

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON NRC POINT PAPERS FOR DOE CONSULTATION
DRAFT OF SITE CHARACTERIZATION PLAN FOR YUCCA MOUNTAIN

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BRIEFING ON NRC POINT PAPERS FOR DOE CONSULTATION
DRAFT OF SITE CHARACTERIZATION
PLAN FOR YUCCA MOUNTAIN

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

WEDNESDAY, MAY 4, 1988

The Commission met in open session, pursuant to
notice, at 2:00 p.m., the Honorable LANDO W. ZECH, Chairman of
the Commission, presiding.

COMMISSIONERS PRESENT:

LANDO W. ZECH, Chairman of the Commission
FREDERICK M. BERNTHAL, Member of the Commission
KENNETH CARR, Member of the Commission
KENNETH ROGERS, Member of the Commission

1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2

3 S. Chilk

4 V. Stello

5 H. Thompson

6 R. Ballard

7 W. Parler

8 B.J. Youngblood

9 B. Browning

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P R O C E E D I N G S

[2:00 p.m.]

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen.

This afternoon, the Commission will be briefed by the Office of Nuclear Materials Safety and Safeguards on NRC's review of the Department of Energy's consultation draft site characterization plans for the Yucca Mountain site.

The Nuclear Waste Policy Act, as amended in 1987, requires the Department of Energy to develop a site characterization plan for a high level waste repository.

The consultation draft is a precursor to the statutory plan and is intended for review and comment by NRC and the State of Nevada as a way of addressing site characterization issues early on.

The Department of Energy issued their consultation draft site characterization plan in January 1988, and it is my understanding that the NRC staff has met twice with DOE regarding NRC concerns about the plan.

Today, the staff will outline those items in the plan which they feel DOE should address in the statutory plan. It's my understanding that the staff will formally transmit these point papers to DOE after this meeting.

The Commission would also be interested in a summary of current DOE plans to address the staff concerns. This is an information briefing and no formal Commission action is

1 anticipated.

2 Commissioner Roberts will not be with us this
3 afternoon. Do any of my fellow Commissioners have any opening
4 comments to make?

5 [No response.]

6 CHAIRMAN ZECH: If not, Mr. Stello, would you
7 proceed, please.

8 MR. STELLO: Thank you, Mr. Chairman. Just a couple
9 of quick points that I wanted to make. You have already
10 characterized the purpose of the meeting is to brief you on the
11 comments.

12 For those here, the comments are on the consultation
13 draft site characterization plan which you can see at the end
14 of the table is in excess of a foot of documents, and that's,
15 of course, backed up by literally file cabinets of additional
16 information.

17 We had a meeting with the Waste Management
18 Subcommittee, the new advisory committee on nuclear waste, to
19 acquaint them with the things that we think we're going to need
20 some work on, and they agreed to look at the comments.

21 They have, in fact, looked at them and they were
22 generally pleased and found that the staff's review was, in
23 fact, comprehensive and thorough, and concurred in the staff's
24 comments.

25 The last point I want to make is one of the key

1 issues we're concerned about is to make sure that we get
2 resolved the QA program issues before site characterization
3 starts, because that's very important since it will generate
4 data and information that will be used in making decisions, at
5 quite some time distant in the future, so that's pretty
6 important to get that straightened out.

7 I think we're making progress in that area as well,
8 but we're not there yet, but we are on our way. As a side
9 point, we have been having some discussion with the State of
10 Nevada who is obviously getting very involved in this issue,
11 and they have approached us in looking at a QA program for the
12 work that they, too, will do, and I think that's probably very
13 important since they have a considerable amount of money, and
14 we'll be talking about that this afternoon.

15 And we'll generate a lot of information which, again,
16 will be relied on and used in the process. So, I think that,
17 too, is important.

18 With that, I'll ask Hugh Thompson to introduce the
19 others at the table and jump right into the briefing.

20 CHAIRMAN ZECH: All right. Thank you very much.

21 MR. THOMPSON: Thank you, Mr. Stello. Mr. Chairman
22 and Commissioners, as you know, Bob Browning, who is the
23 Division Director for the high level waste program, is here
24 today; and, Joe Youngblood, who is the Chief, Branch Chief, of
25 the projects, who is the individual who is responsible for the

1 coordination of the effort and having the review conducted,
2 will be doing the briefing for the Commission today.

3 A couple of points that I wanted to highlight, and I
4 thought were very important in the staff's review, is, first
5 off, that the review was done within the budget that the
6 Commission had given us to do the site characterization, draft
7 site characterization plan review.

8 We've taken about six FTEs. They involved a
9 multiple-disciplinary team with some contractor support, but it
10 was a very aggressive on our part to be able to meet in the
11 timeframe that had been established in getting initial comments
12 out on the program review, interfacing with the states and with
13 the DOE and the various workshops, and has been a very, I
14 think, successful review in my opinion.

15 One of the key areas that we did is that we did a two
16 week acceptance review to make sure that the document that we
17 were planning this time and effort on was one that had been
18 adequately prepared by DOE in order for us to do that.

19 In the review, we did find that there had been
20 sections and information that was not available for us to do
21 our review.

22 That if it had been the formal submittal, that we
23 would have not been able to find it acceptable to start a
24 review.

25 Just, information was missing, and we pointed this

1 out to DOE and I think they recognized that when they do come
2 in with the site characterization plan, they intend to have all
3 the type of information that we need.

4 Secondly, we did our initial review and provided the
5 comments, staff comments, to DOE about six weeks after we
6 started the effort.

7 We have found that those comments through the
8 workshops have not made significant changes. So any interface
9 that we had with ACRS -- so pending any guidance that we get
10 from the Commission, I think we will be ready to finalize our
11 comments to DOE in a couple of weeks.

12 So, with that, Joe, if you could start the detailed
13 briefing today.

14 MR. YOUNGBLOOD: The first slide is basically the
15 cover slide introducing the fact that we're briefing on the
16 point papers today on the consultation draft site
17 characterization plan for Yucca Mountain on Nye County Nevada.

18 [Slide.]

19 MR. YOUNGBLOOD: I have three or four photographs
20 that I would like to show before we go on to the main briefing
21 slides.

22 [Slide.]

23 MR. YOUNGBLOOD: This shows the view from the south.
24 The site is around approximately 100 miles northwest of Los
25 Vegas. And this shows the Nevada test site there.

1 This ridge running along there is Yucca Mountain. I
2 will have a view from the north, looking south, in the next
3 slide, but that's where the site is located.

4 Here's Crater Flats and some of these are the
5 volcanic combs in that area that are estimated to be around
6 20,000 years old. Some of this land over in this area is
7 controlled by Nellis Air Force Base and the Bureau of Land
8 Management.

9 And the other area in there covering about this area
10 is the Nevada test site.

11 [Slide.]

12 MR. YOUNGBLOOD: The next slide which is a view from
13 the opposite direction. As you see down the middle of the
14 slide, the ridge there is Yucca Mountain; to the right is
15 Solitario Canyon; I believe in the far background, it may be
16 just off the slide there now, but you can see the combs in the
17 background there.

18 I guess you can see it. Yes, the little comb back
19 there. To the left of the site, of the ridge, is where the
20 site actually will be located, and I presume the area is about
21 on the test site there, it runs in an area along about there, I
22 believe. Maybe somewhat further north than that.

23 Now, the direction that the arrow is pointing will be
24 the direction that next picture will be focusing on. You'll be
25 looking into the ridge from that direction, and this is an

1 artist's conception of the repository.

2 [Slide.]

3 MR. YOUNGBLOOD: In the lower center of the picture,
4 this is the central storage and handling area that would be
5 used for handling of waste and processing materials, and so
6 forth.

7 It shows a ramp that would be used to transport waste
8 from the handling area into the repository. There's a ramp
9 that runs in this direction, that hauls all of the tough
10 material removed from the repository, excavated, and stacked
11 over in this area.

12 The upper left hand corner here shows actually the
13 underground repository area. There are four shafts that enter
14 the area there. I'm not for sure we can see all four of them.

15 There's one, of course, right there. There's a shaft
16 right at this location which you can't see very well.

17 And then there are two shafts over the far left, even
18 further than I can -- I guess I could turn the arrow around
19 here somewhere and point to it from that direction.

20 There are two shafts together right there. The next
21 slide will show focus right in that area that I'm at right now.

22 [Slide.]

23 MR. YOUNGBLOOD: This is another artist's conception
24 of a cutaway of the area. That would be exploratory shaft one,
25 and exploratory shaft two. Exploratory shaft two goes down to

1 the repository area.

2 Of course, up above are the head-in facilities for
3 handling the material and equipment and man and so forth that
4 would be utilized during the exploratory stage of the shafts.

5 Exploratory shaft one is projected -- was originally
6 projected to go through this area in here which contains the
7 Calico Hills unit which is a natural barrier to the saturated
8 zone below the repository, which is down in this area.

