

DEC 02 1988

Mr. Sam Rousso, Acting Director
Office of Civilian Radioactive Waste Management
U. S. Department of Energy
1000 Independence Avenue, S. W.
Washington, D. C. 20545

Dear Mr. Rousso:

SUBJECT: FORTHCOMING COMMISSION BRIEFING BY THE DEPARTMENT OF ENERGY

By letter dated November 22, 1988, Mr. Robert Browning of my staff forwarded to you a copy of the transcript of the November 16, 1988 briefing to the Commission on the Status of the Location of the Exploratory Shaft at Yucca Mountain. Although this briefing was given by members of the U. S. Nuclear Regulatory Commission staff, the Commission itself raised several concerns on the overall high-level waste program that the U. S. Department of Energy (DOE) should address. Therefore, the purpose of this letter is to provide you with a second copy of the November 16, 1988 transcript which has identified the concerns expressed by the Commission. The concerns raised by the individual Commissioners are marked by a vertical bar on the page. The Commission has requested that DOE address these concerns in its upcoming briefing of the Commission on December 20, 1988. If you need any additional assistance, please feel free to contact Mr. Robert Browning, who can be reached at (301) 492-3404.

Sincerely,

(Signed) Hugh L. Thompson, Jr.

Hugh L. Thompson, Jr., Director
Office of Nuclear Material Safety
and Safeguards

Enclosure:
As stated

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LSS	J. Linehan	R. Ballard	On-Site Reps
CNWRA	NMSS R/F	RLPD R/F	J. Holonich
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*See previous concurrence

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NAME:JHolonich	:JLinehan	:RBrowning	:HThompson:	:	:	:
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BRIEFING ON STATUS OF LOCATION OF EXPLORATORY
SHAFT AT YUCCA MOUNTAIN

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Wednesday, November 16, 1988

The Commission met in open session, pursuant to notice, at 10:00 o'clock, a.m., the Honorable LANDO W. ZECH, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

- LANDO W. ZECH, Chairman of the Commission
- KENNETH CARR, Member of the Commission
- KENNETH C. ROGERS, Member of the Commission
- JAMES R. CURTISS, Member of the Commission

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P R O C E E D I N G S

[10:00 a.m.]

CHAIRMAN ZECH: Good morning, ladies and gentlemen.

Mr. Roberts will not be with us this morning.

Today, the Commission will be briefed by the Office of Nuclear Material Safety and Safeguards on the regulatory concerns regarding the exploratory shaft facility for the Yucca Mountain site.

As you are aware, the Nuclear Waste Policy Act, as amended in 1987, requires the Department of Energy to develop a site characterization plan for a high-level radioactive waste repository. The exploratory shaft facility is an integral part of that plan.

The exploratory shaft facility is an integral part of that plan. The exploratory shaft facility will be utilized by the Department of Energy to conduct various tests and experiments to gather vital information for characterization of the Yucca Mountain site.

Earlier this year, the Staff reviewed the consultation draft site characterization plan, identified NRC's concerns, and formally transmitted major exploratory shaft facility issues to the Department of Energy.

Today, the Staff will inform the Commission on the status of those exploratory shaft facility issues and outline the approach tentatively agreed upon by the Department of

1 exploratory shaft is the first key technical issue that we've
2 had to face in resolving the proposed site characterization
3 activities with DOE, and it's been one that we have been
4 identifying our concerns with for some time. This particular
5 one, since we had the meeting with the Commission in May of
6 last year, we've had four meetings with the Department of
7 Energy spanning the May, June, July, October, November
8 timeframe, in there, where we've been identifying our
9 approaches. We've essentially resolved and focused the issues
10 down from 128 down to 53, so there are still some significant
11 issues that we have to address with DOE in resolving our
12 concerns, and some of these aspects will be addressed today.

13 Joe Bunting, who is the Chief of the Engineering
14 Branch, will begin today's briefing, and he will be assisted by
15 Dinesh Gupta, who is the geotechnical team leader for the Yucca
16 Mountain project, and Jim Kennedy, who is the quality assurance
17 section leader.

18 CHAIRMAN ZECH: Thank you very much. You may
19 proceed.

20 MR. BUNTING: Thank you, sir.

21 Would you turn to Chart I, please? We will use Chart
22 I for the purpose of an overview.

23 The first purpose of the briefing is to give you the
24 factual information on these major issues regarding the
25 exploratory shaft, and they are shown on this chart, and they

1 consideration to the significance of the objections, concerns,
2 and the 128 open items that were identified by the Staff during
3 the review. We've come to the conclusion that these issues
4 identified by the Staff must be considered as just the symptoms
5 of a major problem and not be confused with the problem itself,
6 and we suspect the problem includes an inadequate design
7 control process.

