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126th Meeting

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON NUCLEAR WASTE

(ACNW)

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126TH MEETING

+ + + + +

WEDNESDAY,

MAY 16, 2001

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The Committee met at the Nuclear Regulatory Commission, Two White Flint North, Room T2B3, 11545 Rockville Pike, at 10:30 a.m., B. John Garrick, Chairman, presiding.

COMMITTEE MEMBERS:

B. JOHN GARRICK	Chairman
GEORGE M. HORNBERGER	Vice Chairman
MILTON LEVENSON	Member
RAYMOND G. WYMER	Member

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

(10:30 a.m.)

CHAIRMAN GARRICK: The meeting will come to order. We're going to get a briefing this morning on the draft environmental impact statement. The committee member that's going to lead the discussion will be George Hornberger, and he will introduce our guest.

VICE CHAIRMAN HORNBERGER: Okay. So the ACNW has looked at the draft environmental impact statement, the DEIS. We had some comments on the draft EIS. I think that we're pretty familiar with the material that's in the DEIS. And Jane is going to give us an update, because, as we know, DOE has recently issued a supplement to the draft EIS.

Jane, I think that we're a technical committee, and what we're most interested in hearing from you is how -- you know, what the substantive changes are to the DEIS and changes, sort of, if there are any, to the bottom line, in terms of what the environmental impacts may have -- how they may have changed. And with that, I'll let you begin.

CHAIRMAN GARRICK: Have we sufficiently punished Tom Kress for trying to write on the screen?

(Laughter.)

1 MS. SUMMERSON: Well, George, my  
2 background is technical also. I am a geologist by  
3 training. But for the last nearly five years at Yucca  
4 Mountain I worked in the Planning Area, and I've just  
5 moved into this job within the last three months,  
6 replacing Ken Skipper when he went to Denver to the  
7 Bureau of Rec. My learning curve is vertical at this  
8 point, so I apologize in advance. I will probably not  
9 be able to answer detailed technical questions. I'm  
10 not as familiar as I should be. But I have Mr. Joe  
11 Rivers, who is the Project Manager of Jason  
12 Technologies, who is our independent EIS contractor,  
13 and he will deal with any technical issues. If  
14 there's anything we can't handle, of course we'll get  
15 the information for you. And this is on the  
16 supplement.

17 A little background in case there are  
18 people here who have not been as intimately involved  
19 with the process as many of us. You know, the draft  
20 environmental impact statement did come out in 1999,  
21 August. It described the preliminary design concept.  
22 It identified other design features that were under  
23 consideration. It evaluated the impacts of  
24 transporting nuclear fuel, and it evaluated a no-  
25 action alternative. The public comment period for

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1 that was 199 days, had 21 public hearings, and we  
2 received over 11,000 comments, which we are still in  
3 the process of finalizing responses to.

4 This EIS is a little unique in terms of  
5 EISs, because the Nuclear Waste Policy Act does put  
6 some restrictions on it. First of all, it requires  
7 that it accompany any basis for a site recommendation  
8 that should be made, and therefore that constrains the  
9 timing of this EIS. It also states that this EIS need  
10 not consider the need for repository, the initial  
11 availability of it, alternative sites or alternatives  
12 to geologic disposal. Those things were covered in a  
13 generic geologic disposal EIS in the '80s.

14 The supplement to the draft was released  
15 and distributed on Friday, May 4. The EPA Notice of  
16 Availability was Friday, May 11, and that started our  
17 public comment period. We have planned a 45-day  
18 public comment period; it will end June 25. The  
19 Department believes that's an adequate time period  
20 because the body of the supplement is only about 70  
21 pages long, including graphics. This is a small  
22 document, easily readable in a couple of hours for a  
23 person with a general technical background. And it's  
24 limited in scope.

25 We have three public hearings planned in

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1 the Yucca Mountain vicinity. We're limiting it to the  
2 Yucca Mountain vicinity, because these are all changes  
3 to the design of the repository, so they would be  
4 local issues.

5 The purpose of the supplement is to update  
6 the design information that was presented in the  
7 draft. The draft EIS did anticipate that the design  
8 would continue to evolve, and it has. The evolution  
9 has focused on reducing uncertainties, increasing  
10 operational flexibility, and improving safety and  
11 efficiency. The supplement refers to impacts that  
12 would be associated with the flexible repository  
13 design that is described in the Yucca Mountain Science  
14 and Engineering report, which was also released on May  
15 4.

16 The fundamental aspects of the repository  
17 design have not changed. As a result of the changes,  
18 the enhancements, to the design, some small but not  
19 significant increases in impacts have been recognized  
20 compared to the DEIS. And so we are releasing this  
21 supplement to solicit public comment on these changes  
22 in the design.

23 The purpose of the supplement, together  
24 with the DEIS, the supplement presents the most  
25 current and comprehensive statement of the design and

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1 the analyses regarding the impacts from the design.  
2 In the final EIS, we will integrate the draft  
3 environmental impact statement, the supplement, and  
4 all of the comments that we received on both the draft  
5 and the supplement integrated in a single body in the  
6 final.

7 VICE CHAIRMAN HORNBERGER: Is there a  
8 planned time frame for release of the final EIS?

9 MS. SUMMERSON: Well, it has to accompany  
10 the SR, as you know. And at the moment we're looking  
11 at in early fiscal year '02.

12 The Department wants to emphasize that  
13 these design changes are not a surprise. It was  
14 anticipated in the draft that the design would  
15 continue to evolve, stated several times, and in fact  
16 Appendix E focused on alternative design concepts that  
17 were being considered by the Department at the time.  
18 And we all recognize that the design will continue to  
19 evolve if we move forward, if there is a site  
20 designation and we move into licensing, there will  
21 continue to be evolution of the design due to  
22 interactions with the oversight agencies, the  
23 regulatory body, and this type of thing.

24 Some of the design features that were  
25 discussed in Appendix E of the draft, and that have

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1 now been incorporated, aging and blending of waste,  
2 the lower temperature operating conditions, potential  
3 for longer post-emplacement ventilation period, and  
4 the wider drift spacing and variable waste package  
5 spacing. And all of these are to address thermal  
6 options for thermal management of the repository.  
7 Drip shields are for protection of the waste packages,  
8 both from water and from rock, change in waste package  
9 materials, and changes to ground support options and  
10 waste package supports.