9 Of course, this is the repository area here up above
10 in the tuft, which is an unsaturated zone. I do have an
11 exhibit that shows some rocks that are typical of the tuft
12 area.

13 [Slide.]

14 MR. YOUNGBLOOD: The cylindrical core is the typical
15 method of obtaining subsurface rock samples. The core is a
16 segment of the welded tuft which was removed from the site, and
17 the rock or repository is in the welded tuft area.

18 Samples such as these core samples are used to
19 identify the rock composition, porosity, permeability, moisture
20 content, and faulting at depth.

21 The rock sample is a piece of welded tuft that is
22 found frequently around the site area. It shows the typical
23 secondary deposits in the premises and the cracked areas on the
24 side there.

25 Wayne, if you'd turn that up. Yes, see, you can see

1 some of the deposits there that -- mineral deposits from
2 solutions that flow through these fissures.

3 Also, I have a small sample here of tuft that I can
4 pass around the table if people would like to see it.

5 COMMISSIONER BERNTHAL: Can you pass those two
6 around?

7 MR. YOUNGBLOOD: Yes, we can pass those. We can pull
8 those out and pass them around right now.

9 MR. BROWNING: I think as Mr. Youngblood gets into
10 the description of our comments, one of the key things that
11 useful to keep in mind is the initial exploratory work, namely
12 sinking two shafts, getting down to depth, and looking at
13 what's going on down at depth, and looking, as you go down,
14 will end up being part of the repository.

15 Therefore, it's extremely important that before it's
16 done, it be very, very carefully thought out as to how it's
17 being done, how you can learn from it, so that you don't
18 inadvertantly louse up the site as part of your characterizing
19 the site.

20 And you don't inadvertantly preclude your ability to
21 get important data because of the way you sunk those shafts and
22 the way you got down there to start looking.

23 It's a unique kind of thing. It's not a typical
24 mining operation. It's beginning -- the actual facility that's
25 going to have to last for 10,000 years, and which we and DOE

1 will have to make performance predictions over extremely long
2 periods of time. It's very important to keep that in mind.

3 COMMISSIONER BERNTHAL: What exactly is the
4 geological origin of this? I know it's volcanic, but is it
5 essentially volcanic dust and ash that's been metamorphosed
6 partially?

7 MR. YOUNGBLOOD: That is welded tuft there. Yes,
8 that's the ash that's been welded.

9 COMMISSIONER BERNTHAL: Welded and then
10 metamorphosed, right?

11 MR. BROWNING: Because of heat and pressure.

12 MR. YOUNGBLOOD: Yes. All of those shafts have, I
13 believe, a 12 foot diameter opening on them. I don't know if
14 some of them will be larger than that or not on the ramp, but
15 generally, it's a 12 foot opening on all of those shafts and
16 ramps.

17 [Slide.]

18 MR. YOUNGBLOOD: The first slide that I have is a
19 basic outline of the discussion. I plan to give the purpose of
20 the content of the site characterization plan and a chronology
21 of our review of the CDSCP, a brief discussion of the point
22 paper, and the objections that were raised with regard to the
23 point paper, and then I'll finish up by talking about some of
24 the near term site characterization activities and the SCP.

25 [Slide.]

1 MR. YOUNGBLOOD: The second slice, as I indicated,
2 discusses the purpose which is basically for DOE to present the
3 program to evaluate the suitability of a site for a geological
4 repository and support the license application.

5 The contents include the plans for site
6 characterization activities and a description of waste farming
7 packaging, and the conceptual design of the repository.

8 The level of detail in the site characterization plan
9 briefly discusses the investigations plan. Further details
10 with regard to the investigations are incorporated in separate
11 documentation in their state plans.

12 And even more detailed information beyond the study
13 plans will be incorporated and their test procedures, which are
14 even provided separately from the study plans.

15 The CDSCP itself was not required by NEPA -- NWPA,
16 not NEPA, and 10 CRF 60. It was issued by DOE to get an early
17 input from NRC and the state of Nevada in order for them to
18 consider our comments in the development of the statutory SCP.

19 CHAIRMAN ZECH: What's the level of the state
20 participation in the review of the site characterization plan
21 so far?

22 MR. YOUNGBLOOD: The state attended the first two
23 workshops that were held. The third workshop, they fairly well
24 participated in that workshop. Their position has been that
25 they don't believe that they could do a good review of the site

1 characterization plan without having the study plans, which go
2 into far greater detail.

3 CHAIRMAN ZECH: But they're being kept informed of --

4 MR. YOUNGBLOOD: They are being kept informed, yes.

5 CHAIRMAN ZECH: -- of all the actions going on.

6 MR. YOUNGBLOOD: Yes.

7 CHAIRMAN ZECH: All right. Thank you.

8 MR. THOMPSON: But I think Joe's comment was in the
9 last workshop, they did participate at a level of -- in more
10 detail than they did on the earlier ones, which I think was a
11 good sign, at least to me.

12 MR. YOUNGBLOOD: They had quite a few people that
13 were familiar with the alternative models concept that we
14 discussed.

15 CHAIRMAN ZECH: Very good.

16 MR. YOUNGBLOOD: They did participate in that. The
17 fact is, that was one of our better technical exchange meetings
18 that we had with DOE and I understand the state was quite happy
19 with the technical exchange that was held during that meeting
20 also.

21 CHAIRMAN ZECH: Good.

22 [Slide.]

23 MR. YOUNGBLOOD: The next slide briefly discusses the
24 chronology of the staff review. DOE did issue the CDSCP, in
25 January of '88. We did perform the acceptance review which Mr.

1 Thompson mentioned.

2 There were a couple of items missing from it that the
3 staff believes they could not produce a site characterization
4 analysis within a six months timeframe if that information were
5 missing from the statutory SCP.

6 DOE has provided that information to us in the
7 meantime.

8 CHAIRMAN ZECH: They provided the information on the
9 objections and comments you had?

10 MR. YOUNGBLOOD: No, no. They've not done all of
11 that, yet. The conceptual design review information was not
12 with the document when we received it, and performance analysis
13 was not in the document when we received it.

14 CHAIRMAN ZECH: They committed to --

15 MR. YOUNGBLOOD: They've already -- they furnished
16 them to us now, but --

17 MR. THOMPSON: We did an acceptance review which
18 says, do you have the information available for us to do our
19 review. We have gotten that information now, such that we
20 completed our review.

21 We still have, and we'll talk about, some of our
22 concerns, objections, and questions, which is a different thing
23 -- will be addressed in the next slide.

24 CHAIRMAN ZECH: All right.

25 MR. YOUNGBLOOD: As we indicated, there were a series

1 of workshops that were presented. The first workshop was of a
2 preliminary session.

3 DOE gave an explanation of the CDSCP to the staff in
4 the state of Nevada. Of course, after we issued our draft
5 comments in early March, we had planned another workshop which
6 was held the week of March the 21st.

7 This was basically to discuss the overall point
8 papers and assure ourselves that DOE and NRC had a better
9 understanding of our concerns.

10 A workshop was held in April to discuss the
11 alternative conceptual models. That was held in Las Vegas, of
12 course.

13 The state did participate in that. They had quite a
14 few of their people there that had thoughts about alternative
15 conceptual models.

16 Mr. Shemansky presented his conceptual model of the
17 site one afternoon during this workshop. As a result of these
18 workshops, there have been a number of technical meetings that
19 have been proposed to be held over the next several months.

20 They have not at this time been scheduled. We did
21 meet with the ACRS Subcommittee, or the ACMW Committee, on the
22 28th of April.

23 I believe they concurred in the comments that we
24 gave. They did request that our cover letter include a
25 categorization or subcategories of some of the comments since

1 that.

2 There were about 108 comments, and they weren't
3 broken out neatly into discrete packages.

4 CHAIRMAN ZECH: It's my understanding that the ACRS
5 Subcommittee, or the New Waste Committee, I'm not sure which
6 one, maybe both, raised some concerns on the plan.

7 Is that what you're talking about?

8 MR. YOUNGBLOOD: No, sir. They just suggested --
9 they had no problem with the concerns and the comments that we
10 made, but they just recommended that the 108 comments, that we
11 break those down into categories so that you could determine
12 which of them involved QA, which of involved lack of
13 conservatism.

14 CHAIRMAN ZECH: You're looking at those comments,
15 though, I presume.

16 MR. YOUNGBLOOD: Yes.

17 CHAIRMAN ZECH: You'll be able to address them --

18 MR. YOUNGBLOOD: We can handle that easily enough in
19 our cover letter.

20 CHAIRMAN ZECH: Fine. I think it's important that
21 you have a close relationship with the ACRS, the New Waste
22 Committee in particular, and be sure that they're informed on
23 everything you're doing, and give them an opportunity to
24 comment.

25 I think that's pretty important that you do that.

1 MR. YOUNGBLOOD: I think they've been very helpful to
2 us.

3 CHAIRMAN ZECH: Good.

4 MR. YOUNGBLOOD: We've had a pretty good working
5 relationship with them.

6 [Slide.]