8 In our briefing to you in May, we did not make the
9 connection between the multitude of issues raised by our
10 comments and the questionable adequacy of the design control
11 process. Our initial realization of a major problem came about
12 during our observation of DOE's 50 percent design review, and
13 there it became obvious to the NRC Staff that DOE's architects
14 and engineers were working to rather rigid requirements given
15 to them by DOE, and the requirements did not seem to adequately
16 incorporate 10 CFR 60 regulatory requirements.

17 Also, there seemed to be a clear lack of interface
18 control between the various DOE contractor design and
19 construction organizations who were present at the meeting. We
20 have brought this to DOE's attention, and they have indicated
21 their commitment to implement a design control process that
22 meets regulatory requirements for future activities. We still
23 have to deal with past activities and specifically the adequacy
24 of the design to be presented in the site characterization plan
25 for the exploratory shaft facility.

1 Could you put up Figure 1, please?

2 This diagram illustrates the major features of the
3 exploratory shaft facility. This is as related in DOE's draft
4 site characterization plan. Here you see the three head frames
5 on the surface, the two 12-foot diameter shafts 300 feet apart,
6 the main underground test area. The dotted lines illustrate
7 the long exploratory drifts at the repository horizon, and the
8 cutout at the bottom represents the DOE plans to penetrate the
9 barrier below the repository level with one of these 12-foot
10 shafts.

11 So when we talk about the exploratory shaft facility
12 here today, we're talking about all that you see in this
13 diagram, and these features will be further highlighted by Dr.
14 Gupta, using his scale model, when he makes his presentation.

15 If you would turn to Chart III, why is the ESF
16 important?

17 One of the regulatory requirements we wish to focus
18 on here today is contained in 10 CFR 60.21, which requires --
19 and I'm going to quote this -- "a comparative evaluation of
20 alternatives to the major design features that are important to
21 waste isolation with particular attention to those alternatives
22 that provide longer radionuclide containment and isolation.

23 Now there are three important features of this
24 requirement I'd like to focus on.

25 Number one, major design features important to waste

1 alternatives to resolve those uncertainties.

2 Now I want to point out, I cite these examples just
3 for illustrative purposes, and I don't mean to imply that DOE
4 must consider these alternatives.

5 Now the documentation provided by DOE also did not
6 demonstrate the process nor the criteria that were used to
7 translate these various regulatory requirements into their
8 subsystem requirements document. Now this document became one
9 of the principal inputs into the design process they had in
10 place, and this is one of the documents that contained the
11 rigid requirements that I referred to in relating the
12 observation of the 50 percent design review.

13 If you will turn to Chart IV, turn now to why is this
14 subject important now. In the first instance, it is timely,
15 because DOE wants to begin construction in November of 1989.
16 However, from a regulatory perspective, both the law and NRC's
17 rules require the DOE to defer sink of the shafts until it has
18 received and considered comments from the Commission.
19 Furthermore, 10 CFR 60.18(d) requires the Director, NMSS, to
20 provide DOE with NRC's site characterization analysis, and this
21 analysis shall include a statement of no objection or we have
22 to list the specific objections with respect to DOE's program
23 for characterization.

24 Because this exploratory shaft facility is more than
25 just the access shafts, and it includes the site

1 objection" finding, can they go ahead?

2 MR. BUNTING: Yes, sir.

3 COMMISSIONER CARR: So all we do is go on record, and
4 then they can do what they want to do.

5 MR. BUNTING: Yes, sir. This is a possession
6 license, not a facility license, so our ultimate --

7 COMMISSIONER CARR: But they are required to get our
8 comments before they can go ahead.

9 MR. BUNTING: That's correct.

10 COMMISSIONER CARR: So what if we don't send our
11 comments?

12 MR. BUNTING: Then I guess they can't go ahead.

13 COMMISSIONER CARR: Oh, okay.

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

15 MR. GUPTA: Thank you, Mr. Chairman, Commissioners.

16 In January of this year, DOE submitted the
17 consultation draft site characterization plan that contained
18 the exploratory shaft design. We reviewed that design,
19 recognizing the fact that if the site is found suitable for
20 repository development, the ESF facility would be incorporated
21 in the repository. It will become a part of the repository
22 itself. And I will illustrate that point with this scale model
23 here.