11 CHAIRMAN GARRICK: Now are you going to  
12 comment on which of these have made the most  
13 difference in terms of the repository performance?  
14 Are you going to kind of rank these in terms of their  
15 impact on performance?

16 MS. SUMMERSON: When you say performance,  
17 are you --

18 CHAIRMAN GARRICK: Safety performance.  
19 Performance in the sense of the performance  
20 assessment.

21 MS. SUMMERSON: So it would be post-  
22 closure performance.

23 CHAIRMAN GARRICK: Yes, post-closure.

24 MS. SUMMERSON: I had not --

25 CHAIRMAN GARRICK: Okay.

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1 MS. SUMMERSON: -- come prepared to do  
2 that. That is addressed in the Science and  
3 Engineering report, and will be addressed in the  
4 preliminary site suitability evaluation when that  
5 comes out in the early part of the summer.

6 CHAIRMAN GARRICK: Yes. Well, the only  
7 thing I was thinking of, if only one or two of these  
8 made a big difference or one made ten times the impact  
9 of the other, if there was any way you could just give  
10 us some perspective of their relative importance. But  
11 if not, yes, it's in the Science and Engineering  
12 report.

13 MS. SUMMERSON: The way that --

14 MR. RIVERS: Jane? If I might add -- Joe  
15 Rivers with Jason Technologies -- it's somewhat hard  
16 to necessarily say whether one as a factor of ten more  
17 important than the others, because the long-term  
18 impacts within the 10,000-year regulatory period for  
19 the draft EIS, which we'll base on the VA design, were  
20 very small. They were close to zero. What has come  
21 out of the TSPA for the SR design currently is that  
22 within the 10,000 period they more closely approach  
23 zero. You don't have failures of waste packages  
24 within the 10,000-year period. The post-10,000-year,  
25 million-year projections are relatively the same.

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1 They are not significantly different. But I would say  
2 that the design features that are changed that impact  
3 temperature are more -- their primary reason is to  
4 reduce uncertainties as opposed to necessarily reduce  
5 the projected dose. However, the drip shields and the  
6 waste package materials, I would say, probably have  
7 the most direct impact on performance.

8 CHAIRMAN GARRICK: Okay. So I would guess  
9 that if it had a significant impact on uncertainty,  
10 then it probably had an impact on the magnitude and  
11 timing of the peak dose.

12 MR. RIVERS: Yes, it probably did. The  
13 TSPA is not -- I think right --

14 MS. SUMMERSON: Well, they haven't  
15 finished the sensitivity study on those.

16 MR. RIVERS: Well, they haven't,  
17 especially with the lower temperature operating mode,  
18 they haven't finished all the TSPA runs. They don't  
19 anticipate much sensitivity associated with the  
20 thermal design. But right now, I believe, for the  
21 higher temperature operating mode, the peak dose  
22 occurs somewhere around 550,000 years. And that's  
23 presented in the supplement and in the Science and  
24 Engineering report.

25 MS. SUMMERSON: The sensitivity studies

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1 for the lower temperature will be presented in the  
2 preliminary site suitability evaluation that will be  
3 in early summer.

4 CHAIRMAN GARRICK: This is one of the real  
5 conflicts of this whole exercise is that the better  
6 containment provide, the more you push out the peak  
7 dose; the more you push out the peak dose, the greater  
8 the uncertainty. And I was just curious about what  
9 these changes meant in those kinds of terms.

10 MR. RIVERS: Another way to answer your  
11 question and something that we see as reduce  
12 uncertainty and as we try to reduce long-term dose, it  
13 tends to increase short-term impacts. They're not in  
14 the significant range by any stretch, but compared to  
15 the draft, when you have longer ventilation periods or  
16 you have wider spacing and things like that, you tend  
17 to increase some of the short-term for the benefit of  
18 decreasing uncertainty or decreasing dose in the long-  
19 term.

20 CHAIRMAN GARRICK: Yes. Thank you.

21 MS. SUMMERSON: Other things that have  
22 changed, a solar energy facility has been added to the  
23 design to provide some of the power needed. There's  
24 a revised emplacement drift layout. This is to make  
25 the ventilation more efficient. And an expanded

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1 capacity of the waste handling building to allow  
2 blending for the aging or blending of waste.

3 CHAIRMAN GARRICK: If you have any excess  
4 energy from the solar energy, send it to California.

5 (Laughter.)

6 MR. RIVERS: Jane, if I might also add,  
7 the emplacement drift layout, that also refers to the  
8 general layout of the facility from, say, a -- this is  
9 not exact -- but from a Northwest layout. It was  
10 shifted approximately 90 degrees to take advantage of  
11 stability in some of the rock. That's what that  
12 really refers to.

13 MS. SUMMERSON: But an example of one of  
14 the things Joe was mentioning in adding a solar energy  
15 facility, in the short-term you have increased the  
16 transportation, the materials for that solar energy,  
17 not nuclear materials but of the materials to build  
18 it. And you've got worker safety involved in the  
19 building of it, and that type of thing. So that in  
20 that sense there is an increase in the impacts in the  
21 short-term construction and operation that we see.  
22 But, again, it's not significant; it's very small.

23 MEMBER WYMER: Is there enough solar  
24 energy available to make any difference at all?

25 VICE CHAIRMAN HORNBERGER: Have you ever

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1       been to Nevada on a cloudy day?

2                   MS. SUMMERSON: We have a week or so every  
3       year.

4                   MEMBER WYMER: You've got other energy  
5       sources, certainly. I just wondered whether that  
6       makes a one percent addition to the total energy of  
7       the site or ten percent addition.

8                   MR. RIVERS: Well, what it does, if I'm  
9       recalling some numbers --

10                  MS. SUMMERSON: Three megawatts.

11                  MR. RIVERS: Well, it's three megawatts  
12       electric. It's, from what I understand, going to be  
13       one of the largest solar voltaic arrays in the world.  
14       I believe the peak usage is somewhere around 48 to 50  
15       megawatts during the peak time in the repository.