7 MR. YOUNGBLOOD: The next slide is the detail of the
8 point papers. Actually, our concerns were broken into three
9 levels, and, as I discuss this, you may understand more where
10 the ACRS Subcommittee was coming from.

11 Our concerns are broken into -- I hesitate to call
12 them three levels, because they're not necessarily levels. The
13 first group, we called objections.

14 And the definition of the objection was that the
15 staff would recommend that DOE not start work prior to
16 resolution.

17 If there were any potential adverse effects on the
18 repository performance, significant and irreversible or
19 unmitigatable effects on the characterization that would
20 physically preclude obtaining information necessary for
21 licensing, or if there were fundamental inadequacies in the
22 quality assurance program.

23 The comments were defined to be concerns that would
24 result in a significant adverse effect on the licensing if not
25 resolved, which would not cause irreplaceable damage if site

1 characterization started before the resolution.

2 And, of course, the questions were associated mostly
3 with missing information, or inconsistencies, or ambiguities in
4 the information.

5 Actually, the final point papers as we generally have
6 all of those completed at this time, we don't have the overall
7 cover letter completed on it. We don't really have any
8 significant changes from the draft point papers which we
9 transmitted on March the 7th.

10 MR. THOMPSON: I think objections were things that
11 are near term, things that need to be addressed before they
12 start the site characterization activities.

13 Comments, though, they may be just as important in
14 the long term, don't have the timeliness for resolution, then
15 we have more time to address those.

16 And that's the area that ACRS wanted us to make sure
17 we identified those comments that were significant with respect
18 to the licensing and regulatory considerations, which would be
19 just as important in the long term, so that's the issue I think
20 we're addressing with the ACRS.

21 CHAIRMAN ZECH: Has DOE expressed a willingness to
22 respond to your objections, your comments, your concerns?

23 MR. YOUNGBLOOD: Yes, sir.

24 MR. THOMPSON: They have felt that the workshops, the
25 efforts we've done, the interactions we had, have been very

1 useful to them. Certainly my discussions with Ed Kay have led
2 me to believe that they are prepared to work with them and to
3 address these concerns.

4 CHAIRMAN ZECH: In your comments, and perhaps ACRS
5 made the same comment, I'm not sure, but on prioritization,
6 have you made an attempt to prioritize your comments?

7 It sounds like, perhaps, you've got objections that
8 are in one category, and then your comments, another. Have you
9 tried to prioritize the comments?

10 MR. THOMPSON: Well, I think, Joe, you might want to
11 address it. My sense is the objections are the top priority
12 because they have the timeliness of that.

13 CHAIRMAN ZECH: How about the others? What do you
14 have, 108 of them, or so?

15 MR. THOMPSON: 108 on the comments are the ones that
16 we're now categorizing such --

17 CHAIRMAN ZECH: And prioritizing them, too?

18 MR. YOUNGBLOOD: We're rather reluctant to prioritize
19 them because it depends upon their resolution as to whether
20 they turn out to be more significant or less significant,
21 although we will characterize, as the next slide indicates, it
22 lists the five objections.

23 [Slide.]

24 MR. YOUNGBLOOD: And the 108 or so comments that we
25 have, they cut across all of the technical areas. Three of

1 those comments address DOE positions that appear to be
2 inconsistent with the regulatory requirements.

3 These positions may result in DOE not having the
4 information needed at the time of the licensing application.

5 CHAIRMAN ZECH: But is that being -- your work in
6 that, is that being resolved?

7 MR. YOUNGBLOOD: Yes. Those are -- we're working
8 with them to resolve --

9 CHAIRMAN ZECH: Right.

10 MR. YOUNGBLOOD: But we also highlighted them in our
11 initial letter. We will continue to highlight them in this
12 letter.

13 CHAIRMAN ZECH: Okay.

14 MR. YOUNGBLOOD: And we'll break out some other
15 categories in the letter, too. But those three that fit in
16 that category were substantially complete containment, lack of
17 information on the performance confirmation program, and in
18 situ testing to evaluate seals.

19 COMMISSIONER BERNTHAL: Has DOE ever run a program,
20 at least in recent years, that requires the kind of careful
21 attention to quality assurance that this thing is going to
22 require, both as to documentation and organization, other
23 aspects.

24 In other words, we have seen TBA stumble badly when
25 they had a regulation in front of them, and knew very well, or

1 should have know, what was required.

2 Does DOE have experience in setting up that kind of a
3 detailed quality assurance program? That's my question.

4 I imagine there are certain areas of the defense
5 program where there might, but I am not sure how good the
6 cross-talk is there.

7 MR. THOMPSON: Well, I don't know if we've got any
8 familiarity with the DOE programs. Certainly in our
9 interaction, DOE has made lots of commitments to set up a
10 program. They did set up a small part of the testing for the
11 iodine up at the Hanford site that I think we had reviewed and
12 felt was acceptable, but something on the magnitude of this
13 whole program I don't believe they have that type of
14 experience, and that's why we have a fairly strong commitment
15 that they need to address the QA program.

16 DOE recently reorganized, and maybe when Ed Kay comes
17 to speak to the Commission later on, I think this month, that
18 may be something you would like to explore with him, because
19 have recognized their needs to focus on the QA program both at
20 headquarters, at the field and at their contractors. They have
21 a number of contractors in various areas that we are looking at
22 and they recognize that there is a lot of work to be done in
23 that area. So it is one that we are participating in the
24 audits programs, so that we can provide them as much of our
25 learning from the reactor side as we can, but it is going to be

1 a challenge I think for DOE to do this, and we keep emphasizing
2 that.

3 I know Mr. Stello, when he went out and met with
4 officials out there, emphasized it. I have emphasized it when
5 we've been out there and we are doing everything we can because
6 of that issue, but it's not that easy to do and this is a new
7 area for us.

8 MR. STELLO: I think the big problem is it's new.
9 It's not the usual way for constructing a building and device.
10 All the theologies of how do you construct and make sure you
11 are collecting, going about getting the data -- but I think
12 everyone understands how important it is. I think it will take
13 some time but it will come.

14 CHAIRMAN ZECH: Let's proceed, please.

15 [Slide.]

16 MR. YOUNGBLOOD: Slide No. 6 indicates that the first
17 objection is associated with the performance allocation process
18 and CDSCP does not directly address the investigations that
19 would be needed to characterize the site with respect to the
20 full range of alternative conceptual models and the associated
21 boundary conditions that are consistent with the existing data.

22 An important consequence is that without identifying
23 all of the potentially significant investigations, it cannot be
24 determined whether conducting an investigation would interfere
25 with -- possibly to the point of precluding the conducting of

1 another investigation needed to obtain the information for
2 licensing.

3 In addition, the program may favor providing data
4 that confirmed a preferred model and the boundary conditions,
5 rather than the data needed to determine what the preferred
6 model and boundary conditions should be.

7 As I indicated, we did have a good exchange at the
8 workshop in April and a discussion of the alternative
9 conceptual models, and the staff recommended that DOE include a
10 series of tables within the SCP that is integrated across the
11 various disciplines that focus on the performance objectives of
12 10 CFR 60. This discipline approach would give added
13 confidence that the appropriate investigations were being made
14 and considered appropriately and prioritized.

15 [Slide.]

16 The next objection is associated basically with the
17 quality assurance program. The CDSCP references a number of QA
18 plans and procedures for DOE and its prime contractors, many of
19 which are undergoing potentially significant revisions or which
20 have outstanding staff or review comments or which have not
21 undergone staff review.

22 Based on the staff reviews to date, they do not fully
23 comply with the NRC's QA criteria. Obviously, the data
24 collected by such procedures might be suspect and difficult to
25 use in the licensing process. DOE plans to meet with us later

1 on this month to discuss their plans for submitting their QA
2 programs to us. We only have had one of their programs
3 submitted to us formally. We will need a program by two of the
4 offices -- DOE offices -- plus programs for each of their prime
5 contractors. There are about six or seven of the prime
6 contractors that we will need programs from.

7 As I indicated, they plan to meet with us some time
8 during this month to discuss their schedule for submitting
9 those plans to us and to discuss the staff's outstanding
10 comments.

11 In order to complete the acceptance of the QA
12 program, DOE will have to perform quite a number of audits of
13 their own, as well as the staff will have to perform some
14 audits to have confidence that the program is being
15 appropriately implemented.

16 [Slide.]

17 The next three objections -- I will start with
18 Objection 3. All three of these are associated with the
19 exploratory shaft. The first one is associated with the depth
20 of the exploratory shaft No. 1, which has been proposed to be
21 approximately 400 feet below the proposed repository horizon
22 into the Zeolitic zone of the Calico Hills unit, and DOE hasn't
23 established the basis or the need for these tests that would
24 require drifting after it pierces through the Calico Hills
25 barrier.

