



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

In the matter of:

BRIEFING ON WASTE MANAGEMENT
TECHNICAL REGULATIONS

Place: Bethesda, Md.

Date: April 10, 1980

Pages: 1 - 28

INTERNATIONAL VERBATIM REPORTERS, INC.
499 SOUTH CAPITOL STREET, S. W. SUITE 107
WASHINGTON, D. C. 20002
202 484-3550

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Room 550, East-West Towers
Bethesda, Maryland

Thursday, April 10, 1980

The Commission met, pursuant to notice, for presentation of the above-entitled matter, at 3:00 p.m., John F. Ahearne, Chairman of the Commission, presiding.

BEFORE:

JOHN F. AHEARNE, Chairman of the Commission
VICTOR GILINSKY, Member

1 CHAIRMAN AHEARNE: We now have before us the
2 Waste Management Group.

3 Well, we, I gather are here to -- in the process
4 of going forward with an advance notice, and so I recognize
5 this is not an attempt to say here's what you have
6 implicitly decided not to be the case but now you've now
7 gone through many sets of reviews and it's about time to
8 go out formally to -- for comments.

9 MR. DIRCKS: That's right. I just wanted to
10 stress that point. We've developed the criteria in-house,
11 we've developed it in association with contractors and
12 consultants and standards group.

13 We met with numerous outside specialists groups.
14 We reached the point in the development of the criteria
15 that we feel it necessary now to go out even further for
16 additional comments.

17 And we do not in any way say that this is a
18 regulation even ready for a proposed rule. What we're
19 seeking only is permission to go out for an advancement
20 to continue this input process.

21 This is the second major event in the waste
22 management history of the agency, the first one was the
23 procedural rule. We promised you that we'd be back to
24 you in the spring with the technical criteria, was it.
25

1 But this is not in any way a rule that you
2 would say we are ready to propose. We just want to continue
3 the process by going for an advance notice.

4 CHAIRMAN AHEARNE: I'd like to make an assumption
5 we've all read the paper. There are some points that you'd
6 look at as an assumption -- some points you'd like to make?

7 MR. DIRCKS: I think what we want to do is trace
8 back to something in the major points that we're making
9 in the notice. I think what we want to do is tell you
10 the number of groups that we met with and I think what we
11 might want to do is to tell you the process by which we're
12 going to complete this rulemaking.

13 MR. ROBERTS: I want to restate that we're not
14 asking for your approval on the content of the graph
15 criteria, just on the publication. Is that clear?

16 CHAIRMAN AHEARNE: There are several ways to
17 interpret that. We'll interpret it in a good sense.

18 MR. ROBERTS: That's the way it was intended.

19 It might be useful to start out with a review
20 of the schedule, of the progress today in rulemaking
21 for high level waste.
22

23 And, I think when you have that, you have --
24 Page 1 presents a title line for the three elements, the
25 procedures, the technical criteria, and EIS.

1 The procedure requirements that would establish
2 the regulatory framework were published as a proposed rule
3 last December. The effective rule in the procedures is
4 scheduled for your consideration in September of this year.

5 CHAIRMAN AHEARNE: When did the commentary
6 close on that?

7 MS. COMELLA: March 3rd.

8 CHAIRMAN AHEARNE: Are they -- How is someone
9 coming on -- Are you handling the comments?

10 MS. COMELLA: Yes, we are. We received -- So
11 far we received about 29 comments. They're fairly even
12 divided among the industries, states, and environmental
13 groups. Some even from academics and others.

14 We're in the process of categorizing them now
15 by subject areas and into a systematic fashion,
16 prepare the analysis of staff finding.

17 CHAIRMAN AHEARNE: It still looks like you'll
18 be able to hit the September date?

19 MS. COMELLA: I think so.

20 COM. GILINSKY: What does that -- What does that
21 point signify? Is that when --

22 MR. ROBERTS: It comes to the Commission for
23 your consideration.

24 COM. GILINSKY: It comes to the Commission?
25

1 MR. ROBERTS: Okay. With respect to the
2 technical criteria, we are now at the advanced notice
3 milestone, and the proposed rule on the criteria is also
4 scheduled for your consideration next September.