24 What we have here is a scale model of the repository
25 that shows the terrain at the Yucca Mountain. The blue surface

1 here is the groundwater table, which is about 1700, 1800 feet
2 below the ground surface. The repository would be developed
3 about 1000 feet below the ground surface. The final
4 repository, there will be surface facilities here from which
5 the waste would be transported through a ramp that would come
6 from the surface down to 1000 feet below ground at this
7 location.

8 The excavated rock material would be carried out
9 through another ramp that would be coming out just about in
10 this area to this stockpile here.

11 The final repository would have four shafts. Two of
12 these would be what we now know as exploratory shafts. Those
13 two shafts would be come ventilation shafts in the final
14 repository. There would be two additional shafts, the
15 emplacement exhaust shaft and men-and-materials shaft that
16 would be built later on as part of the repository.

17 So the overall design would have four shafts and two
18 ramps as surface openings.

19 CHAIRMAN ZECH: How far is the bottom of the shaft
20 above the water table?

21 MR. GUPTA: It's about 400 feet -- 700 feet.

22 CHAIRMAN ZECH: 700 feet?

23 MR. GUPTA: Yes.

24 CHAIRMAN ZECH: All right. Thank you. You may
25 continue.

1 underground test areas and between the shafts and the future
2 waste emplacement areas. The two shafts are located 300 feet
3 apart. Some of the testing would be conducted with 200 feet of
4 these two shafts, and the plan is to place the waste within,
5 say, 500 feet of these openings.

6 We have raised this concern that there might be
7 potential interference concerns with respect to this opening
8 and the underground testing that DOE is planning. These
9 interference concerns are not related to the locations of the
10 two shafts in the wash area. They are strictly related to how
11 the overall design of the ESF fits in together.

12 In two previous bore holes at the site, water from
13 one bore hole founds its way into the other bore hole, and our
14 concern is that by locating the two shafts so close to each
15 other, since ES-1 would be primarily used for conducting a
16 number of important tests, would be instrumented heavily, that
17 by locating the other shaft so close to ES-1, there might be
18 some interference possibility.

19 A similar concern is with respect to the testing that
20 would be conducted at the main test lab, which is 1000 feet
21 below the ground surface.

22 DOE also needs to evaluate the effect of locating the
23 two shafts so close to the future waste emplacement areas.

24 In addition, the DOE did not include sufficient
25 details on test locations and their zone of influence in the

1 area, and they are now evaluating that distance in response to
2 our concerns and will either justify their position or that
3 distance or will be coming forth with a new distance.

4 CHAIRMAN ZECH: All right. Thank you.

5 COMMISSIONER CARR: It seems like if it had some
6 design basis, it would be 343.6 feet or something.

7 MR. THOMPSON: I think it was somewhat arbitrary.

8 COMMISSIONER CARR: Okay.

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

10 MR. GUPTA: May I have Vu-graph No. 6, please?

11 The third of our objections is related to the DOE's
12 plan to penetrate ES-1 below repository horizon level into an
13 important rock barrier between the repository level and the
14 groundwater table.

15 In response to this objection, DOE stated that they
16 are further analyzing the need for this penetration. By
17 penetrating ES-1 below the repository horizon level, they
18 wanted to verify that indeed the barrier is an important
19 barrier between the repository and the groundwater level, and
20 also they wanted to do some testing regarding the flow
21 characteristics of the rock interfaces.

22 However, in response to our concerns, DOE is now
23 planning to perform a damage versus benefit analysis before
24 deciding about the penetration.

25 COMMISSIONER CARR: Are they going to get data from

1 the perimeter like that sketch shows, one of the drift shafts?

2 MR. GUPTA: In the final design of the repository,
3 there would be a perimeter drift, but for exploration purposes

4 --

5 COMMISSIONER CARR: They want to go beyond the
6 perimeter?

7 MR. GUPTA: No. They are doing the testing and the
8 exploration only in the northeast corner.

9 COMMISSIONER CARR: But I'm looking at your red line
10 that goes past the area.

11 MR. GUPTA: Oh, yeah, they are going beyond that.
12 Actually there is a feature there, the drill hole wash that
13 they want to see if there could be any potential conflict. And
14 it would also be a ramp, a portion of the ramp in the future
15 repository.

16 May I have the cross-section of the repository,
17 please?

18 This cross-section here shows that there are many
19 features -- it's an east/west cross-section -- shows that there
20 are many parts and sections that go through the repository, and
21 the repository shape is bounded by many faults, and it's
22 important to explore whether there would be sufficient room in
23 the south and that area is suitable for repository development
24 or not.