16                  MEMBER WYMER: So six percent.

17                  MR. RIVERS: Yes.

18                  MR. CAMPBELL: Can I ask a question?

19                  MR. RIVERS: Sure.

20                  MR. CAMPBELL: What kind of land area  
21       would be required to build that kind of facility, and  
22       what are the environmental impacts of that?

23                  MR. RIVERS: Environmental impacts of land  
24       disturbed I think for the area of the voltaic array is  
25       between 20 and 40 acres. When you take into account

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1 the land disturbed associated with construction, the  
2 roadways and access roads to the facility, right now  
3 it has not been -- the decision for the site of it has  
4 not been -- there are a number of sites within the  
5 land withdrawal area that could be used. But the  
6 total is approximately 50, 52 acres.

7 MR. CAMPBELL: So it's not significantly  
8 larger than the repository processing in the area.

9 MR. RIVERS: Oh, no, no, no, no. It does  
10 not dwarf the repository. Yes, that would --

11 MS. SUMMERSON: Fundamental aspects of the  
12 repository design in the proposal have not changed the  
13 DEIS. I recommend you look at your handout to see the  
14 pictures. On the upper left there, the concept of an  
15 underground geologic repository obviously is still  
16 what we're working with. The transportation modes and  
17 mechanism for identifying routes using the Department  
18 of Transportation regulations, that hasn't changed.  
19 The environmental area that the potential repository  
20 would be built in has not changed. The basic concept  
21 of the waste packages have not changed. And our no-  
22 action alternative has not changed. All of those  
23 remain the same as in the draft, and they are not  
24 addressed in the supplement.

25 If it was not a change, we did not address

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1 it. We felt that they were adequately addressed in  
2 the supplement and that we received many comments on  
3 all that -- or I mean in the draft, and we received  
4 many comments on all aspects of that.

5 The other fundamental thing that has not  
6 changed is the preferred alternative. Pending the  
7 determination of suitability, DOE's preferred  
8 alternative remains to proceed with the proposed  
9 action, construct, operate, and monitor and eventually  
10 close the repository.

11 And pursuant to that, we are now  
12 soliciting comments on the supplement to the DEIS.  
13 Public comments in the NEPA process, all comments  
14 regardless of the source are treated equally and will  
15 be addressed in the final EIS. Comments submitted by  
16 June 25 will be considered. Any comments that are  
17 submitted after that period will be dealt with to the  
18 extent practicable. And comments can be submitted  
19 orally or in writing form at the hearings, by mail, on  
20 the Internet or by fax. And the various addresses and  
21 opportunities to comment are in the supplement itself  
22 or in the Federal Register notice. We have a 1-800  
23 number that people can call.

24 VICE CHAIRMAN HORNBERGER: Just out of  
25 curiosity, how much of your responses now come through

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1 the Internet or email?

2 MS. SUMMERSON: Our first comment was an  
3 email on this supplement. It came last week. I don't  
4 know what the -- we've only had about half dozen  
5 comments so far on the supplement.

6 VICE CHAIRMAN HORNBERGER: How about on  
7 the DEIS itself? Did you accept Internet comments on  
8 the --

9 MS. SUMMERSON: Yes, we did.

10 MR. RIVERS: We did have email comments.  
11 I don't know that particular percentage. I think  
12 approximately a third of our comments were received in  
13 the hearing process.

14 VICE CHAIRMAN HORNBERGER: Okay.

15 MR. RIVERS: I would say the bulk of them  
16 were of mail, and then you're probably less than 20  
17 percent email.

18 VICE CHAIRMAN HORNBERGER: Okay. I was  
19 just curious.

20 MS. SUMMERSON: We do have a lot of people  
21 who are accessing the documents on the Internet. That  
22 seems to get a great deal of use.

23 And then I just wanted to finish up the  
24 process discussion. This is a little complex, because  
25 we have two public involvement processes going on at

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1 the same time. The top line represents the  
2 environmental impact statement, and you see the dates  
3 there. The supplement was available on the 4th of  
4 May; the comment period began on the 11th. Our public  
5 hearings are May 31, June 5, and June 7, and our  
6 comment period ends the 25th of June. Then we have  
7 whatever period it is until the final EIS is required  
8 for the site recommendation, if it is made, to  
9 consider our comments.

10 At the same time, on the 4th of May, the  
11 Department also released the Science and Engineering  
12 report and began a public comment period associated  
13 with it. And that is the beginning of the public  
14 period for the site recommendation process materials.

15 At some point, in the summer, the  
16 preliminary site suitability report will become  
17 available. At that time, dates for public hearings on  
18 the potential site recommendation will be announced.  
19 And the end of that comment period will be announced.  
20 Those decisions are at the discretion of the Secretary  
21 of Energy, and he will decide the dates and the timing  
22 of those activities. We do have some concern of  
23 people being able to separate the two processes, so  
24 we're trying very hard to be sure everyone knows which  
25 process is what and what the timing is for them.

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1                   That is really presentation that we had  
2 prepared on the process, and I know Mr. Rivers would  
3 be more than happy to answer any other technical -- I  
4 do apologize again.

5                   VICE CHAIRMAN HORNBERGER: No, that's all  
6 right. We understand.

7                   I guess, just to perhaps make 100 percent  
8 clear, I gather from comments made in earlier  
9 questions that the differences that you started out,  
10 I forget which slide, Jane, on the third or fourth,  
11 you said, "Well, there were differences that were  
12 small but significant enough to report in a  
13 supplement." And I guess the real question is how  
14 small is small? What are we talking about here?

15                  MS. SUMMERSON: What I actually said was  
16 that they are small enough to not be considered  
17 significant. In fact, the difference in the impacts  
18 was not enough to make us feel we needed a supplement.  
19 We simply felt that it would further the NEPA process  
20 and to allow public comment on the design changes,  
21 even though once the analyses were done the impacts  
22 were not considered to be significant.

23                  VICE CHAIRMAN HORNBERGER: Okay.

24                  MS. SUMMERSON: There are -- I believe the  
25 backup slides are in your package.

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1 VICE CHAIRMAN HORNBERGER: Yes, they are.