5 And, that's a very tight schedule and conceivably
6 could be effected by the comments we receive on the advance
7 notice.

8 The period between the proposed and effective
9 rules where the technical criteria is, 13 months includes
10 time for a hearing.

11 In the draft DIS, or environmental statement,
12 whatever it turns out to be, is scheduled to be issued
13 concurrently with the proposed rule on the technical
14 criteria.

15 Then with the question of page 2, why an A&R --
16 Why an advanced notice now, and what it would contain, --
17 An advanced notice at this time would communicate to DOE
18 a concise and early statement of the best thinking available
19 to us.

20 Such information would be helpful to DOE, who
21 will be the license applicant in meeting the President's
22 recently announced schedule.

23 COM. GILINSKY: Can I just take you back for a
24 minute?
25

1 MR. ROBERTS: Yes?

2 COM. GILINSKY: When you say it includes time
3 for a hearing, do you mean something other than people
4 submitting written comments?

5 MR. ROBERTS: Yeah, for the hearing on the --
6 comments received and changes in the rule and --

7 COM. GILINSKY: But are you talking about sub-
8 mitting, I mean, a hearing in writing or a hearing in
9 speaking?

10 MR. ROBERTS: Well, I can't -- The details aren't
11 here, but an opportunity for public input.

12 CHAIRMAN AHEARNE: But isn't there always
13 -- It's always public comment on a proposed rule.

14 MR. ROBERTS: Spoken here.

15 MR. DIRCKS: I think when it's a public comment,
16 you're not going around and asking for --

17 CHAIRMAN AHEARNE: Well, I guess you've --
18 There's still some lack of --

19 MR. DIRCKS: I think it's the normal -- public
20 should get to comments, resolve the comments, and come
21 forward as a rule.

22 COM. GILINSKY: So you really mean an opportunity
23 for the public to comment on the proposed rules?

24 MR. ROBERTS: Well, if there had to be a public

1 meeting, there's time here for that public meeting.

2 This will be quite a controversy rule, or high
3 interest in this one and I think that we should take into
4 account there may be a need for a public meeting.

5 CHAIRMAN AHEARNE: I think that's something
6 we'll have to talk about. We're never quite sure about --
7 A public meeting on a big rule like this, I'm not even
8 quite sure how the whole thing would be staged.

9 My view is that we have published the rule for
10 comment and we get comments back in. I'm not quite sure
11 of a public meeting.

12 You'd have -- You'd probably have to wait,
13 atleast to see what kind of comments you get on this
14 advanced notice first before you -- Okay.

15 MR. ROBERTS: An advanced notice, this time we
16 formalized and further broadened public participation in
17 the development of technical criteria.

18 As was noted earlier, there has been considerable
19 staff effort to date in developing the criteria and these
20 have been carried out and opened in public manner. Drafts
21 have been circulated to the agencies, groups, and in-
22 dividuals, and I'll go through a list of those in a minute.

23 But a complete statement of the results has
24 never been made. And, the content and emphasis of the
25

1 subject matter has changed from draft to draft.

2 And further, much of the thinking which underlies
3 the staff work, such as a particular aspects of the prob-
4 lem to be solved and the possible approaches to their
5 solution is implicit in the drafts but it's never been
6 stated exclusively.

7 An advanced notice would provide such a statement
8 and would signal the start of formal rulemaking.

9 Page 3 is a list of the staff interaction. Unless
10 you want to go into it, I just note it. I will point out
11 that the type of involvment, the type of information that
12 has been considered is quite different with each of the
13 groups.

14 The Kingstone group, for example, centered on the
15 broad performance objectives and the general approach
16 taken in developing the criteria.

17 And by contrast, the University of Arizona review
18 on the right-hand side near the bottom, which took place
19 last January, focused on the earth science and engineering
20 criteria.

21 COM: GILINSKY: Could I ask you, when you say,
22 for example, AIF briefing or NRDC briefing, who is briefing
23 whom? Are you briefing them, or are they briefing you?