25 May I have the next Vu-graph, please.

1 our five objections was on quality assurance. We stated that
2 we didn't have confidence in the QA program at that time. We
3 recommended that DOE not start new site work until the program
4 was qualified and we, on the NRC Staff, had conducted
5 sufficient reviews and audits to agree that it was qualified.

6 Now included within that new site work, of course, is
7 the sinking of the exploratory shaft.

8 Mike, could I have the organization chart?

9 This isn't in your package, by the way. This is an
10 organization chart of the DOE program, beginning with
11 Headquarters, the DOE Project Office in Nevada, and the prime
12 contractors.

13 Last June, we met with DOE after issuing our
14 objection on the consultation draft SEP. We agreed -- we
15 rather discussed -- what we needed to do to agree that their
16 program was qualified. We identified all the specific review
17 actions we need to take to review their QA program, and if it,
18 in fact, is qualified, to agree that it is so.

19 Now this chart depicts all of the major organizations
20 in the repository program. It starts at DOE Headquarters at
21 the top, the Office of Civilian Radioactive Waste Management.
22 The next block is the Nevada Project Office, now called the
23 Yucca Mountain Project Office, and underneath that are the
24 major participants in the program -- the three national labs,
25 the three Nevada test site contractors, and the USGS.

1 exploratory shaft may accommodate the schedule slips we've had
2 so far.

3 COMMISSIONER CURTISS: Is that because of DOE's
4 timing in submission of the plans or our review of those plans?

5 MR. KENNEDY: Both. We've completed one review of
6 the first plan, and it took a little bit longer than we
7 expected because, first, we didn't resolve all the issues that
8 we expected to in the meeting that we had in July, and second,
9 because it was a first. It just didn't go as quickly as we
10 thought. We put down a real ambitious schedule, 30 days for
11 preparing a safety evaluation and getting it through all the
12 Staff and OGC. We didn't make it on the first one. We're much
13 more optimistic on later ones.

14 But also DOE is slipping on submission of QA plans.
15 A number of those are overdue.

16 I was about to mention that we have a number of
17 review actions, and all of those have been identified, and
18 they're on a master plan.

19 DOE has many more actions to take to make the program
20 ready to review. Now they have made some real progress in the
21 last ten months or so in upgrading their QA program and getting
22 it closer to where it needs to be. As we've reported in the
23 quarterly progress reports to the Commission, they've
24 accomplished the following in the recent past:

25 First, they elevated the position of QA Manager for

1 and observing DOE audits, and we're putting the burden on DOE
2 to conduct good audits to find the problems with their
3 contractors and get them corrected, and we've noticed a big
4 improvement in the way they've conducted audits in the last ten
5 months.

6 MR. THOMPSON: It's not that we won't conduct our own
7 independent audits. It's just that we can get a more effective
8 view of what DOE is doing in their QA program by actually
9 observing their QA audits and making sure they do the program
10 right, and that's, you know -- they have the primary burden on
11 that. So we think this is a very effective way to use the
12 resources that we have in improving the QA program.

13 MR. KENNEDY: Now there's still a long way to go for
14 them, and I don't want to imply by listing off these
15 accomplishments that the objection is close to being resolved,
16 because it isn't.

17 Some of the early milestones have been missed, and
18 there are quite a few review actions yet to be taken by the
19 Staff. But there is progress being made, and I've been
20 involved in this for five years now, and progress is being made
21 at a faster rate than it ever has in the last five years.

22 Now I mentioned this broad concern, because design
23 control is -- the design control is an issue, is one that's a
24 subset of the overall QA program concerns that we have. We are
25 working on design control in resolving the overall QA objection

1 CHAIRMAN ZECH: Well, then, --

2 MR. KENNEDY: It will be addressed, but in order for
3 us to resolve the objection --

4 CHAIRMAN ZECH: Well, as I understand what you're
5 saying, though, it may not be addressed sufficiently; is that
6 correct?

7 MR. KENNEDY: There will not be enough information in
8 the plan.

9 MR. THOMPSON: I think we'll get to that, Mr.
10 Chairman, because there's a kind of parallel process that will
11 be ongoing. The site characterization plan which will be
12 submitted for review, it will - it's been developed in response
13 to our previous comments, and as we said earlier, the focus on
14 the QA problem and the design control problem was done -- was
15 kind of concluded after they probably put a lot of the site
16 characterization plan together.

17 So they've got a re-review process that's in
18 progress, and I think we'll talk about exactly how we're going
19 to be addressing this in parallel.

20 But you're right, Mr. Chairman, we've got to address
21 both of these in parallel, and there is some risk that the site
22 characterization plan may have to be revised to reflect any
23 changes that may come out of this parallel review.