2 MR. RIVERS: Let me add just a couple  
3 things too.

4 MS. SUMMERSON: Yes, Joe can address that.

5 MR. RIVERS: The way in which we compared  
6 impacts was also a little bit different. For the  
7 draft EIS, for the three thermal loads -- high,  
8 intermediate, and low thermal loads -- which were  
9 based on aerial mass loading within the repository, we  
10 had a 100-year closure period, pre-closure period that  
11 was constant, and we used that for our short-term  
12 impacts. When the Science and Engineering report and  
13 the Department, after some, I guess, urging from the  
14 Nuclear Waste Technical Review Board to look at a  
15 lower temperature a repository, cold repository, they  
16 looked at various ways of doing that.

17 One is what they call the higher  
18 temperature repository operating mode in which there  
19 is still boiling regions in the repository, but they  
20 are at least 50 percent of the pillar walls between  
21 the drifts are maintained at a below boiling  
22 temperature so that you can have water flow between  
23 the drifts. And that's one way of reducing some of  
24 the uncertainties. That still has a 100-year closure  
25 period.

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1                   Now when you get to the different options  
2 to get what they call the lower temperature repository  
3 operating mode, that's where they try to maintain the  
4 temperature within the drift and the temperature at  
5 the waste package below boiling and in fact outside of  
6 a corrosion susceptibility window at the waste package  
7 itself of 85 degrees C and a relative humidity of less  
8 than 50 percent.

9                   Now there are many ways to achieve that.  
10 One is through waste package spacing where you spread  
11 the waste packages out; one is through a longer  
12 ventilation period. For in the draft EIS and for the  
13 VA design, the ventilation was 0.1 cubic meters per  
14 second. For the current design, it's 15 cubic meters  
15 per second. So it is more of a heat removal than it  
16 was not heat removal for the VA design. So the time  
17 in which it takes to remove the heat could range  
18 anywhere from 50 to 300 years.

19                  There's also the option of aging the waste  
20 above ground in what we call a staging area. We've  
21 looked at aging up to 40,000 metric tons for up to 30  
22 years, coincident with emplacement. So with these  
23 various variables of these parameters, it was  
24 impossible for us to say for the lower temperature  
25 operating mode that 100 years is the set time for

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1 closure. It actually ranges anywhere from 125 to 324  
2 years.

3 And so when you increase the period of  
4 time that you are evaluating impacts and when you're  
5 looking at total impacts as opposed to an annual  
6 impact, the presentation is very different. The  
7 impacts, whether they are significant as compared to  
8 what we had in the draft, we don't feel that they are  
9 significantly different, but they appear quite  
10 different. So in order to let the public be aware of  
11 what the Department is currently thinking with regard  
12 to their design, the implementing scenarios, and how  
13 we analyze it, we felt it would be appropriate to  
14 issue the supplement based on the design  
15 modifications.

16 VICE CHAIRMAN HORNBERGER: I think that we  
17 may have some interest in talking about pre-closure,  
18 but before I ask other people if they have questions,  
19 sticking with post-closure, one of the things that is  
20 apparent is that not only has the DOE design evolved,  
21 but the DOE TSPA has evolved. And the question I have  
22 is, is it of any concern that the analysis that  
23 attends the supplemental draft EIS is actually  
24 different than the analysis that attends the draft EIS  
25 itself?

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1 MS. SUMMERSON: Well, yes. That's part of  
2 what Joe was referring to in that, if nothing else, it  
3 gives us a communication problem with the public,  
4 different ways of evaluating and looking at things.  
5 And then there's also an understanding challenge for  
6 the Department that we certainly have to deal with.

7 VICE CHAIRMAN HORNBERGER: Okay.

8 CHAIRMAN GARRICK: In that regard, one of  
9 the sources of uncertainty, of course, has always been  
10 just exactly what the heat load is and how it's going  
11 to be distributed. Was the expanded capacity of the  
12 waste handling building to allow blending driven  
13 principally to get a better handle on the heat load?

14 MR. RIVERS: Yes, sir. Early on when they  
15 incorporated blending into the proposed action, it was  
16 before they were evaluating the lower temperature  
17 repository operating mode. It was what they, at that  
18 time, called the reference design. It's what's now  
19 referred to as the higher temperature repository  
20 operating mode. It was such that the Department could  
21 optimize and control the heat loads of the various  
22 waste packages to better spread out and know where the  
23 particular heat was going to be so that it could match  
24 with the analysis.

25 CHAIRMAN GARRICK: Yes. It seems to me

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1 this is something you should have a very good handle  
2 on. And if you have the ability to blend and  
3 redistribute spent fuel, I would think that you'd be  
4 in an excellent position to really essentially  
5 eliminate the uncertainty as far as the heat load is  
6 concerned.

7 MR. RIVERS: I believe the uncertainty  
8 with regard -- one of the things the Science and  
9 Engineering report -- actually, let me take that back.  
10 I believe it's the TSPA report that came out in  
11 December, TSPA SR Rev 0. One of the things it does,  
12 it identifies five parameters that are what they claim  
13 are the most important. And most important deals with  
14 uncertainty and sensitivity, and inventory, by no  
15 stretch, is one of those.

16 CHAIRMAN GARRICK: Yes.

17 MR. RIVERS: So that's not one of the  
18 uncertainties.

19 CHAIRMAN GARRICK: One of the things that  
20 -- non-technical issues that this Committee has  
21 developed a keen interest in, inspired partly by our  
22 visits to Las Vegas and the conduct of public  
23 meetings, is the process by which you interact with  
24 the public. And, of course, you have these three  
25 public hearings planned in May and June. Are you

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1 doing anything different from the traditional approach  
2 to conducting such hearings in terms of how these  
3 meetings are going to be operated?

4 MS. SUMMERSON: We're following the  
5 precedent that was set with the draft and which on the  
6 whole received a fairly good response. We have added  
7 a poster session so that the hearing will open with a  
8 poster session on a number of technical issues. We  
9 will have technical people there to discuss things and  
10 answer questions for the public. We will then have an  
11 hour of a question -- an off-the-record question and  
12 answer period when people can get further information  
13 that they want. We will then take a break and then  
14 begin the formal transcribed part of the hearing. It  
15 has a presentation and then the hearing officer  
16 receiving comments with a court reporter.