24 MR. ROBERTS: I'll refer that to Jack, on this.

1 MR. MARTIN: Well, on the AIF briefing, for
2 example, we went over it with the subcommittee of the AIF
3 just exactly what was in the draft we were working on at
4 the time in some detail and got reaction and comments
5 back from them on it.

6 The same with, like the EPA briefing, for example,
7 where it was a mutual back and forth, to which we did keep
8 minutes so there was a record of what was said and who
9 said what about it.

10 MR. ROBERTS: I call your attention to page 4
11 then. In the staff's view, the problem -- repository
12 be very different in many respects, for many facility for
13 which there is licensing experience at this time.

14 And in the Staff's view, the problem -- unique
15 aspects, the problem can be described as follows:

16 There will be three distinct stages in the life
17 time of the repository, each involving different public
18 health protection considerations.

19 During the construction-operational phase,
20 criteria will be needed to deal with construction techniques
21 and placement techniques and operation procedures and
22 radiological protection of workers and persons who
23 live nearby.

24 Following the closure of the repository, the
25

1 fission product in the waste will dominate the radiological
2 hazard. And the heat output could jeopardize the long-
3 term integrity of the repository by causing effects such
4 as dormal uplift of the rock, and changes in rock stress
5 field and disturbance of ground water flow systems.

6 So, design criteria are needed to accommodate
7 those factors.

8 Within approximately 1,000 years, the fission
9 products would have decayed to such a level that the
10 actinides become the principle contributors to radiological
11 hazards.

12 Similarly the heat output from the waste will
13 have dropped off markedly. During it's final phase, the
14 useful lifetime of engineered features, such as waste
15 containers and repository design will have been exceeded.

16 Therefore, properties that effect rate of
17 leaching and transport of the waste will become important.

18 The physical extent of the repository is also
19 a unique feature and that includes not only the surface
20 and sub-surface operations areas, but also the surrounding
21 rock.

22 The surface facilities can be expected to cover
23 an area of 200 acres a square kilometer. The sub-surface
24 area will be in the range of 2 to 8 square kilometers.
25

1 And most analyses assume the repository radius
2 of about 1 to 2 kilometers.

3 Since the surrounding rock will be the primary
4 barrier, performance criteria for that barrier which are
5 capable of being demonstrated will be needed.

6 Also assurance will be needed that natural
7 effects such as floods, earthquakes and glaciers will
8 not effect the performance of the geologic area.

9 The interaction between the waste and the sur-
10 rounding rock is another characteristic unique to reposi-
11 tories.

12 The waste will effect the performance of the
13 rock, most notably through heat output, so criteria that
14 keep the adverse within acceptable limits will be needed.

15 There will also be a need to treat uncertainties.
16 The technology of deep underground structures has not
17 developed a body of precise codes and standards which
18 can be used as acceptable basis for repository design.

19 Therefore, on-basis information will have to
20 be developed fresh and earth scientists will be called
21 upon to assess and quantify factors never before done
22 and in ways almost opposite to their experience.

23 Geologists who have primarily focused on the
24 past and present, will be called upon to make projections
25

1 into the future.

2 Ground water hydrologists will be called upon
3 to assess low permeable rocks and the absence of water
4 when their experience has been largely with highly permeable
5 rocks in the search of water.

6 And finally, inadvertant or purposeful intrusion
7 into repository, could short-circuit all of the protective
8 features provided and the consequences would vary widely
9 depending on the point in the lifetime of the repository
10 and when it occurred.

11 So, institutional controls that would prevent
12 intrusions cannot be expected to be effective for more
13 than 200 years and I think Jack Martin will be going into
14 some of the possibilities for decreasing the likelihood
15 of intrusion when he goes through the considerations of
16 developing technical criteria.

17 I'll turn it over to Jack.

18 MR. MARTIN: Yeah, I'll pick up here.

19 What I would like to do is to discuss the approach
20 that we're taking to deal with the problem that is very
21 complex that Craig described.

22 I'll go into it briefly without alot of elabora-
23 tion.

24 Basically what we have done is structured 4
25

1 interlocking and interrelated considerations that are on
2 the last page.

3 I think it's important to view these as a whole
4 and not any one individually.

5 But, basically we've elected to pursue the
6 multiple barrier system where each barrier to a degree
7 is independent and to a degree is redundant, not completely
8 but to a substantial degree.