24 CHAIRMAN ZECH: Well, if I understand what you're
25 saying -- and I don't want to interrupt your briefing to any

1 symptoms of a larger problem, and that needs to be corrected by
2 DOE, and that problem is design control.

3 This is important to us as a regulatory agency,
4 because we can't review all the work that DOE performs with
5 respect to the shaft or any other activity, for that matter.
6 It is not enough for DOE to just address the specific issues
7 that we raise, because we have not, will not, and cannot look
8 at everything. They and we need to rely on a program of
9 controls implemented by them to give us confidence that work is
10 performed adequately, and this program is a quality assurance
11 program of which design control is a part.

12 Now the scope of the design control program is
13 activities affecting the public health and safety, and for the
14 repository, this is activities which are either important to
15 safety or waste isolation, terms which are defined in Part 60.

16 Now it's the Staff's position that the exploratory
17 shaft facility is important to waste isolation. The ESF
18 activities, therefore, need to be performed under a design
19 control program which meets our QA requirements in Part 60.

20 Now let me define the problem that we see in the DOE
21 design control program. We have design requirements in 10 CFR
22 Part 60. DOE has design requirements in a document called its
23 Subsystems Design Requirements Document. This is a detailed
24 design requirements document which is used by the various
25 organizations within the DOE program.

1 resolve these issues? Do you have any --

2 MR. KENNEDY: That's what Joe Bunting is going to
3 talk about.

4 CHAIRMAN ZECH: All right. Is that next?

5 MR. THOMPSON: The grand finale. Now, Joe, you've
6 been built up so well now --

7 [Laughter.]

8 COMMISSIONER CARR: Let me make sure I understand
9 this design control problem. Is it basically the rationale
10 behind the design, and then the rationale behind any changes to
11 the design that you're missing?

12 MR. KENNEDY: It's really the rationale, right, the
13 design input. That is, taking the basic requirements, design
14 requirements of Part 60 and incorporating them into their
15 design.

16 COMMISSIONER CARR: You mean, why you pick this
17 design over any other design?

18 MR. BUNTING: The question you raised earlier: Why
19 12 feet? Why 300 feet apart?

20 COMMISSIONER CARR: Some substantiation for that.

21 MR. GUPTA: Some of the requirements were very
22 specific, like the two shafts shall be located at these
23 coordinates at the site. They shall be 300 feet apart. They
24 will be 12 foot in diameter.

25 COMMISSIONER CARR: The question is why.

1 CHAIRMAN ZECH: Have you addressed all these concerns
2 to the appropriate DOE officials?

3 MR. THOMPSON: Yes, sir.

4 CHAIRMAN ZECH: You have?

5 MR. THOMPSON: That was those meetings that we've had
6 with them --

7 CHAIRMAN ZECH: I hope so.

8 MR. THOMPSON: -- back in May and July and October
9 and November.

10 CHAIRMAN ZECH: Well, there should be no surprises as
11 to what we're expecting to get from DOE; is that correct?

12 MR. BUNTING: That's correct.

13 CHAIRMAN ZECH: All right. You may proceed.

14 MR. BUNTING: If you would turn to Chart IX, please,
15 this is the resolution approach, which has been tentatively
16 agreed to by the Staff. As stated by Mr. Kennedy, DOE has
17 agreed to implement a design control process for future
18 activities, but it will not be applied to design data that will
19 be presented in the site characterization plan on which DOE
20 expects the Staff and the Commission to review and render our
21 "no objection" or list our specific objections.

22 The Staff has taken the position that DOE's
23 resolution approach for the siting and design information
24 presented in the plan -- this is the site characterization plan
25 -- must include a demonstration that they have included 10 CFR

1 they do want to meet with us on this process next week.

2 The acceptability analysis is planned to be submitted
3 as part of the site characterization plan itself, but the
4 concurrency of this approach has some risk, which can probably
5 be best illustrated from this next and last chart.

6 Turn to Chart X, please.

7 The first area of risk is in the NRC's schedule for
8 review of the site characterization plan. One month has been
9 added to this schedule to accommodate the review by the new
10 Advisory Committee on Nuclear Waste and also by review by you,
11 the Commissioners.

12 Now assuming that DOE's acceptability analysis is
13 submitted with the site characterization next month, the Staff
14 will be required to review this additional documentation during
15 this same intense review period and reach an independent
16 judgment on its adequacy.

17 In addition, we have to also review all the
18 documentation which they will be submitting to close out these
19 numerous action items that are still open. We do not yet have
20 a feel for what this will entail, but if past is prologue, we
21 can expect a substantial additional volume of information.

