman, just to
23 clarify, those phenomenon are discounted in the TSPA
24 by virtue of the probability that they will occur; is
25 that correct?

1 >> MR. SILVERMAN: That is essentially
2 discounted. I'm not sure I used that word. I
3 understand what you are saying.

4 >> JUDGE RYERSON: In other words, the
5 effect of the overall calculation is diminished by
6 the likelihood that it will, in fact, occur?

7 >> MR. SILVERMAN: Absolutely, because the
8 legal standard is a mean dose based upon many, many
9 scenarios, weighted by the probability of occurrence
10 of those scenarios. And that's set forth in the
11 regulations, so you are correct.

12 >> JUDGE RYERSON: So it's very different
13 from simply saying there are no drip shields there.
14 There are no drip shields modified by the likelihood
15 there will be an effect?

16 >> MR. SILVERMAN: I believe that's
17 correct.

18 Then I would like to respond, do the best
19 I can to respond to Judge Wardwell's question. Bear
20 in mind, you are talking to a political science
21 major here, so I can only go so far. But your
22 question to us on the same contention was: Why
23 would DOE not want to know if 99 percent of the
24 protection of the REMI is provided by one component
25 or one barrier. And I'd like to take a shot at that

1 and basically would like to point out to you that we
2 think we have quantitatively demonstrated the
3 relative importance of the individual barriers and
4 we did that in almost 200 pages of the SAR in
5 Section 2.1.

6 The function of a barrier is to isolate
7 waste. That is, to reduce or prevent the movement
8 of water into the repository, into the waste, or the
9 movement of radionuclides through the system. Those
10 the processes, excuse me, those are the purposes of
11 the barrier.

12 >> JUDGE WARDWELL: What barrier ever
13 prevents the movement of water?

14 >> MR. SILVERMAN: Completely prevents the
15 movement of water?

16 I suspect the technical people would tell
17 me that no barrier completely prevents it.

18 >> JUDGE WARDWELL: So really, those two
19 words should be just reduced rather than reduce or
20 prevent? You were reading off a phrase that said, we
21 had multi-- we got barriers and they reduce or
22 prevent. But in fact, none of them prevent; is that
23 correct?

24 >> MR. SILVERMAN: I suspect that's
25 correct, so I think it would be fair to say reduce.

1 >> JUDGE WARDWELL: Thank you.

2 >> MR. SILVERMAN: The movement again of
3 water or radionuclides. So those are the purposes of
4 the individual barriers so we will say reduce the
5 remove the water and radionuclides. So our barrier
6 performance is quantified in those terms, not in
7 those of the contribution to the actual ultimate
8 dose.

9 The analysis was not intended nor is it
10 required to quantify the performance of each of the
11 individual barriers in terms of the fraction of dose
12 to the REMI that that barrier contributes.

13 So we demonstrate the performance of each
14 individual barrier again in terms of its
15 contribution of the isolation of waste. Our view is
16 that's all that's required and that's sufficient to
17 provide a sound basis for assessing barrier
18 capability. And the basis for that, the legal basis
19 for that is reflected in the regulations in Section
20 63.115 (c), which I will very briefly read from and,
21 again, those two pages of Federal Registry Notice
22 that I continue to refer back to that we spent so
23 much time on yesterday, but I'll refresh your memory
24 66 Federal Reg 55758 and 59. I'm not going to
25 re-read from that. But I will read to you in 63.115

1 (c), 63.115 is requirements for multiple barriers.

2 "Demonstration of compliance with 63.113
3 (a)," which is the multiple barrier requirement,
4 "must (c) provide, the technical basis for the
5 description of the capability of barriers identified
6 as important to waste isolation to isolate waste.
7 The technical basis" -- this is the key phrase.

8 "The technical basis for each barrier's
9 capability shall be based on and consistent with the
10 technical basis to the performance assessments used
11 to demonstrate compliance with 63.113 (b) and (c),"
12 which are the performance standards for the overall
13 barrier system.

14 In other words, what is done to meet the
15 multiple barrier standard should be the same
16 performance assessment used to determine compliance
17 with the ultimate dose standards. I hope that that
18 is clear and helps.

19 >> JUDGE MOORE: Thank you.

20 >> MR. SILVERMAN: Thank you.

21 >> JUDGE MOORE: All right. Once again --
22 oh, Staff.

23 >> MS. BUPP: The Staff has a brief
24 housekeeping question. With depositions starting in
25 a few weeks, we just wanted to check and make sure

1 that the comments from the parties regarding DOE's
2 statements for its LSN collection, if you had any
3 idea of when those would be due from the other
4 parties?

5 >> JUDGE MOORE: At this point I can't give
6 you a date, but if the material that Mr. Shebelskie
7 is going to provide the Board next Thursday, I would
8 imagine and it will have to be determined and we will
9 issue an Order the first of next week, that it will
10 be a reasonably short time for comment on anything
11 that DOE tells us.

12 >> MS. BUPP: Thank you, Your Honor.

13 >> JUDGE MOORE: Mr. Malsch.

14 >> MR. MALSCH: I would just like to
15 briefly observe that what you just heard from
16 Mr. Silverman is a re-argument of Issue No. 8,
17 dealing with defense indepth. I don't think I need
18 to respond in detail to what he said other than to
19 observe that we think the record is clear from the
20 argument yesterday.

21 >> JUDGE MOORE: I -- I believe it can be
22 characterized, as can all oral arguments, there are
23 three: The one you prepare to give, the one you
24 give, and the one you wish you gave. And I put this
25 into Category Three.

1 >> MR. MALSCH: Thank you.

2 >> JUDGE MOORE: Again, I would like to
3 thank counsel and we will stand adjourned. The Board
4 will now wrestle with issues 1 through 11.

5 (Whereupon, the Oral Argument conference is
6 adjourned)

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This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of U. S. Department of Energy High-Level Waste Repository, Docket No. 63-001, ASLBP No. 09-892-HLW CAB04 on January 26, 27, 2010, Las Vegas, Nevada, was held as herein appears, and that this is the Original Transcript thereof for the file at the U.S. Nuclear Regulatory Commission taken by Caption Reporters Inc., and that the transcript is a true and accurate record of the foregoing proceedings.

Lorraine Carter, RPR
Official Court Reporter