1 COMMISSIONER BERNTHAL: Would require what, did you
2 say?

3 MR. YOUNGBLOOD: Piercing through the Calico --
4 drifting? Horizontal tunneling. After they go below the
5 Calico Hills barrier, then if they go in a horizontal
6 direction, that is drifting.

7 MR. THOMPSON: Just a mining term. Nothing special.

8 [Laughter.]

9 MR. YOUNGBLOOD: DOE notified us I believe yesterday
10 informally that at this point in time they had performed a
11 review of penetrating the Calico Hills barrier and their
12 position at this point in time is that they will not penetrate
13 that barrier. They are going to look at alternative methods,
14 exploring that area with bore holes and various other
15 techniques.

16 COMMISSIONER BERNTHAL: Why is it such a source of
17 concern if you punch a hole? I don't even know what diameter
18 particularly --

19 MR. BROWNING: Twenty feet in diameter. This
20 particular one would be 12 feet.

21 COMMISSIONER BERNTHAL: But you can't do what you
22 need to do with bore holes much smaller than that?

23 MR. YOUNGBLOOD: This is why they are reconsidering
24 it and saying that their presently proposed position is that
25 they will not go through that barrier.

1 COMMISSIONER BERNTHAL: But even if they punch a hole
2 in the barrier, 20 feet I've got to admit becomes a bigger
3 engineering problem, but suppose they punch a hole in the
4 barrier three feet in diameter. I guess it would give me some
5 concern to think that the integrity of the entire project might
6 rest on your having or not having such a hole and apparently on
7 your ability to seal or not seal it adequately if you did punch
8 a hole like that. Now why is that such an engineering problem?

9 MR. BROWNING: It may not be. We just asked the
10 question why are they doing it. It wasn't clearly explained in
11 the draft SCP as to what the purpose of sinking such a large
12 diameter hole through what at this stage is perceived to be a
13 very important barrier to radionuclide migration. I mean on
14 the one hand they are making the case that the groundwater, if
15 groundwater does get into the repository and does leach
16 radionuclides out, then you would be counting on this Calico
17 Hills tough layer to retard the radionuclides before they get
18 to the groundwater. Once it gets to groundwater, it moves very
19 rapidly.

20 COMMISSIONER CARR: Relatively.

21 MR. BROWNING: Relatively, but well within 1000
22 years, okay? We have a requirement that the pre-emplacement
23 groundwater travel time be less than a thousand years -- or
24 greater than 1000 years, rather, and the present conceptual
25 understanding of the site says that that groundwater moves

1 rather rapidly. I also saw a picture, and the present
2 conceptual idea is that the groundwater moves towards that
3 desert area, so you have to take the whole thing in the total
4 perspective.

5 COMMISSIONER BERNTHAL: But as a matter of principle,
6 I understand what you're saying, but why is it such a delicate
7 process? That is what troubles me a little bit. Is it such a
8 delicate process? Supposedly you can't punch a three foot or
9 six foot or perhaps, even a 12 foot diameter shaft and rely on
10 standard engineering techniques to close it up after you have
11 done that, if you find that you need to do it. Otherwise you
12 are in a bit of a Catch-22. You can't poke a hole to
13 characterize it or you can't learn what you need to without
14 doing that, and if you do it somehow you have compromised the
15 project.

16 MR. BROWNING: But if there is a way to understand it
17 without punching a large diameter hole, at least at this stage
18 of the understanding of the site it would be prudent to think
19 very carefully about that before you go do it. That's all I
20 was saying.

21

22 They may very well conclude and we may agree that you
23 have to do that. That is part of the resolution process. The
24 resolution process is now underway. It doesn't necessarily
25 mean that they will or they won't. All we've got is tentative

1 word. They have looked at that one and it looks now they are
2 questioning themselves whether they really want to do that or
3 not.

4 COMMISSIONER CARR: They have got a lot more
5 experience in drilling holes in this area than we have. Where
6 do we get our expertise to attend a design review meeting and
7 make proper comments.

8 MR. BROWNING: We do have in-house experts in this
9 area.

10 COMMISSIONER CARR: That have gone out there and
11 drilled tunnels in Yucca Flats?

12 MR. BROWNING: Not at Yucca Flats but at the WHPPS
13 site, for example. We have both in-house expertise and could
14 contract out for some technical support.

15 COMMISSIONER CARR: The mining guys say it is a piece
16 of cake, there's no problem with drilling these holes.

17 MR. BROWNING: That is because they are thinking in
18 terms of normal mining and drilling. They do not stop to think
19 about what is going to happen over the next 10,000 years. That
20 is out of their frame of reference and it may or may not be
21 important.

22 COMMISSIONER CARR: How many experts have you got
23 that will do the design review? It says we are going to
24 participate in the design review. Are we going to contract
25 that or are we going to do it in-house?

1 MR. BROWNING: No, we'll have at least one in-house
2 expert, if not two go plus some outside contractual support.

3 MR. YOUNGBLOOD: When they have their design review
4 meetings, we are ordinarily observers at the design review
5 meeting. In this case, we wanted to tell the designers what
6 our concerns were just so that they would be aware of them and
7 take them into consideration.

8 COMMISSIONER CARR: Well, I'm a little bit concerned
9 that we are going to be participants in this, so automatically
10 we are going to bless it. I mean, we are participants in the
11 review of the design, so when it gets here --

12 MR. YOUNGBLOOD: Actually, we will not concur --

13 COMMISSIONER CARR: Not license something we
14 participated in the design of, I guess, is what I am worried
15 about.

16 MR. YOUNGBLOOD: We want to make some comments and
17 ask them to justify their position. We haven't told them not
18 to go through Calico Hills. We've asked them to please justify
19 to us what their position is with regard to going through
20 Calico Hills.

21 MR. STELLO: Let me see if I can help straighten it
22 out. There is no question that the people know how to dig a
23 hole in the ground. That is not a problem. It is, do you
24 really need to dig that hole that big, and if you do, are you
25 sure that's the right way to go about it? And second, if you

1 are going to do it, are really confident that you know how to
2 seal that back up and that that seal will in fact last for
3 10,000 years?

4 COMMISSIONER BERNTHAL: That is the question I asked.

5 MR. STELLO: That is the real heart of the matter.

6 COMMISSIONER CARR: What I worry about is their
7 expertise in recognizing whether their answer is accurate or
8 not.

9 MR. STELLO: I think that is an issue for them and
10 for us, their experts as well as ours. That is getting close
11 to, almost on this side of imponderable, a very, very difficult
12 judgment call when you are asking -- if you did, in fact, sink
13 that shaft, can you, in fact, devise a seal that will last for
14 10,000 years. We need to answer that question. They do. We
15 do -- but them first.

16 CHAIRMAN ZECH: Let's proceed.

17 [Slide.]

18 MR. YOUNGBLOOD: Objection No. 4 is also associated
19 with the shaft. The CDSCP does not include adequate and
20 consistent conceptual design information on the proposed
21 exploratory shaft facility.

22 This does not allow the evaluation of the potential
23 interference of proposed investigations with each other, and
24 with the interference of construction operations in the two
25 shafts and long drifts with these investigations.

1 As indicated, the staff will be attending their
2 design review meeting and will be making a short presentation
3 at that design review meeting just to explain what our concerns
4 are so that they can respond to our concerns and justify
5 whatever positions they want to take.

6 There will also be a meeting in June to talk about
7 all of the over-all exploratory shaft details with regard to
8 all of our comments associated with those.

9 [Slide.]

10 The last objection that we have listed is the
11 location of the exploratory shafts 1 and 2. The CDSCP does not
12 adequately consider the potential adverse impacts resulting
13 from the proposed location of these two shafts, as well as
14 other shafts from ramp portals which are in the area, that may
15 be susceptible to surface water infiltration.

16 I have a photograph which, hopefully, we can tell
17 more or less what we're talking about with regard to the
18 location of the exploratory shafts.

19 [Slide.]

20 This is Coyote Wash, looking northwest toward Yucca
21 Mountain. The wash runs right up this roadway, the low point
22 of the wash. Exploratory shafts 1 and 2 are located right in
23 this area, right at the neck of the wash, at the bottom of the
24 wash, which certainly is in the worst possible position with
25 regard to flooding and the inundation of the shaft.

1 This was discussed with DOE, and in April of 1987 DOE
2 says: Well, yeah, we can move that shaft around. It'll be up
3 to about the same depth along about here, if we move it around
4 the edge of the ridge there.

5 And we said: That's perfectly okay with us. Please
6 give us how you justify that with probable maximum flood, and
7 is there apt to be any inundation during site exploration.
8 Obviously, in 10,000 years this area may change somewhat.

9 They have not completed that analysis at this point
10 in time. We are still talking with them about it, and DOE is
11 contemplating: Well, the drainage divide is over in this area.
12 If there's no real difficulty with it, we'll talk with our
13 mining engineers and see if, hey, we can move the shafts around
14 there. Then there's no problem with margin of error with
15 regard to calculations of probable maximum floods and whether
16 it might inundate the shafts.