22 CHAIRMAN ZECH: Is that what that question mark up
23 there means?

24 MR. BUNTING: Yes, sir.

25 CHAIRMAN ZECH: All right.

1 COMMISSIONER CARR: So you're not really looking to
2 generate the design control that you'd like to have a a basis.
3 I'm just trying to make sure the original start point is a
4 workable one.

5 MR. BUNTING: Yes, sir.

6 COMMISSIONER CARR: Okay.

7 MR. THOMPSON: But we are looking for, you know, the
8 aspect of a full QA program, such that we believe that this is
9 an important issue that DOE ought to start those site
10 characterization activities, you know, in a first-rate way.

11 COMMISSIONER CARR: But they don't have to prove that
12 the ESF is being built --

13 MR. THOMPSON: Oh, that's correct.

14 CHAIRMAN ZECH: But it has to be acceptable, and it
15 has to be, you know, it has to give us the confidence that it
16 truly is acceptable. So it just -- I hope it's not going to be
17 something that's right at the margin where there's a concern
18 about it. It should be acceptable in every sense of the word.

19 MR. THOMPSON: And certainly technically sound and
20 acceptable as part of eventually being a part of the repository
21 at the site for a long period of time.

22 CHAIRMAN ZECH: All right.

23 MR. BUNTING: If we could put the chart back up,
24 please, the second area of risk is the DOE schedule, which is
25 shown on this bottom lower line, and I want to talk to the

1 COMMISSIONER CARR: Do you have to finish that before
2 they can start site preparation?

3 MR. BUNTING: No, sir.

4 COMMISSIONER CARR: So really you have to finish it
5 before they can commence with the construction. So you've got
6 a four-month hole in there right now.

7 MR. BUNTING: Yes. I'm going to speak to that.

8 COMMISSIONER CARR: Okay.

9 MR. BUNTING: Now the third area of risk is in the
10 outcome of the acceptability analysis itself. If DOE finds
11 some significant omission or if we, the Staff, have a
12 significant problem with the justification they submit, it's
13 likely going to take time to resolve that problem. That's just
14 another risk that I point out to you.

15 I want to be quick to point out that there is a four-
16 month difference now on this schedule between our scheduled
17 issuance of the site characterization analysis and the start of
18 construction of the facility in November. We don't know how
19 much slip, if any, DOE could tolerate in the issuance of our
20 report and still hold to their start-construction schedule.
21 But as stated earlier, both the Act and our rules require that
22 they defer sinking the shafts until they have considered the
23 Commission's comments.

24 Now to summarize, we presented you today with the
25 factual information, together with the new insights we've

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

2 Questions from my fellow Commissioners?

3 Commissioner Carr?

4 COMMISSIONER CARR: Yes. This thing is designed
5 already, isn't it? So you've already got the --

6 CHAIRMAN ZECH: Excuse me. Answer when you nod your
7 head. Please give us a yes or no.

8 MR. BUNTING: I'm sorry. I want to say that one
9 phase of the design is done already, a preliminary design.
10 They will go three reiterations of the design.

11 COMMISSIONER CARR: We have that already, and so -- I
12 assume?

13 MR. GUPTA: We are getting copies of it. We do not
14 have a full set of the design yet.

15 COMMISSIONER CARR: We can get them.

16 MR. GUPTA: We can get them.

17 COMMISSIONER CARR: So we can get ahead of the
18 problem and the design analysis. We'll know pretty much what
19 areas we're worried about, so when the analysis comes in, we
20 can focus on those first, I would assume.

21 MR. GUPTA: That is correct, yes.

22 COMMISSIONER CARR: Okay. I'm a little worried about
23 management problems. They're playing musical chairs over
24 there. Since I've been here, we've had a lot of different guys
25 in charge over there, and I can't figure out, how do you feel

1 making decisions.

2 COMMISSIONER CARR: Okay. You mentioned that we
3 missed our 30-day goal. How far did we miss it?

4 MR. KENNEDY: I think -- it gets a little confused,
5 because there are some assumptions about --

6 COMMISSIONER CARR: Was it an order of magnitude, or
7 another 30 days, or --

8 MR. KENNEDY: Two weeks or 30 days, something on that
9 order.

10 COMMISSIONER CARR: Is that going to -- are you
11 reevaluating that? Do we need to put more resources and
12 manpower into it?

13 MR. KENNEDY: Our strategy is right now, we've got
14 another one due in shortly, and after the first one is done, we
15 think the others are going to go much smoother, and the first
16 one we get after that will be the test.