17 CHAIRMAN GARRICK: And how much time have  
18 you allowed for the on-the-record part of the hearing?

19 MS. SUMMERSON: The agenda says seven to  
20 nine. It's played by ear depending on how many people  
21 come. We are limiting people, I believe, to five --

22 MR. RIVERS: Initially, their initial  
23 limit is three minutes.

24 MS. SUMMERSON: Three minutes?

25 MR. RIVERS: But they have the opportunity

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1 to come back and continue to speak.

2 CHAIRMAN GARRICK: Do you have any sense  
3 of what the response is going to be? Do they have to  
4 notify you in advance?

5 MS. SUMMERSON: We ask them to sign up in  
6 advance, but people can sign up at the door also.  
7 Judging by the draft, Amargosa Valley had, I think,  
8 about 20, 25 people.

9 MR. RIVERS: I don't recall what the  
10 numbers were.

11 MS. SUMMERSON: Las Vegas had a couple  
12 hundred; Pahrump had quite a few. We do stay until  
13 everybody is done. And I know at the draft, the  
14 people at Las Vegas started at 11 in the morning and  
15 were there until one o'clock the next morning. And if  
16 that's what it takes, you know -- the reason we put a  
17 time limit on, though, is because a lot of people will  
18 have made babysitting arrangements or something and  
19 can't sit there all night. So we want everyone to  
20 have a chance to say something, and then they can  
21 either, if they're not done, turn in the comment in  
22 writing or wait until we've been through the whole  
23 roster once and then come back up and speak again,  
24 just to try to be as fair as possible.

25 CHAIRMAN GARRICK: Did you get any

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1 feedback from the draft hearing that would suggest  
2 reformatting the process or changing it? You said  
3 that it went quite successfully, but I was just  
4 curious if you got any strong suggestions about  
5 changes and whether or not any of those changes were  
6 implemented?

7 MS. SUMMERSON: I don't know directly,  
8 because I was not involved in the EIS work at all at  
9 the time. I would expect, given the controversy of  
10 this issue, that we had responses that ranged the  
11 entire gamut, from "This was wonderful" to "This was  
12 horrible," with every possible suggestion, from "Have  
13 more" to "Don't have any." Just because when  
14 something is very emotional, you get a very wide  
15 range.

16 CHAIRMAN GARRICK: Yes.

17 MR. RIVERS: I think one of the issues  
18 also in Las Vegas was that the meeting room that was  
19 --

20 MS. SUMMERSON: Yes.

21 MR. RIVERS: -- eventually used was too  
22 small. The meeting room that's going to be used in  
23 Las Vegas this year on June 5 is at the Sun Coast  
24 Casino; it's a big ball room. They should not have  
25 any problems with seating and availability.

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1 I think one other thing was that there  
2 were a lot of complaints on --

3 MS. SUMMERSON: Parking costs.

4 MR. RIVERS: Excuse me?

5 MS. SUMMERSON: At some of the meetings,  
6 there were complaints about the cost of parking, and  
7 that was another issue. The casinos you can park for  
8 free at.

9 MR. RIVERS: Okay. Another issue was that  
10 there was a lot of complaints that they weren't  
11 advertised enough. I know that within all the  
12 newspapers in the surrounding areas there are being  
13 large ads put in two or three times, including the day  
14 -- I believe the day before the hearing --

15 MS. SUMMERSON: The day before or the  
16 morning of, depending on --

17 MR. RIVERS: I believe there's radio  
18 announcements also at the Spanish-speaking newspapers  
19 and radio. So they're trying to increase that as much  
20 as they can.

21 MS. SUMMERSON: We did have comments that  
22 it would have been helpful to have flyers on bulletin  
23 boards in the communities, at community centers and  
24 grocery stores and that kind of thing. And we're  
25 trying, for instance, to distribute the information to

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1 the affected unit of local government representatives  
2 and ask them to try to distribute it. It's a little  
3 hard for us, if you're not a member of the community,  
4 to know where it is that people look in that community  
5 on a bulletin board to see something. But we are  
6 trying to be responsive to that concern and  
7 communicate that way.

8 MR. JONES: Jane, there was one other  
9 thing. I'm Jay Jones.

10 VICE CHAIRMAN HORNBERGER: You need to get  
11 to a microphone, Jay.

12 MR. JONES: I'm Jay Jones. I work for the  
13 Department of Energy. I worked on the draft. When we  
14 had the draft hearings, we often had two separate  
15 sessions, in the late morning/early afternoon and in  
16 the evening, and a lot of those, with both hearings,  
17 some of them weren't very well attended. So I think  
18 in the interest of resources we decided to just have  
19 one session for the hearings for the supplement. So  
20 that will be like, I guess, an early evening session,  
21 from six to nine for each one. So, again, I think  
22 that's kind of a resource decision, just having a lot  
23 of people and not having -- from the Department and  
24 not having a lot of participants at the public  
25 meeting.

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1 CHAIRMAN GARRICK: Thank you.

2 VICE CHAIRMAN HORNBERGER: Milt? Ray?

3 MEMBER WYMER: Yes, I have one question.

4 On one of your view graphs, you talked about a revised  
5 emplacement drift layout that you made a change in  
6 order to get a better orientation of the drifts with  
7 respect to the stability of the Mountain.

8 MR. RIVERS: Yes, sir.

9 MEMBER WYMER: Say more about that, if you  
10 would. Does that mean that the pictures we've been  
11 seeing all along are not -- are no longer valid. They  
12 are things that are going to be skewed?

13 MR. RIVERS: Needless to say, it's still  
14 in the horizontal plane, but they're skewed in the  
15 other direction.

16 (Laughter.)

17 MEMBER WYMER: Well, I didn't think you  
18 did it vertically.

19 MR. RIVERS: And, in fact, from an EIS  
20 standpoint, I don't have a lot of information  
21 particularly about the reasons and the -- if you'll  
22 look -- do you have a copy of the supplement?