9 And, the three barriers we've identified are
10 the waste package, the engineered underground structure
11 itself, and also lastly the site, geologic setting.

12 And, we've taken an approach of putting at least
13 a minimum performance objective on each of these and
14 we've selected minimum performance objectives being such
15 that by meeting the minimum objectives, whole areas of
16 uncertainties are avoided.

17 For example, on the waste package, we selected
18 a lifetime of the package to contain the radio
19 of 1,000 years and as long thereafter as can be reasonably
20 achieved.

21 So, the engineering of an underground structure,
22 for example, we've selected a performance requirement that
23 the structure has to protect the waste package so that
24 it stands a chance of meeting the 1,000 year lifetime and
25

1 that the underground structure and the waste package to-
2 gether should limit the release of radio to one
3 part of 100,000 per year after package failure, which
4 will insure a very very low release rate to the surrounding
5 rocks.

6 Lastly, on the site itself, we have a performance
7 requirement that would be apparently stable, simple site
8 and have a numerical requirement that the ground water
9 transport time from the site to the accessible environment
10 be atleast 1,000.

11 These three things together, we feel deal with
12 the considerable uncertainty that would otherwise tend
13 to confound demonstrative compliance with the EPA standard.

14 In addition to the minimum performance standards,
15 we have set out some siting criteria for those who are
16 out screening the country for sites.

17 We tried very hard to come up with some definitive
18 and numerical siting criteria, and made it very clear
19 that if you have these it's unacceptable and if you have
20 these other requirements, it's acceptable.

21 As yet, we've been unable to find any categorical
22 siting criteria to which we can't figure out logical
23 reasons for exception.

24 So, what we have done is structured a series of

1 potentially adverse aspects that are to be avoided and
2 provided a way of -- providing an exception for that if
3 there are -- a good case can be made that there are enough
4 compensating good features.

5 This then becomes primarily useful in comparing
6 sites. Perhaps in the comment period we'll get some
7 additional insights on how to be more definitive in some
8 absolute siting requirements. But we feel what we have
9 today provides substantive guidance without unduly elimina-
10 ting sites that may be good sites.

11 The last feature is one that's -- We call retrieva-
12 bility. Basically it's a requirement of the design that
13 if we design such that future generations could elect
14 to maintain the waste in a retrievable condition, reasonably
15 retrievable condition, for at least 50 years after it's in
16 place.

17
18 The idea here is that we don't want to bequeath
19 people of repository because of thermal conditions as
20 unstable or caving in.

21 It will allow people, if they want to, to watch
22 it for 50 years. If they don't want to take advantage
23 of that, they can close it up and revocably seal it.

24 But it adds a certain additional measure of
25 time during which one can watch the performance if there

1 is still any substantial uncertainty left.

2 That, then, in summary are the major features
3 of the role. There are many, many other details, but in
4 broad outline that's the essence of it. And that's the
5 summary that I have.

6 CHAIRMAN AHEARNE: Could I ask you a question?

7 Now, page 25. And you said a few words about
8 stability.

9 MR. MARTIN: Well, the stability number and the
10 associated 10,000 years is a definition that keys closely
11 with the EPA standard. EPA for a variety of reasons,
12 which I agree with, has concluded that trying to foresee
13 into the future much beyond about 10,000 years gets to
14 be pretty futile, particularly coupled with the fact
15 that the -- I mean in a geologic sense, not that so much
16 what people will do, but trying to predict ahead beyond
17 that is very difficult.

18 And in addition, the repository is definitely
19 less hazardous than the initial ore by that time. So,
20 we basically for predicting stability have keyed into the
21 EPA definition. It seems about as reasonable as any.

22 CHAIRMAN AHEARNE: On 27. You say under D
23 at the top that emissions in the general design criteria
24 don't relieve an applicant from the requirement of
25

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1 providing safety features. By that you mean that although
2 we haven't required it, he still is required?