17 MR. THOMPSON: I'll be watching that very carefully,
18 Commissioner, because one of the things we are looking at is
19 the staffing levels in order to be able to do our reviews in a
20 timely fashion, and QA is a key area right now.

21 CHAIRMAN ZECH: Commissioner Rogers?

22 COMMISSIONER ROGERS: In the whole process, as you
23 see it, is there the mechanism for identifying any really
24 serious sticking points with respect to our ultimate ability to
25 -- that could be identified as early on as possible? In other

1 exactly the right way to get down there or not is a question,
2 but there's absolutely no question that it's important to get
3 down to depth and start drifting, start exploring, start
4 running the tests at depth. That's the key to the answer to
5 the question.

6 Until we do that, we can do a lot more stuff from the
7 surface, but my impression from talking with my staff, at any
8 rate, is that we've about exhausted our ability to investigate
9 this thing from the surface.

10 COMMISSIONER CARR: So anything from a surface
11 evaluation standpoint that would say this is an unsuitable site
12 has been done, then?

13 MR. BROWNING: That's my impression; yes, sir.

14 CHAIRMAN ZECH: All right. Anything else?
15 Commissioner Curtiss?

16 COMMISSIONER CURTISS: I had just one quick question,
17 going back to the point that Mr. Thompson made.

18 As I understood the way you articulated the point, we
19 are assuming, as an agency, that all of the DOE design
20 requirements are safety-related, unless DOE can establish that
21 they aren't. And I wonder in the context -- well, I guess I
22 have two questions.

23 One, were we -- what was this agency's involvement in
24 the preparation of DOE's subsystem design requirements? Were
25 we involved in that stage?

1 straightforwardly, like the hoist that's used to lower men and
2 materials down the shaft.

3 CHAIRMAN ZECH: Would you speak up just a little
4 louder, please, for the reporter and also the audience. Thank
5 you.

6 MR. KENNEDY: Some are going to go away fairly
7 quickly, like the hoist, for example. That's fairly obvious
8 that that's not going to be something that affects waste
9 isolation.

10 Others may be more difficult to show that they are
11 not important to waste isolation. For example, drilling and
12 blasting of the shaft. Blasting will create cracks in the
13 rock. It will create pathways for water, and that's likely to
14 be one that's going to be an activity that is going to be
15 important to waste isolation.

16 Does that answer your question?

17 CHAIRMAN ZECH: Yes. Commissioner Rogers, you had
18 another question?

19 COMMISSIONER ROGERS: Yes. What's your thought on
20 the expected time to sink these shafts of about 18 months? How
21 does that look?

22 MR. GUPTA: That seems to be realistic, yes.

23 COMMISSIONER ROGERS: Is that 24 hours a day, seven
24 days a week operation?

25 MR. GUPTA: Yes, three shifts. And it would be

1 parallel path that they will submit that design acceptability
2 document. Right now, DOE is trying to submit it at the same
3 time, which should address most of the technical concerns.

4 CHAIRMAN ZECH: I guess my concern about this is, you
5 already know you're going to get a site characterization plan
6 that you're going to have concerns in, and my concern, then,
7 really is the effectiveness of your review.

8 So what you're going to be doing apparently will be
9 repeating some of your concerns as you review this site
10 characterization plan; is that correct?

11 MR. THOMPSON: That would be correct for those
12 aspects -- remember they weren't addressed in the site
13 characterization plan.

14 COMMISSIONER CARR: Is it the plan itself or the
15 details that come with it.

16 MR. THOMPSON: The details that are going to be in
17 acceptability should address the questions that we raised
18 previously with respect to the design adequacy. So we won't be
19 reviewing anything in the site characterization plan that
20 addressed the waste isolation issue, as I understand it.

21 CHAIRMAN ZECH: And in those areas, then -- and on
22 that specific issue -- DOE already knows your concerns, and
23 even though they haven't been finally addressed, they will be
24 addressed eventually; is that correct?

25 MR. THOMPSON: They are addressing that in the

1 design issues that were significant in our mind and we're very
2 important, we've already told you about them, and those will be
3 addressed.

4 Now the broader implication of the problems of lack
5 of design control, as it may have affected some other things,
6 they clearly by definition are not the major, significant
7 issues that would have caused us to say, no, we can't go
8 forward; we don't agree.

9 So those that are important are already on the table.
10 Those will be addressed. To the extent -- and I'm not trying
11 to say we aren't going to have a problem, because every time
12 you go about doing a review like this, it's difficult -- but I
13 think that the big issues are at least on the table, and they
14 are aware of them, and they will be addressed.