17 COMMISSIONER CARR: How much water are you worried
18 about getting into the shaft? This is going to be a fluid
19 drilling, I assume.

20 MR. YOUNGBLOOD: No, sir.

21 COMMISSIONER CARR: Dry all the time?

22 MR. YOUNGBLOOD: There will be some liquid in there,
23 but it's going to be drill and blast, basically, to keep the
24 liquid down, because this is going through an unsaturated zone.
25 And if you put large amounts of water in it you won't be able

1 to test the materials that need to be done.

2 MR. BROWNING: This is another example. It's not
3 just sinking a shaft to get down there. It's sinking a shaft
4 that you've got to study the geography and the layers as you go
5 down.

6 MR. YOUNGBLOOD: It's mapped as they go down.

7 MR. BROWNING: They have selected a technique which
8 doesn't -- I mean, it does have water.

9 COMMISSIONER CARR: It's bound to.

10 MR. BROWNING: They use water to keep the dust down,
11 and that kind of thing. It's not like, for example, the
12 approach they were going to use at the Hanford site. It's
13 different from that.

14 COMMISSIONER CARR: But it's going to use some water.

15 MR. BROWNING: Yes. And my impression is that this
16 is the kind of example where, yes, you take somebody who knows
17 how to sink shafts from mining operations. They normally would
18 put it in a wash. It's easier to get to.

19 But it doesn't take into account the long-term
20 concern. You can engineer around to make sure water doesn't
21 get in while you're operating the mine. But the question is
22 what happens over this 10,000 year timeframe, where the
23 engineering things disintegrate, and over a long period of time
24 you would just as soon have it located, I think, in such a way
25 where you minimize that potential.

1 On the other hand, they may do analyses which show
2 it's all right.

3 COMMISSIONER CARR: I worry about 10,000 years. That
4 wash may well shift on you.

5 MR. BROWNING: That's true, also. And erosion is one
6 of the considerations that you have to take into account, and
7 you have to deal with it.

8 MR. YOUNGBLOOD: They projected it could be up to 10
9 meters of the road.

10 MR. BROWNING: It's something that's never been done
11 before, so you can't just go use conventional mining approaches
12 without having carefully thought about what the implications
13 are for the licensing hearing that's going to be related to do
14 we know how to predict how this thing is going to last for
15 10,000 years. You've got to start thinking about that now.

16 COMMISSIONER CARR: That's why I'm worried.

17 MR. BROWNING: That's why we're worrying about it
18 now.

19 [Slide.]

20 MR. YOUNGBLOOD: Slide 11 is a brief summary of the
21 SCP and near-term site characterization milestone. DOE plans
22 to submit the statutory SCP in January 1989. After that has
23 been issued, they will receive public comments and hold
24 hearings on the SCP.

25 We are committed to give our comments on the shaft

1 within 90 days of the issuance of the SCP, which would be
2 approximately April of 1989. DOE would start the shaft after
3 considering the NRC comments, and this would be approximately
4 about 6 months later, as they are scheduling it at this point
5 in time.

6 Also, the issuance of our site characterization
7 analysis would be due at that same time in July of 1989.

8 COMMISSIONER CARR: Do you see any problems in
9 meeting those 90 days and 6 months dates?

10 MR. YOUNGBLOOD: It depends upon the completeness of
11 what is presented to us. If they respond thoroughly to our
12 comments and adequately, that will make a difference.
13 Certainly, it's pushing the staff.

14 MR. THOMPSON: I guess I would say the QA program is
15 the real key in being able to meet these dates, because DOE
16 wants to start some of the site characterization, the head
17 works, you know, for the exploratory shaft in, I believe, in a
18 January timeframe.

19 So, they're going to need to submit the QA program,
20 at least as it relates to those aspects, very soon in order to
21 provide enough time to interact and interchange --

22 MR. YOUNGBLOOD: I guess the head end facilities
23 probably wouldn't involve much QA, but the sinking of the
24 shafts themselves would.

25 COMMISSIONER CARR: I guess what I'm really asking,

1 is this complete enough that you can have most of this work
2 done by January '89? Or, are you going to start when you see
3 the final SCP?

4 MR. BROWNING: The resolution of the comments we've
5 raised can go on in parallel with this, and has to in order to
6 make sure these dates can be met.

7 COMMISSIONER CARR: So you don't expect the SCP in
8 January '89 to be a surprise, then.

9 MR. BROWNING: We certainly hope not. If it is,
10 there's a problem.

11 MR. THOMPSON: But that's the purpose of the
12 workshops that we've been having ongoing and to maintain a
13 dialogue with them, is to have a plan to address these so that
14 we don't have surprises. That's the intent that we have over
15 the next 6 months or so, to certainly make sure they understand
16 the comments in sufficient detail and have resolution of those
17 and understand what our concerns are. So that, when January
18 '89 comes, then there's a high probability that we'll be able
19 to do our review in the timeframe that's needed.

20 COMMISSIONER CARR: My understanding was that it took
21 us how long to review the draft?

22 MR. THOMPSON: Six weeks.

23 COMMISSIONER CARR: And you didn't review the whole
24 set of books probably.

25 MR. BROWNING: Well, not in the same degree of

1 detail. But by picking and choosing what we thought was
2 important, we were able to do a comprehensive coverage of this.

3 COMMISSIONER CARR: Okay. Let the record show --

4 MR. BROWNING: I think it's fair to say that in the
5 pre-licensing process we've had underway, as we've been
6 reporting to you on a quarterly basis, the whole approach is to
7 raise issues early and try to make sure they're getting
8 resolved. My perception is that we've been a lot better
9 collectively at raising issues than we've been at getting them
10 resolved.

11 And this is now a real test period to see whether
12 collectively -- DOE's got to do a major part of that. We can
13 only raise the issue. We can't resolve it. But we can work
14 cooperatively and try to make sure they are getting resolved on
15 a tight timeframe.

16 I think that the major uncertainty is, are they going
17 to be able to do the things they've got to do to meet the dates
18 that they've set for themselves to start this effort. To date,
19 our review time has not been limiting to them.

20 MR. THOMPSON: The alternative conceptual models
21 might be as big a challenge for DOE as any of the other
22 comments with respect to getting that in place by January of
23 '89. I think that's the approach they've had before. They
24 knew they had to have a QA program. They knew they had to
25 address some of the shaft issues.

1 This conceptual models, they probably haven't been
2 focused on that issue, although I think we have clearly
3 indicated in earlier comments that they were taking a very
4 nonconservative approach, or a very optimistic interpretation
5 of the data, when other interpretations may be just as valid.
6 And so, I think that may be, if anything, as difficult.

7 MR. YOUNGBLOOD: I believe in the environmental
8 assessment that was issued two years ago or a year and a half
9 ago, we broached this subject with them at that time also.

10 MR. THOMPSON: Well, are there any issues that you
11 think are going to be very difficult to meet the January
12 timeframe?

13 MR. BALLARD: I am Ron Ballard. And the only primary
14 issue I see that we have to resolve is the exploratory shaft
15 location right away, because they want to start that so soon.

16 But, other than that and the objections which we've
17 already identified, which they are apparently working on, I
18 don't see any major problems. The shaft is the big one right
19 now.

20 MR. BROWNING: I think we're hoping that the
21 narrowing down from 3 sites in parallel to 1 site will allow
22 both DOE and us to focus our efforts to try to get this thing
23 resolved. It certainly is going to help. It is not going to
24 hurt, what Congress did in narrowing it down to 1 site.

25 CHAIRMAN ZECH: All right. Let's proceed.

1 [Slide.]

2 MR. YOUNGBLOOD: In summary, the staff issued the
3 draft point papers. We've held workshops with DOE. They have
4 indicated that they understand our concerns, and they plan to
5 respond to them. And we plan to issue the point paper as soon
6 as possible, and start working with DOE to resolve these
7 concerns.

8 They do plan a meeting with us in July to express to
9 us how they plan to respond to our concerns. That's basically
10 my presentation.

11 CHAIRMAN ZECH: Any questions from my fellow
12 Commissioners? Commissioner Bernthal?

13 COMMISSIONER BERNTHAL: This is a sort of an
14 irrelevance, but as a matter of curiosity, what's happening
15 with our -- how did the letters go, FFRDC, or something like?
16 I trust you know what I'm talking about?

17 MR. THOMPSON: We're moving along quite well, in
18 fact. I believe Commissioner Rogers and I will be down later
19 this month. We'll brief the Commission on the status of the
20 center.

21 It's up, it's running. As far as I know, you were
22 just down recently. Maybe I'll let Bob respond to the
23 specifics on it, but I think it's working well so far.

24 MR. BROWNING: You may or may not have seen it, but
25 we did send out a summary report as to what the status of the

1 center was, I think, a month or so ago.

2 Basically, they're on track, consistent with the
3 contractual requirements we have placed with them. What we're
4 trying to do now is to further accelerate the rate at which we
5 picked up the center and free ourselves of some of the other
6 technical assistance support we've had in other areas.