3 MR. MARTIN: I think isn't that a standard
4 thing in most of the regulations that there may be -- there
5 may be things that need to be done in addition to what
6 we have in here to make it safe. You know, maybe that
7 will come up in the --

8 CHAIRMAN AHEARNE: Bob, is that just a boiler-
9 plate design?

10 MR. MINAGUE: Yes, I think it is. The basic
11 concept that underlies it is that the applicant has some
12 responsibility to address the safety question, and that
13 just meeting the bare bones of the regulation, which
14 would impose on us a burden of foreseeing all possible
15 eventualities, it's just not a reasonable posture. I
16 wouldn't -- I'm not sure that exact wording is boiler-
17 plate. But the concept, it certainly runs through all
18 of our regulations.

19 COM. GILINSKY: Could I just take you back to
20 your comment that after 10,000 years the facility -- the
21 contents of it are no more hazardous than the original
22 of a uranium ore. What -- how do you put numbers on
23 that?

24 MR. MARTIN: Well, I hesitate to pass out
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this semi-long draft that I brought, but there's been a number of indexes that people have come up with in the last couple of years to try to make some relative comparisons among different hazards. And one of the schemes it's come up with, I just took a draft that EPA put together, was a hazard index where you compare biological threat of the pilable waste with time versus just uranium ore with time, and when do they both get to be about the same amount you'll allow in drinking water, for example.

And for spent fuel, the spent fuel becomes less hazardous than the apparent ore body at about 1 -- at about 10,000 years. Right at 10,000 years.

In other words, you could mix more spent fuel in your water than you could uranium ore.

COM. GILINSKY: Is it actual spent fuel, or is it all of the material in the repository homogenized in some --

MR. MARTIN: All of it homogenized, right.

Right. If you take a reasonable --

COM. GILINSKY: Including the dirt --

MR. MARTIN: -- size of the repository and mix it all up so it looks like an ore body, a spoonful of that would be less hazardous than a spoonful of the

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1 ore at that point.

2 Now, that's not an exact comparison because
3 the nuklides are different in -- but it's a way, for
4 example, that's frequently used to compare it to
5 Cadman ore or mercury.

6 COM. GILINSKY: Why would we impose requirements
7 that would deal with conditions that far in the future
8 then?

9 MR. MARTIN: Well, I don't think we do. The
10 EPA standard, for example, which we are implementing
11 cuts off at 10,000 years partly for that reason.

12 COM. GILINSKY: Well, let's see. If that's
13 the case at 10,000, then presumably it's the case at
14 about a 1,000. Is the --

15 MR. MARTIN: Well, it -- it's still a few times --

16 COM. GILINSKY: Because the -- the maximism
17 change very much --

18 MR. MARTIN: -- higher than natural ore at
19 a 1,000. Maybe three or four times higher.

20 And as I say, that isn't an exact comparison.
21 I hate to get into a real rigorous comparison, but it's
22 a useful way to think of the problem. But, you know,
23 one has to point out that uranium ore body is there because
24 it's been capture in the geologic bottle, and so you know
25

3/19

1 it's going to stay there. Or you don't really know
2 that about the repository. You hope you were smart
3 enough to do it that way.

4 But it's a -- I think it's a useful thumbrule
5 as any.

6 COM. GILINSKY: I think it is, too. I was
7 just trying to get a better feel for it. Thank you.

8 CHAIRMAN AHEARNE: Also, on page 77, what is
9 the Batos Zone or -- zone?

10 MR. MARTIN: Well, that's an idea that a fellow
11 at the USGS has been pushing. I think it's very attractive.
12 It's like out West frequently there are like a
13 for example, there may be 400 feet to the water table,
14 and there is no captured aqua for above it. It's just
15 400 feet of unsaturated soil until you get to the water
16 table. And that area above the water table up to the
17 surface is the Batos Zone.

18 And the attractive feature of it is that you
19 don't have water perculating down through it. The
20 evaporation rate is so much higher than the rainfall
21 that you don't get any recharge down to the ground water.
22 And we don't want to -- we're not meaning to preclude
23 that, we're just not covering it here.

24 CHAIRMAN AHEARNE: Now, by saturated, you
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1 mean you're assuming that for calculational purposes
2 that it's in medium which is water saturated?