23 MEMBER WYMER: Yes, we have one.

24 MR. RIVERS: If you'll look on page 2-20.

25 MEMBER WYMER: Of the supplement.

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1 MR. RIVERS: I've got a copy --

2 MEMBER WYMER: Assume we don't have it.

3 MR. RIVERS: Okay. Well, what we have in  
4 here -- because one of our, I guess, purposes and one  
5 of our goals in the supplement was to present the  
6 information from the draft for comparison purposes so  
7 the public would understand what has changed. And if  
8 you'll look at the top two and the bottom left  
9 pictures in this figure, they represent the layouts  
10 for the high, low, and intermediate thermal loads.  
11 And if you'll see, in general, how everything is  
12 angled from bottom left to top right, and if you'll  
13 look at the S&ER flexible design, as laid out in the  
14 bottom right, it's angled slightly more to the left as  
15 opposed to up to the right. So that's essentially the  
16 difference in the layout.

17 MEMBER WYMER: Okay. And the reasons  
18 were?

19 MR. RIVERS: From what I understand, it's  
20 take advantage of some additional stability in the way  
21 the rock is formed in the repository horizon. I  
22 really don't know much more about it than that. I can  
23 get back -- I can try to find some more information if  
24 you'd be interested.

25 VICE CHAIRMAN HORNBERGER: That is

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1 correct. It has to do with state of stress in the  
2 rock and the rock mass characteristics.

3 MEMBER WYMER: But you don't have any --  
4 can you give me an idea of the order of magnitude of  
5 improvement to doing it or is just something you can  
6 capitalize on?

7 MR. RIVERS: No, sir. No, sir, I don't.

8 MEMBER WYMER: Okay, thanks.

9 VICE CHAIRMAN HORNBERGER: Questions from  
10 staff? Any questions? Bret?

11 MR. LESLIE: Bret Leslie, NRC staff. I  
12 had one question on your backup slide, which is slide  
13 16. I saw that you were going to have the suit  
14 stability evaluation report. The only other thing  
15 that I didn't see in there going into the site  
16 recommendation documentation concept is the report  
17 that we've heard may be coming out sometime mid-summer  
18 that attempts to address the NWTRB concerns. How does  
19 that play into the decisionmaking process or is that  
20 one of the acronyms I can't decipher?

21 MS. SUMMERSON: That report I believe it's  
22 acronym now is SSPA, but in all honesty, I'm having  
23 trouble keeping up with our acronyms as the targets  
24 are moved. If you go to backup slide 15, that report  
25 is basically a level lower in the documentation

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1 pyramid so that it would be on the level of the TSPA  
2 and the system description documents and that type of  
3 thing. And so not one of the reports that actually  
4 makes up the package that would be considered the  
5 President's basis -- or the Secretary's basis for  
6 recommendation, but it would be the technical material  
7 that is referenced by the SR reports. The purpose of  
8 this pyramid, with its hideous colors, is --

9 CHAIRMAN GARRICK: I sort of like them.

10 MS. SUMMERSON: Well, I find --

11 VICE CHAIRMAN HORNBERGER: It's clear that  
12 a man designed that.

13 MS. SUMMERSON: And in fact you are right.  
14 Dr. Brokeman and I have an ongoing war about this  
15 pyramid. It is to emphasize the layering the we have  
16 here in these documents, because, needless to say, the  
17 Secretary of Energy is not going to read all of this  
18 wealth of technical material, so at different levels.  
19 And the ones in slide 16 are referring to the things  
20 that are required by the act.

21 MS. ABRAMS: Jane, Charlotte Abrams, NRC  
22 staff. Could you just talk a minute about the  
23 relationship of the Science and Engineering report to  
24 the supplemental draft?

25 MS. SUMMERSON: The flexible repository

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1 design for which the supplement to the draft EIS is  
2 analyzing impacts is detailed in the Science and  
3 Engineering report. We have 70 references, about?

4 MR. RIVERS: Probably. It's almost -- its  
5 primary role, as it relates to the supplement to the  
6 draft, is it provides the detailed information about  
7 the current design being considered. And from a  
8 standpoint of timing, if you're going to issue the  
9 Science and Engineering report, then you need to be  
10 able to allow the public to understand the changes in  
11 environmental impacts that result from the changes in  
12 the design. Does that answer your question?

13 MS. SUMMERSON: In terms of reviewing,  
14 however, Charlotte, the vast majority of the  
15 references that we make to the S&ER report are in  
16 Section 1?

17 MR. RIVERS: Well, primarily it's in  
18 Chapter 2 of the supplement, and the ones in Chapter  
19 2 of the supplement are the references that are  
20 primarily send you to the basis document for  
21 description of the design. There are a couple  
22 references in Chapter 3 where we report the long-term  
23 performance data, I believe it's in 3.2, and we refer  
24 to the S&ER for the long-term performance data. As  
25 far as results, that's the only place we refer to the

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1 S&ER. Most of the other places we're referring to the  
2 SR for descriptive information.

3 VICE CHAIRMAN HORNBERGER: Jit? No?  
4 Okay. Well, thank you very much, Jane. Thanks for  
5 the update and clarification.

6 MS. SUMMERSON: Thank you for the  
7 opportunity. If there are any other questions, Joe  
8 and I are going to stick around today, and we'd be  
9 more than happy to either answer things or take notes  
10 and find somebody and get the information back to you.

11 VICE CHAIRMAN HORNBERGER: Great. Thanks  
12 very much. Thank you, too, Joe.

13 MR. RIVERS: Thank you.

14 CHAIRMAN GARRICK: We apologize. We're  
15 having a little caucus here to figure out what's right  
16 and what's wrong.

17 (Laughter.)

18 VICE CHAIRMAN HORNBERGER: We figured out  
19 what's right.

20 CHAIRMAN GARRICK: But I think we can go  
21 ahead after all, I'm told, if you're able to do so  
22 right now -- ready right now.

23 VICE CHAIRMAN HORNBERGER: The item on our  
24 agenda that we're moving to is scheduled for one  
25 o'clock, and we're going to hear about the staff's --

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1 the NRC staff's plans for reviewing the DOE DEIS.

2 CHAIRMAN GARRICK: And it's going to be  
3 given by Melanie Wong.

4 VICE CHAIRMAN HORNBERGER: Right. As soon  
5 as the computer --

6 CHAIRMAN GARRICK: As soon as she gets her  
7 Powerpoint presentation resolved.

8 (Whereupon, the foregoing matter went off  
9 the record at 11:19 a.m. and went back on  
10 the record at 1:02 p.m.)

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A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

(1:02 p.m.)