7 The dilemma is to be able to respond to these tight
8 turn around times for DOE's site characterization reports.
9 While they're getting up to speed, dictates hanging on to some
10 of our existing technical assistance support in parallel.

11 But we're in the process right now of reviewing
12 reports from the various project managers for the individual
13 pieces of work the center is doing for us now, in order to
14 arrive at a fee determination.

15 So, I hesitate to tell you exactly what their grade
16 is, because we're still in the process of giving them a grade.
17 But they are on track with regard to contractual requirements
18 basically.

19 COMMISSIONER BERNTHAL: I don't know where I came up
20 with those letters. They obviously bear no resemblance --

21 COMMISSIONER CARR: That's right. It's a federally
22 funded research and development center.

23 COMMISSIONER BERNTHAL: I couldn't remember the first
24 two.

25 MR. BROWNING: We refer to it as the Center for

1 Nuclear Waste Analysis.

2 COMMISSIONER BERNTHAL: Okay. I also understand that
3 you are looking at the work that the State of Nevada is doing
4 independently, and are working with them, and apparently, we
5 are going to tap into the waste fund to support our review of
6 Nevada's programs.

7 Could you elaborate a little bit on what we're doing
8 there?

9 MR. BROWNING: Well, we haven't actually done
10 anything yet. The State of Nevada has approached us with a
11 desire to have us look at the quality assurance program that
12 they're putting place for their technical review of DOE's
13 program.

14 And we're currently thinking that to the extent we
15 can, that might be a useful thing to do. And, clearly, our
16 interpretation is we would be able to fund that out of the --
17 well, first of all we've got to get our budget approved, and
18 then the bookkeeping between the Treasury Department and the
19 DOE fund is a completely separate matter.

20 But with regard to their technical program, we
21 haven't exactly -- sorted out exactly how we're going to do
22 that yet, and we probably will end up presenting some
23 information in that regard in the paper to you when we've
24 thought it out.

25 MR. STELLO: I think it's fairly clear, they're going

1 to develop data. We have to be as confident in the data they
2 develop as DOE is because that's all going to be used weighing
3 finally a decision to go forward.

4 So, since they are going to develop, and they've been
5 funded independently to develop data, I think there's little
6 question we're going to have to evaluate it.

7 And I think you have to start right at the beginning
8 just as we are with DOE to have a carefully implemented QA
9 program, so we're not questioning whether the data itself is
10 valid because it was somehow --

11 COMMISSIONER BERNTHAL: Are they going to have
12 sufficient funding? I don't know where they're getting their
13 funding.

14 MR. STELLO: It's a lot money. We're talking --
15 what's the funding going to get up to about?

16 MR. BROWNING: I think they're going to request like
17 \$23 million.

18 COMMISSIONER BERNTHAL: I see. I didn't realize that
19 issue had been resolved to that degree of funding.

20 MR. BROWNING: 6.6 this year, I think, is their
21 request for a half year.

22 MR. THOMPSON: There is a request in for that
23 funding.

24 COMMISSIONER BERNTHAL: So, obviously, then, your
25 judgment is they'll be able to bring on board some fairly

1 capable talent.

2 MR. BROWNING: They have been bringing on board some
3 fairly capable --

4 MR. STELLO: They have been collecting and generating
5 data from the site themselves, independent data.

6 COMMISSIONER BERNTHAL: I trust that this does not
7 involve physical activities at the site?

8 MR. STELLO: Yes.

9 COMMISSIONER BERNTHAL: It does? Who is overseeing
10 that?

11 MR. STELLO: It's a DOE site. They're going to have
12 to be responsible that anything that goes on there is okay with
13 them.

14 MR. PARLER: Mr. Browning, as I understood his
15 remarks earlier, was very concerned that the things that we
16 would be looking at, that DOE planned to do, would not, in my
17 own words, not his which were much more professional and
18 technical, would not mess up the site.

19 So, it doesn't matter how the site is messed up. It
20 would seem to me that we would have a concern about it.

21 COMMISSIONER BERNTHAL: You've got it. That's the
22 question.

23 MR. BROWNING: DOE has the first order of concern. I
24 mean, they've got to make sure the tests fit in their thing.
25 So, I think the thinking is, first of all, DOE has got to prove

1 what they're doing, approve access to the site, so there are
2 certain controls DOE has to exercise.

3 But once DOE is satisfied, we do have to take a look
4 at it all. So particularly if it involves punching holes in
5 the site.

6 Non-destructive testing would not be the same order
7 of concern as drilling the holes.

8 COMMISSIONER CARR: Along that same line, let me ask
9 a question there. Are we going to do independent testing to
10 confirm DOE's testing, or are we going to have an on-site
11 inspector like we do at other construction sites to watch them?

12 MR. THOMPSON: We will definitely have on-site
13 representatives during the key phase -- well, we'll have an on-
14 site rep at all times, permanent, out there.

15 We would also have special individuals who will audit
16 the programs at key periods during the activities out there to
17 ensure that we --

18 COMMISSIONER CARR: Somebody like an instruction
19 resident.

20 MR. THOMPSON: That's correct. And we will be likely
21 looking at our needs to have full coverage out there during the
22 site activities.

23 MR. BROWNING: But we do not plan to do individual
24 drilling of holes, et cetera. We'll look at their program
25 enough to have confidence we're getting good results.

1 MR. STELLO: We don't intend to be a third source of
2 independent data.

3 CHAIRMAN ZECH: All right. Commissioner Bernthal,
4 anything else?

5 COMMISSIONER BERNTHAL: Well, let me get back for one
6 instance to the FFRDC. We did have a budget problem. Do we
7 still have a budget problem, continuing budget problem?

8 And, at one point, I understood that that center was
9 going to be impacted significantly. I take it that that has
10 not materialized and that, in fact, we've met our commitments
11 and the contractual obligation that we undertook there.

12 MR. THOMPSON: The potential impact dealt with some
13 of the research funding activities and Mr. Beckjord and I met
14 to look at those, that support activity, and the budget
15 process, the funding for the center was restored.

16 We were not able to accelerate it, which we attempted
17 to do at one time, so that there was no acceleration of funding
18 to the center.

19 But it was fully funded for the level the Commission
20 had committed to.

21 CHAIRMAN ZECH: Mr. Carr?

22 COMMISSIONER CARR: I have some questions. If this
23 is all they had given us, if the draft were their final, how
24 near finished would they be?

25 I mean, how far would we be from approving it? Are

1 they 80 percent through with their work with the draft, or are
2 they 50 percent through?

3 MR. YOUNGBLOOD: I would guess maybe -- we don't know
4 how much information they have that they didn't put in the
5 report. They may be more than 80 or 90 percent through if they
6 have a lot of information that they haven't shown us in the
7 past, and I think they do.

8 COMMISSIONER CARR: So, you're going to have to
9 review more feet of documents then --

10 MR. YOUNGBLOOD: Well, they do have to respond to the
11 160 or so items that we have. I'm sure they don't fully
12 embrace every one of those 100 percent.

13 But we generally have an understanding of and some of
14 it may be just a formality and the discipline of going through
15 and addressing the issues.

16 They may have most all of the information in-house at
17 this present time, sir, but it's real difficult. I think they
18 can make it within the timeframe that they are talking about,
19 unless they have to go to press within the next 60 days to
20 issue it in January.

21 Then that would pinch them a little bit to make a
22 schedule.

23 MR. BROWNING: I think the objection about the
24 alternative conceptual models is so all persuasive throughout
25 this whole document.

1 That one comment probably has the highest level of
2 impact on --

3 COMMISSIONER CARR: More than the quality assurance
4 problem?

5 MR. BROWNING: The quality assurance is not so much
6 changing the document, per se, as to making sure that the plans
7 and procedures they have to implement this document are in
8 place.

9 COMMISSIONER CARR: But I would assume that quality
10 assurance is part of the plan, then?

11 MR. BROWNING: Yes.

12 MR. THOMPSON: I think it's one part of the plan. I
13 mean, there are various data throughout the various sections
14 that may be impacted by alternative conceptual models.

15 MR. YOUNGBLOOD: It's possible that they won't have
16 to add many more investigations that they already have once
17 they go through the review. They may well have most all of the
18 investigations they need.

19 It's just that we can't detect that from our review
20 of the SCP, and they really can't explain it to us either
21 without a disciplined review across each of the elegies that
22 they're working on.

23 COMMISSIONER CARR: A long time ago, when this first
24 came up, I remember we talked about whether we were going to
25 take professionals and train them in QA or we were going to

1 take QA's and train them in digging holes.

2 Which did we decide to do for our quality checks?

3 MR. BROWNING: What we're doing now is sending two.
4 One a technical expert, and one a QA expert.

5 MR. THOMPSON: But I think we are trying to make sure
6 that we have the technical people who understand the QA, go
7 with the QA folks.

8 MR. BROWNING: So, there is some cross pollination
9 and we are training our technical people to be on the lookout
10 for quality assurance kinds of concerns.