3 MR. MARTIN: Right.

4 CHAIRMAN AHEARNE: The 50 year retrievability,
5 is that rule of thumb more than zero, less than a hundred?

6 MR. MARTIN: Well, the way --

7 CHAIRMAN AHEARNE: Or is it a two-number?

8 MR. MARTIN: Well, I guess the way we came up
9 with that number was that it will probably result in
10 around a 100 years altogether.

11 We figure 25 years, maybe to load the
12 repository and 50 years to watch it, and maybe another
13 25 years to unload it if you have to.

14 But our conclusion was that ought to leave
15 plenty of time to resolve residual doubts. And in
16 addition the thermal insult, if you will, for the
17 repository is reaching the maximum above that point. So
18 that you should be able to validate whatever the cal-
19 culations or predictions that are still sort of shaky.
20 And beyond that there's not a whole lot more new data
21 going to come in.

22 CHAIRMAN AHEARNE: On page 33, the siting
23 requirements you have, before you can conduct investigations
24 in the horizontal radius to about 100 kilometers, what
25

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kind of investigations are in mind there?

2

MR. MARTIN: Well, these are the far-field investigations. For example, an investigation of surface weather; an investigation of hydralological underground hydralological features and --

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6

CHAIRMAN AHEARNE: Would you have in mind test borings?

7

8

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10

11

MR. MARTIN: Well, this is purely a surface kind of thing. We're not advocating any underground exploration to that degree. Perhaps the boring might be required, but we're not specifying.

12

13

CHAIRMAN AHEARNE: But you're not specifying.

14

15

16

MR. MARTIN: We want to try to provide some direction on the site screening program. You ought to look at least that far so we don't have to get in an argument about it later.

17

18

19

CHAIRMAN AHEARNE: Yes. My question was did you have it in mind requiring a series of test borings out to a 100 kilometers around the site.

20

21

22

MR. MARTIN: No. There might be a case where that could be called for, but I don't think --

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24

25

CHAIRMAN AHEARNE: Now, 35. What is the geologic profits?

MR. ROBERTS: A region of similar geologic

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1 characteristics. I just heard about it last evening.

2 CHAIRMAN AHEARNE: Well, yes, I was wondering
3 if we were having a new -- similar to a tectonic problem.
4 This is going to be a new phrase that we're introducing.

5 MR. MARTIN: I think something like the
6 Tasco Basin, for example, where you have a hydrological
7 basin, and the Washington or the Los Bandanos Basin, or
8 a salt zone.

9 CHAIRMAN AHEARNE: Is that a term of art or --

10 MR. MARTIN: I don't know, Craig. I don't
11 know.

12 MR. ROBERTS: We should defer to a geologist.
13 In my view it is not a scientific term, a geologic term.

14 CHAIRMAN AHEARNE: I guess the question is
15 why are we using it as our description?

16 MR. MINAGUE: Mr. Chairman, I predict we'll
17 get into the same kind of problem. I think you just
18 made a very good comment that we'll take into account
19 as we work further. It's the same basic problem --

20 CHAIRMAN AHEARNE: Yes. It's not -- let's not --
21 since we just heard --

22 MR. MINAGUE: All that says is we have to
23 define it at this point.

24 CHAIRMAN AHEARNE: Yes.

25 MR. MINAGUE: That's a problem wording it. Not --

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1 CHAIRMAN AHEARNE: Yes, yes. Right. Right.

2 How does one include undiscovered deposits?

3 I mean, the requirement here is the department
4 shall include undiscovered deposits. It's on page 35.
5 There's a hand in the back.

6 MR. WRIGHT: Mr. Chairman, most people choke
7 when they see that term. But it's a -- it refers to a
8 technique that's becoming more and more important in
9 assessing national resources of any sort.

10 The geological survey, for example, in its
11 estimate of the oil and gas resources in the United States
12 includes an estimation of oil and gas contained in the
13 clauses that are expected to be there geologically, but
14 haven't been found yet.

15 Now, the Department of Energy, for example --

16 CHAIRMAN AHEARNE: I am well aware of the --
17 familiar with the speculative of uranium. I know the
18 program well.

19 MR. WRIGHT: All right, sir.

20 MR. MARTIN: This sounds like another thing
21 like geologic provinces.

22 CHAIRMAN AHEARNE: I understand the concept
23 you're working on. I think it'd better be better defined
24 than it is.
25

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1 MR. MARTIN: I agree.