15 CHAIRMAN ZECH: All right, fine.

16 COMMISSIONER CARR: Mr. Chairman, I notice that DOE
17 is going to come over and brief us on this on the 9th of
18 December, according to my current schedule.

19 CHAIRMAN ZECH: Yes, I think that's correct.

20 COMMISSIONER CARR: I would hope that you have
21 relayed to them that we want some answers to some of these
22 questions we're asking today before they get here, because
23 obviously their plan is going to come after they get here.

24 MR. STELLO: I assume they're in the audience, and I
25 think you can count on their being aware of the issues that the

1 presentation.

2 I can't help but have the feeling that even though we
3 are talking about something that's going to happen in the
4 future, that the decisions and the questions that we're raising
5 now are extremely important, and we must have confidence that
6 the experts we have in the reviewing of this whole technical
7 issue will be able to proceed one step at a time, carefully,
8 conservatively, but with confidence that we're making the right
9 regulatory decisions.

10 But I do think the Staff is acting responsibly. I
11 would ask you to continue an energetic approach. Continue
12 raising concerns. This is a very unique and important national
13 issue, and we have the special trust and confidence of the
14 public in this regard. I hope all of you will keep that in
15 mind.

16 Our fellow citizens are indeed counting on us to make
17 the right decisions, and it is a large responsibility. So we
18 need to take the time we need, in my judgment, and we need to
19 be careful, conservative in our scientific and engineering
20 judgments, and I think that we're doing that so far. But I
21 just can't emphasize the importance of it, even at this stage
22 this now, that we continue to keep this high on our priority
23 list.

24 And I hope, Mr. Stello, that you will give the Staff
25 every support that they need, and I hope also that you will

1 that they've been putting together for assisting us would work?

2 MR. BUNTING: Yes, sir. Mr. Patrick, the Technical
3 Director, was with us and supported us in our review in October
4 at the Forrestal Building with DOE where we laid out these
5 problems, particularly design control.

6 COMMISSIONER ROGERS: I think it's very important to
7 make sure that they are part of this, even if we're not relying
8 on them for consultation, that at least they are finding out
9 what the problems are, so that they can develop their own
10 systems for future assistance to us.

11 CHAIRMAN ZECH: Is there another comment?

12 MR. KENNEDY: Yes. I should add that just recently
13 they started assisting us on observing DOE audits, including
14 some of the audits of the DOE contractors that are working on
15 the shaft design.

16 CHAIRMAN ZECH: Very good.

17 Are there any comments from my fellow Commissioners.

18 [No response.]

19 CHAIRMAN ZECH: If not, thank you for an excellent
20 presentation.

21 We stand adjourned.

22 [Whereupon, at 11:12 o'clock, a.m., the Commission
23 meeting was adjourned.]

24

25

COMMISSION BRIEFING
ON THE
REGULATORY CONCERNS REGARDING
THE EXPLORATORY SHAFT FACILITY (ESF)
FOR THE YUCCA MOUNTAIN SITE
NOVEMBER 16, 1988

CONTACT:
J. O. BUNTING
X23394

WHAT IS THE ESF?

- TWO 12 FT. DIAMETER SHAFTS, 300 FT. APART
- SURFACE FACILITIES
- DEDICATED UNDERGROUND TESTING AREA 900 FT. X 1100 FT. WITH 3000 FT. OF DRIFTING
- 5000 FT. OF ADDITIONAL DRIFTS FOR EXPLORATION

WHY IS IT IMPORTANT NOW?

- MAJOR DECISION LEADING TO PARTIAL CONSTRUCTION OF REPOSITORY
- NO CONSTRUCTION AUTHORIZATION NEEDED
- NOT A LICENSING ACTION
- IF SITE FOUND SUITABLE, COMPLIANCE DETERMINATION MADE AT LICENSING HEARING

ESF ISSUES

ES-1 PENETRATION INTO BARRIER BELOW
REPOSITORY

- DOE HAS COMMITTED TO ANALYZE NEED FOR PENETRATION OF ES-1 INTO MAJOR ROCK BARRIER BETWEEN REPOSITORY LEVEL AND UNDERLYING WATER TABLE.

DESIGN CONTROL

- THE EXPLORATORY SHAFT FACILITY (ESF)
IS IMPORTANT TO WASTE ISOLATION
- ESF DESIGN ACTIVITIES IMPORTANT TO
WASTE ISOLATION
- ESF ISSUES INDICATE PROBLEM IN DOE'S
DESIGN CONTROL

ESF RESOLUTION APPROACH