11 COMMISSIONER CARR: Okay. And what part is EPA going
12 to play in this with their final high level waste -- are they
13 going to be holding everybody up, or are they going to meet
14 their deadlines and -- do we have a feel for that?

15 MR. BROWNING: My impression is that the site
16 characterization effort need not be held up because of the EPA
17 final standard situation.

18 However, it's my understanding the state of Nevada is
19 going to use that as a legal action if they haven't already.
20 And I just don't know the current status of that.

21 MR. THOMPSON: I guess we kind of look at it as data
22 is data. The site is going to be the site whether the EPA, you
23 know, modifies the standard or reverifies its current standard.

24 What may impact is the acceptability, but for
25 purposes of the site characterization activities, I think that

1 can go forward now because we want to just make sure the data
2 and information is properly obtained.

3 And then its evaluation and the significance of that
4 data would maybe somewhat impact it by any change in the EPA
5 regulations.

6 MR. STELLO: I had asked that same question, and they
7 said they were fairly comfortable that all their reasonable
8 expectations that might come out of that, it was not going to
9 create a big problem for them. You notice I use the word
10 "reasonable." That means if something extreme comes out --

11 COMMISSIONER CARR: It's reasonable in the eyes of
12 the beholder, right?

13 MR. STELLO: I think they had more in mind a
14 reasonable band of what the standard might look like.

15 COMMISSIONER CARR: Okay. I have only one more
16 question. How much research do we have to support our own work
17 in this? Have we got a research program that is ongoing, other
18 than what they are doing at the FFRDC? Have we got an in-house
19 research problem?

20 MR. THOMPSON: We have identified our research needs
21 primarily with respect to some of the methodologies that we
22 would want to use to independently check the sites and from our
23 licensing viewpoint. I think some of those things are longer
24 term, and we entered into an agreement with Australia on the
25 Alligator River Project with the international aspect with

1 modelling activities of groundwater flow and site. So we have
2 a number of activities that our research office is pursuing.
3 We are trying to integrate those to the extent we can.

4 COMMISSIONER CARR: I just want to make sure that
5 they are going to meet the timeframe, I guess, is what I am
6 asking. Is the finish date on the research going to support
7 what we are trying to get done?

8 MR. BROWNING: So far it looks like it will, yes.

9 MR. STELLO: But again, that is a very important
10 question and a very significant issue, because some of that
11 information is the kind of information that you'd like to have
12 finished so you can get the methodology developed and have a
13 rulemaking and have that issue resolved through a rulemaking
14 process. The rulemaking process takes time, so if you start
15 trying to do a lot of that by rulemaking, you are really
16 pushing real hard getting the methodology out and resolved and
17 to devise a rule to describe an acceptable way to characterize
18 that kind of stuff.

19 There are problems in that area. I don't want to
20 minimize them. It will be difficult.

21 COMMISSIONER CARR: I guess my main worry is I don't
22 want this thing finished out there and sitting on us waiting to
23 license it. You know, you make this big hole in the ground and
24 nobody can use it.

25 MR. STELLO: Well, I don't know that that's the

1 problem. It is that the licensing process is difficult by
2 itself. You can't get some of these issues where you can get,
3 you know -- how do you do this calculation broken out and get a
4 methodology developed and go to rulemaking and get it resolved
5 so you don't have to have all of those contests in the hearing
6 room itself. If you do, you know, it could just go on for an
7 awfully long time.

8 CHAIRMAN ZECH: I think the question to is --

9 COMMISSIONER CARR: Do we know why we have got to get
10 our arms around it in order to be able to license it? That is
11 the question.

12 CHAIRMAN ZECH: Right and the research that can
13 support that. First of all, we have got to know what we've got
14 to get our arms around, but second of all, we have got to have
15 the confidence technically, scientifically, with all the
16 engineering expertise to go with it and all the research that
17 goes with it, do we have the confidence that we are making the
18 right decision? So I think that is what Commissioner Carr is
19 asking. Are we doing -- are you satisfied that we are doing
20 enough research to back up the decisions that it looks like are
21 in front of us.

22 MR. STELLO: Yes. Now will that be done in the time
23 frame --

24 CHAIRMAN ZECH: We know we are asking you a tough
25 question because we are in a difficult new field, a new, unique

1 experience, but the point is we should do as much as we can in
2 my judgment to foresee the research we need, and if we don't
3 foresee it, we don't foresee it. But we should try to foresee
4 all that we can so that we are doing the research now that we
5 know will be necessary to allow us to make confident decisions.

6 MR. STELLO: And that is what we are trying to do.

7 CHAIRMAN ZECH: And the FFRDC is one thing and I
8 think the question really is -- and you pointed out that the
9 Australian research program, but are there other research
10 programs going on that will complement FFRDC and the other
11 things you have, and the answer is yes. All right? Thank you.
12 Commissioner Carr, anything else? Commissioner Rogers?

13 COMMISSIONER ROGERS: Where does DOE stand on
14 finalizing its managing assignments for OCRWM? How many people
15 are acting and how many people are really firmly in place, so
16 that it is possible to resolve questions with somebody that's
17 in authority over there.

18 MR. THOMPSON: Ben Rusche's replacement obviously is
19 in an acting position and as far as I know, DOE anticipates
20 that probably will remain in an acting position, at least until
21 the next Administration. Likewise, they have had difficulty in
22 recruiting and filling the new QA office position here at
23 headquarters. That position is newly established. They went
24 through a reorganization, I guess it was effective about a
25 month ago and I think that's another key position that is

1 difficult for them to fill. It is a key one in order to
2 address one of our major objections, and those are the two that
3 I am aware of.

4 Bob, do you know of any others? I think the site
5 folks are pretty well identified. The licensing --

6 COMMISSIONER ROGERS: Well, the org chart that they
7 sent dated April '88 had everybody acting -- another one of the
8 key sections underneath the Director, and yet I got a letter
9 as I am sure the rest of the Commissioners did from DOE
10 designating who those people -- what the responsibility of
11 those people is and not describing them as acting, but
12 describing some others as acting.

13 I was not clear on whether the acting has been
14 removed from that second tier completely and all those people
15 are now in place or not, because of this question if
16 everybody's acting, is the situation somewhat fluid and no one
17 is really ready to make a tough decision if there is a
18 significant disagreement between DOE and NRC on some of these
19 matters.

20 MR. THOMPSON: Ed Kay is prepared to make the
21 decisions. At least on our discussions with him, he is
22 assuming that responsibility although he is in an acting
23 position. I guess I would recommend the Commission take this
24 up a bit with DOE, certainly. In their discussions with us,
25 the key individual, who happens to be in an acting position,

1 not filled, is the quality assurance man, and that is where I
2 think they have their biggest difficulty right now, in having
3 someone in the position of responsibility able to address in an
4 effective way concerns that we have with that knowledge about
5 the programmatic implications of those commitments.

6 COMMISSIONER ROGERS: Well, that person is acting.

7 MR. THOMPSON: That person is acting and I think he
8 is probably acting on a part-time basis.

9 COMMISSIONER ROGERS: There is a key slot that is
10 really not pinned down. What about the Office of Facilities,
11 Siting and Development, Mr. Cale? Is he firmly in place now?

12 MR. THOMPSON: As far as I know, he is. I haven't
13 had this specific discussion with Commissioner Kay, but I am
14 not aware of any problem with his making commitments for the
15 DOE program.

16 COMMISSIONER ROGERS: It's just that with some of the
17 significant areas of possible contention between NRC and DOE, I
18 am a little concerned that if everybody is acting, nobody is
19 ready to really sit down and thrash things out, that it is
20 going to be somebody else's responsibility.

21 MR. BROWNING: We haven't noticed any reluctance on
22 their part to address the issues. We haven't really noticed a
23 problem in that regard.

24 COMMISSIONER ROGERS: Fine.

25 MR. THOMPSON: Again, I would say the QA is the key

1 individual and the key position that I am concerned about.

2 MR. BROWNING: I wonder if before we could adjourn I
3 could ask the person in the control room to put up the picture
4 of the Nevada team so I could address directly Commissioner
5 Carr's question.

6 That is the FTE that we had working on this and now
7 that we are all in the same building, I'll encourage you, if
8 you are down on my floor I would like you to come around and
9 meet some of the experts.

10 COMMISSIONER CARR: I'll look forward to it.

11 MR. BROWNING: There's a real FTE.

12 COMMISSIONER BERNTHAL: They all look like people to
13 me.

14 CHAIRMAN ZECH: Okay, fine. Any other questions from
15 my fellow Commissioners?

16 COMMISSIONER CARR: You mean working on those eight
17 volumes?

18 MR. BROWNING: Right. On the follow-up of the issues
19 that we have now raised.

20 CHAIRMAN ZECH: Well, let me on behalf of the
21 Commission, thank you for the fine briefing this afternoon. I
22 would like to know too that those people you put up there, Bob,
23 as well as others I'm sure are part of the High Level Waste
24 Division and those who are helping did an excellent job in
25 reviewing the consultation draft site characterization plan

1 from DOE and also in preparing the point papers.