2 CHAIRMAN AHEARNE: In the next -- on the next
3 page, on page 36 where it's talking about the
4 Do we in our -- does this lead to the site characterization
5 requiring examination to two kilometers outside the
6 repository?

7 MR. MARTIN: No. It requires doing an investiga-
8 tion to have a -- these are for -- to get some reasonable
9 assurance that the repository itself meets the -- or you
10 know what the properties are.

11 CHAIRMAN AHEARNE: Yes.

12 MR. MARTIN: It does not require that you mine
13 around two kilometers around the outside of it. The
14 two kilometer order is something that we've established
15 so to make sure that you don't lease it if by analogy
16 you can argue that it ought to extend at least that far.

17 CHAIRMAN AHEARNE: Yes. No, I can understand
18 the logic. My question is really -- getting back to --
19 you know, the debate on what are we going to require at
20 site characterization, and is this -- would this lead
21 you to conclude that you have to go --

22 MR. MARTIN: No. Not unless the thing is so
23 discontinuous that you can't predict it. It turns out
24 that thermal effects extend out at least two kilometers.
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1 And it's important to know --

2 CHAIRMAN AHEARNE: Yes. I'm not taking exception
3 with the importance. It's just that I'm trying to --

4 MR. WHITE: Mr. Chairman, this would lead into
5 when we get into giving guidance on site characterization
6 you are anchored on this. We would be more specific
7 about the kinds of information and tests.

8 CHAIRMAN AHEARNE: Yes, I know.

9 My question really, though, was one of the big
10 debates that, as many of you know, that we are having,
11 for example, with DOE, and with DOE and the Congress is
12 what are we going to end up requiring for our site
13 characterizations? And the issue, for example, of how
14 much horizontal excavation is going to be required.
15 But I was interested in finding out whether this statement
16 in here would end up requiring horizontal to work out to
17 two kilometers outside the --

18 MR. WHITE: No, no. The idea was that you
19 would make projections out to that distance --

20 CHAIRMAN AHEARNE: Fine.

21 MR. WHITE: -- for the purpose of exploratory
22 excavation just to see what's there in your field.

23 CHAIRMAN AHEARNE: Fine.

24 On page 77. And this might, again, be just a
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3/26

1 boiler plate provision. I notice that on the container
2 and packaging it says that it must be done in accordance
3 with generally recognized codes and standards except as
4 authorized by the commission upon demonstration, et
5 cetera. Is that a --

6 MR. MINAGUE: Yes.

7 CHAIRMAN AHEARNE: That's just a boiler plate.

8 All right, that concludes my questions.

9 COM. GILINSKY: I'm all for putting us out since
10 it is just an advance notice and -- and it's good to get
11 it on the streets so everyone can see it and get idea
12 of what the thinking here is and -- and start commenting
13 on it.

14 CHAIRMAN AHEARNE: Peter?

15 MR. BRADFORD: I have no other questions.

16 CHAIRMAN AHEARNE: Let me ask, then, one other
17 item.

18 On this schedule does it -- if I put a line
19 on there called EPA?

20 MR. MARTIN: Well, EPA has sent their standard
21 forward to Hawkins, which we expect to see it for inter-
22 agency review, and which is a formal step, momentarily.
23 So, I would say that they are very close to where we are.
24 It's moving --
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CHAIRMAN AHEARNE: What steps will they go through, then, after it goes for inter-agency then what?

MR. MARTIN: Well, it goes for inter-agency review, and I believe in parallel it goes to a peer review group that they have internally, and then to for issues. So, they expect if things go right to probably have it proposed in mid-summer. July.

CHAIRMAN AHEARNE: That would be as --

MR. MARTIN: As a proposed -- a little bit ahead of us probably.

And I think that the last time I heard the -- we've been keeping a fairly good track of what EPA is doing. And I don't think we have any major conflicts between what we are doing and what they will be proposing.

CHAIRMAN AHEARNE: Okay. Thank you very much.