CHAIRMAN GARRICK: Our meeting will come to order. George, let's pick up where we left off.

VICE CHAIRMAN HORNBERGER: Okay. I see they called Theron back from vacation so that we got the computer working.

(Laughter.)

And we're going to continue our discussion of the draft EIS on Yucca Mountain. And Melanie Wong is going to tell us about the NRC plans to review the draft. Melanie?

MS. WONG: Hello. My name is Melanie Wong. I'm from the Environmental and Performance Assessment Branch. Our Branch reviews performance and environmental review on NMSS licensing action.

My purpose today is to outline the NRC staff's plan for reviewing the DOE Yucca Mountain supplement to the draft environmental impact statement. I'll take a few minutes to discuss the background of NRC's role as a commenting agency, discuss our review plan, our review schedule, what is the scope of the supplement, and who the assigned reviewers and point of contacts are.

As you are aware, under the Nuclear Waste

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1 Policy Act, the Secretary of Energy must submit to the  
2 President, when making a site recommendation, a number  
3 of documents, including the comments made by the NRC  
4 on the draft environmental impact statement. Thus,  
5 any NRC comments on the supplement would accompany any  
6 DOE site recommendation. The Nuclear Waste Policy Act  
7 also provides that NRC shall adopt DOE final  
8 environmental impact statement to the extent  
9 practicable.

10 In reviewing the supplement, the staff  
11 will use the guidance prepared by the NRC for  
12 reviewing DOE's draft environmental impact statement.  
13 The NRC staff has previously briefed the Committee on  
14 the guidance in June 1999. A completeness and an  
15 evaluative review will be performed on the supplement.  
16 The completeness component determines whether the full  
17 range of impacts have been considered. The evaluative  
18 components includes an evaluation supporting data,  
19 data gathering method, and analysis method, confirming  
20 that data and analysis support the conclusions.

21 As Jane has discussed before lunch, the  
22 supplement focuses on the design enhancements, such as  
23 the repository design, the operating modes. It does  
24 not discuss the transportation of spent nuclear fuel  
25 or high level waste or the no-action alternative.

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1 Staff from the NRC and the Center for Nuclear Waste  
2 Regulatory Analysis, with expertise in environment  
3 review and performance assessment, hydrology, geology,  
4 geochemistry, waste package and engineering design  
5 have been assigned to review the document. The NRC  
6 staff have also reviewed the draft environmental  
7 impact statement and are from the High Level Waste  
8 Branch and the Environmental Performance Assessment  
9 Branch.

10 A schedule has been developed for  
11 reviewing the supplement within the 45-day review  
12 period. The supplement was received on May 4. On-  
13 site representative of office will attend the DOE  
14 public meetings and report back to the staff. After  
15 drafting the comments on May 28, the staff will brief  
16 various management, getting concurrence and refining  
17 any comments for DOE. We would appreciate it if you  
18 could please share any comments with us by the end of  
19 the month. These documents will be documented in a  
20 letter signed by the NMSS Office Director before the  
21 close of the comment period, June 25.

22 Please feel free to contact Mike Lee Matt  
23 Blevins of the Environmental Performance Assessment  
24 Branch if you have any questions. With that, I'll  
25 conclude my presentation. Do you have any questions?

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1 VICE CHAIRMAN HORNBERGER: Thank you,  
2 Melanie. Let's see, how long have you had this  
3 document now? All of ten days?

4 MS. WONG: May 4 we received it, yes.

5 VICE CHAIRMAN HORNBERGER: So all of the  
6 questions we'll ask you will be totally unfair.

7 (Laughter.)

8 MS. WONG: Thank you for your  
9 consideration.

10 VICE CHAIRMAN HORNBERGER: I guess -- so  
11 you've given us an outline of, sort of, your  
12 programmatic responsibilities and how you're going to  
13 do this. We heard from DOE this morning that they  
14 really didn't -- DOE did not see any really  
15 significant changes from the draft EIS itself. In  
16 your very first cursory overview, do you see any major  
17 changes from the draft EIS that you think deserves  
18 particular scrutiny on your part?

19 MS. WONG: They have addressed  
20 environmental impacts in the 13 resources areas, but  
21 we're still evaluating the extent of that review.  
22 We're still evaluating the impacts there.

23 VICE CHAIRMAN HORNBERGER: Okay.  
24 Questions?

25 MEMBER LEVENSON: I've got one that's sort

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1 of a philosophical question. On your backup slide, on  
2 Category 2, does the NRC have responsibility for water  
3 use and land use?

4 MS. WONG: Well, we are evaluating from an  
5 environmental point of view.

6 VICE CHAIRMAN HORNBERGER: It's part of  
7 NEPA. So it's a NEPA --

8 MEMBER LEVENSON: Yes. I know it's a  
9 requirement, but the question is does the NRC has a  
10 specific role?

11 VICE CHAIRMAN HORNBERGER: No. NRC has --  
12 what I understand is the NRC's role is they have an  
13 obligation to make comments and to be, what -- to sign  
14 on, if you will, to the final environmental impact  
15 statement to as great an extent as possible. So given  
16 that they have to do that, it is, I think, appropriate  
17 for them to --

18 MEMBER LEVENSON: You mean much broader  
19 than a normal charter?

20 VICE CHAIRMAN HORNBERGER: Yes.

21 MEMBER WYMER: It might have been more  
22 palatable if it had said, "evaluation of water use and  
23 evaluation of land use," since water use is somewhat  
24 ambiguous.

25 MS. ABRAMS: What we were -- Charlotte

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1 Abrams -- what we were just trying to do there is --  
2 this is a backup slide -- is just to point out the  
3 comments we had on the previous draft and just to show  
4 you the comment areas that might relate to the  
5 information in the supplemental draft. And we just  
6 abbreviated water use.

7 CHAIRMAN GARRICK: I heard that George  
8 Hornberger's summary of what the NRC's role is here.  
9 Would you give me your interpretation of -- not that  
10 I don't have complete confidence.

11 (Laughter.)