2 I would encourage the staff to continue the technical
3 exchanges with DOE and continue to look at those five key
4 objectives that you've discussed with us here today, as well as
5 look at the comments and to see if perhaps you can't prioritize
6 those. I think that might be of assistance to DOE, at least
7 you should be working together with them on that, it seems to
8 me and that might give us some area of priority as we look at
9 those number of comments you have.

10 It might help if you get new comments as you continue
11 the review program and you might find out in the prioritizing
12 project that there is two or three others that you want to lift
13 up a little higher than you have. All I am saying is I think
14 priority is important to look at -- I know they are all
15 important, don't get me wrong, but you may find in that package
16 of 108, I believe it is, you may find several that should be
17 elevated in importance.

18 Lastly, I'd like to say that I think it is important
19 that the staff continue to work with the state of Nevada that
20 you indicated that you have been working with them here, and
21 keeping them informed as we go along. Of course, I think it is
22 important that you continue to keep the Commission informed as
23 we get into this extremely important new field really, for us,
24 a new field that is so important to the whole nuclear industry.
25 So we will need briefings in the future from time to time on

1 this and I hope you will arrange for that and not wait for us
2 to call a briefing if you think there is something coming up
3 that is of great importance, because we want it to be brought
4 to our attention right away if, in your judgment, it should be.

5 Are there any other questions from my fellow
6 Commissioners? Mr. Rogers?

7 COMMISSIONER ROGERS: Well, I am just a little
8 concerned that we are aware of any sticky issues that aren't
9 getting resolved on any of these matters, particularly well
10 before the June hearing that is going to be held by Senator
11 Breaux and those people on the status of this. I think we
12 ought to know where things stand well before that so that
13 anything that might get resolved through the efforts of the
14 Commission or Commissioners could be brought to bear on any
15 sticky issues.

16 CHAIRMAN ZECH: I support that fully and I presume
17 you'll do that, but June is like tomorrow, really, and so I
18 would just suggest that you be alert to anything that might
19 come up in the next few weeks that should be brought to the
20 Commission and bring it to us, and I think that's what
21 Commissioner Rogers is saying, and I support that fully.

22 Are there any other comments from my fellow
23 Commissioners?

24 [No response.]

25 CHAIRMAN ZECH: Thank you very much for an excellent

1 briefing. We stand adjourned.

2 [Whereupon, at 3:25 p.m., the meeting was adjourned.]

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2 REPORTER'S CERTIFICATE
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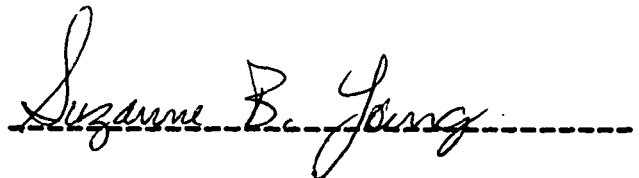
4 This is to certify that the attached events of a
5 meeting of the U.S. Nuclear Regulatory Commission entitled:
6

7 TITLE OF MEETING: NRC Point Papers

8 PLACE OF MEETING: Washington, D.C.

9 DATE OF MEETING: May 4, 1988
10

11 were held as herein appears, and that this is the original
12 transcript thereof for the file of the Commission taken
13 stenographically by me, thereafter reduced to typewriting by
14 me or under the direction of the court reporting company, and
15 that the transcript is a true and accurate record of the
16 foregoing events.

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COMMISSION BRIEFING
ON THE
NRC POINT PAPERS
FOR THE DOE
CONSULTATION DRAFT
SITE CHARACTERIZATION PLAN
FOR YUCCA MOUNTAIN
NYE COUNTY, NEVADA
MAY 4, 1988

CONTACT:
B. J. Youngblood
X23387

PRESENTATION OUTLINE

- ° SITE CHARACTERIZATION PLAN (SCP)
- ° CONSULTATION DRAFT SITE CHARACTERIZATION
PLAN (CDSCP) REVIEW CHRONOLOGY
- ° NRC POINT PAPERS
- ° OBJECTIONS
- ° SCP AND NEAR-TERM SITE
CHARACTERIZATION MILESTONES

SITE CHARACTERIZATION PLAN

- ° PURPOSE
- ° CONTENTS
 - PLAN FOR ACTIVITIES
 - DESCRIPTION OF WASTE FORM & PACKAGE
 - CONCEPTUAL DESIGN OF REPOSITORY
- ° CDSCP
 - NOT REQUIRED BY NWPA OR 10 CFR 60
 - EARLY INPUT BY NRC AND STATE

CDSCP REVIEW CHRONOLOGY

- ° NRC'S REVIEW PLAN - 12/21/87
- ° DOE ISSUED CDSCP - 01/08/88
- ° NRC'S ACCEPTANCE REVIEW ISSUED -
01/26/88
- ° NRC'S DRAFT POINT PAPERS ISSUED -
03/07/88
- ° NRC'S DRAFT TO COMMISSION - 03/17/88
- ° COMMISSIONER ASSISTANTS BRIEFED -
03/28/88
- ° SERIES OF WORKSHOPS ON POINT PAPERS
- ° ACRS SUBCOMMITTEE - 04/28/88
- ° BRIEFING OF COMMISSION - 05/04/88
- ° FINAL CONCERNS ISSUED - MAY 1988

NRC POINT PAPERS

- ° NRC'S DRAFT POINT PAPERS
 - OBJECTIONS (5)
 - COMMENTS (108)
 - QUESTIONS (48)
- ° NRC'S FINAL POINT PAPERS
 - NO SIGNIFICANT CHANGES

OBJECTIONS

1. ALTERNATIVE CONCEPTUAL MODELS
2. QUALIFICATION OF QA PROGRAMS
3. DEPTH OF FIRST SHAFT
4. SHAFT CONCEPTUAL DESIGN INFORMATION
5. LOCATION OF SHAFTS

OBJECTION 1: NEED TO CONSIDER ALTERNATIVE
CONCEPTUAL MODELS

SIGNIFICANCE: INVESTIGATIONS FOCUSED ON
PREFERRED MODEL MAY BE INSUFFICIENT

ACTION: WORKSHOP IN NEVADA (APRIL 11).
DOE NEEDS TO CONSIDER ALTERNATIVE MODELS
IN DEVELOPMENT OF SCP

OBJECTION 2: NEED QUALIFIED QA PROGRAM

SIGNIFICANCE: DATA COLLECTED MAY NOT BE
USABLE IN LICENSING

ACTION: DOE SUBMIT QA PLANS TO NRC FOR
APPROVAL. DOE AND NRC AUDITS.

OBJECTION 3: DEPTH OF FIRST SHAFT

SIGNIFICANCE: SHAFT PENETRATES IMPORTANT BARRIER BETWEEN REPOSITORY AND WATER TABLE. PENETRATION MAY COMPROMISE WASTE ISOLATION CAPABILITY.

ACTION: NRC TO PARTICIPATE IN DESIGN REVIEW MEETING. DEMONSTRATE THAT SUCH PENETRATION DOES NOT COMPROMISE THE WASTE ISOLATION CAPABILITY.

OBJECTION 4: INSUFFICIENT SHAFT CONCEPTUAL DESIGN INFORMATION

SIGNIFICANCE: DOES NOT ALLOW EVALUATION OF INTERFERENCE OF CONSTRUCTION ON TESTING

ACTION: NRC TO PARTICIPATE IN DESIGN REVIEW MEETING. DOE TO PROVIDE ADDITIONAL DESIGN INFORMATION

OBJECTION 5: LOCATION OF SHAFTS

SIGNIFICANCE: LOCATION MAY NOT SUFFICIENTLY MINIMIZE SURFACE WATER INFILTRATION INTO THE SHAFT

ACTION: NRC TO PARTICIPATE IN DESIGN REVIEW MEETING. DOE TO PROVIDE EVALUATION

SCP AND NEAR-TERM SITE
CHARACTERIZATION MILESTONES

- ° SCP - JANUARY 1989
- ° PUBLIC COMMENTS AND DOE HEARINGS ON SCP
- ° SHAFT COMMENTS WITHIN 90 DAYS OF SCP -
APRIL 1989
- ° START SHAFT AFTER CONSIDERING NRC
COMMENTS - JUNE 1989
- ° SITE CHARACTERIZATION ANALYSIS (SCA)
WITHIN SIX MONTHS OF SCP - JULY 1989

SUMMARY

- °NRC ISSUED DRAFT POINT PAPERS
- °NRC AND DOE HAVE HELD WORKSHOPS
- °DOE INDICATES THEY UNDERSTAND OUR CONCERNS AND PLAN TO RESPOND TO THEM IN THE SCP
- °PLAN TO SEND THE FINAL POINT PAPERS AS SOON AS POSSIBLE AND WORK WITH DOE TO RESOLVE CONCERNS