12 MS. ABRAMS: Well, he did a good job. In  
13 fact, he can become part of the environmental review  
14 team.

15 Well, as Melanie laid out early on, the  
16 NRC's role in this, which is a little different than  
17 in most NEPA situations, because we're to adopt DOE's  
18 EIS to the extent practicable. So we wouldn't be  
19 completing our own EIS for this action. Normally, for  
20 any significant federal action, we would have to  
21 complete an environmental assessment or an  
22 environmental impact statement. And environmental  
23 assessment if there are no significant impacts;  
24 environmental impact statement, which goes further if  
25 there are some significant environmental impacts

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1 associated with the action. Does that help?

2 CHAIRMAN GARRICK: Yes. Yes, that does.

3 MEMBER LEVENSON: John, the reason I asked  
4 the question, and it's not just idle curiosity, if in  
5 fact it is part of NRC's jurisdiction, then it becomes  
6 part of the issues that this Committee needs to look  
7 at. If it's outside that, we don't. So that's what  
8 I was -- the reason I'm asking is to understand the  
9 scope.

10 VICE CHAIRMAN HORNBERGER: Well, my  
11 recollection is, again, within the EIS context. When  
12 we commented on the draft EIS, we didn't feel  
13 constrained at all. In fact, we commented on some  
14 things about transportation, which normally do not  
15 fall under our purview anyway. So we're rarely  
16 bashful about what is or isn't proper for us to do.

17 VICE CHAIRMAN HORNBERGER: Staff have any  
18 questions?

19 CHAIRMAN GARRICK: I think it's  
20 appropriate for us to go beyond, but we need to go at  
21 least as far as.

22 VICE CHAIRMAN HORNBERGER: As far as, yes.  
23 Does staff have any -- any questions from staff?

24 CHAIRMAN GARRICK: I have one more  
25 question.

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1 VICE CHAIRMAN HORNBERGER: Oh, go ahead,  
2 John.

3 CHAIRMAN GARRICK: I think one more  
4 question. I notice your draft comments come before  
5 the public meetings. If you hear something during the  
6 public meetings that causes you to have second  
7 thoughts or what have you, will that impact your  
8 comments?

9 MS. WONG: Yes. We would revise our  
10 comments and reconsider the issue at hand.

11 MS. ABRAMS: Just because the draft  
12 comment date is the 28th, it doesn't mean we're not  
13 going to be revising up till June 25.

14 CHAIRMAN GARRICK: Thank you.

15 VICE CHAIRMAN HORNBERGER: I think Jim  
16 asked about our timing. My recollection is that you  
17 wanted our comments, if we have any, by the end of  
18 this month.

19 MS. WONG: Yes. That would be good, thank  
20 you.

21 CHAIRMAN GARRICK: The process kind of  
22 stands in the way of our doing that, simply because we  
23 --

24 VICE CHAIRMAN HORNBERGER: Unless you want  
25 to stay tomorrow, John.

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1 CHAIRMAN GARRICK: Yes.

2 MS. ABRAMS: I guess I would restate that  
3 also. If there are any concerns that you think the  
4 staff should look at in more depth, please alert us to  
5 that.

6 CHAIRMAN GARRICK: Thank you.

7 VICE CHAIRMAN HORNBERGER: Okay. I think  
8 that does it. Thank you very much, Monica. Thank  
9 you, Charlotte.

10 MS. WONG: Thank you.

11 VICE CHAIRMAN HORNBERGER: Let's see. I  
12 think I turn it back to John Garrick now, don't I?

13 CHAIRMAN GARRICK: Andy, is there anything  
14 -- do you want to walk us through this so we can  
15 address the question of EDO response to ACNW report,  
16 et cetera, et cetera.

17 MR. CAMPBELL: Okay.

18 CHAIRMAN GARRICK: You can highlight it  
19 for us.

20 MR. CAMPBELL: Yes. I'm just going to  
21 cover the first two pages. The rest is the  
22 attachments. Also, for completeness sake, I included  
23 all the view graphs that were presented at the  
24 briefing of Dana Powers and Ken Rogers as well as view  
25 graphs that Ashook Adhani presented, although I didn't

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1 sit through that part of the briefing. It was pretty  
2 short because the rest was pretty long.

3 But let me walk through the first page  
4 which has the specifics I've excerpted out of the  
5 response, their specific response. And the dark  
6 bullets are the response areas, and the light bullets  
7 are kind of actions that they say they're going to do.  
8 So the first one, of course, observation of excellent  
9 scientific, timely, high quality work. They noted  
10 that. They thanked us, basically. And then they said  
11 that NMSS and RES will keep the Committee appraised of  
12 staff efforts, which means in the future they'll be  
13 giving us more of these types of presentations.

14 In the next bullet, the staff agrees with  
15 the --

16 (Whereupon, at 1:15 p.m., the Committee  
17 Meeting was concluded.)  
18  
19  
20  
21  
22  
23  
24  
25

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This is to certify that the attached proceedings  
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Name of Proceeding: ACNW 126<sup>th</sup> Meeting

Docket Number: (Not Applicable)

Location: Rockville, Maryland

were held as herein appears, and that this is the  
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foregoing proceedings.



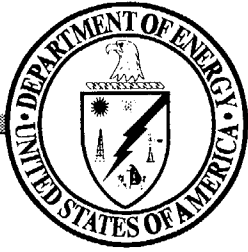
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U.S. Department of Energy  
Office of Civilian Radioactive Waste Management

# Supplement to the Draft Environmental Impact Statement for a Geologic Repository at Yucca Mountain

Presented to:  
**Advisory Committee on Nuclear Waste**

Presented by:  
**Jane Summerson**  
**EIS Document Manager**  
**Yucca Mountain Site Characterization Office**  
**U.S. Department of Energy**

**May 16, 2001**

YUCCA  
MOUNTAIN  
PROJECT



# **Draft Environmental Impact Statement (DEIS)**

- **EPA Notice of Availability - August 13, 1999**
- **The DEIS:**
  - Describes and evaluates the preliminary design concept and additionally identifies design features and alternative design concepts under consideration
  - Evaluates the possible impacts of transporting spent nuclear fuel
  - Evaluates a no-action alternative
- **August 13, 1999 to February 28, 2000 Public Comment Period (199 days)**
  - 21 public hearings
  - Over 11,000 comments were received over the public comment period

# **Nuclear Waste Policy Act (NWPA)**

## **(as amended)**

- **Sec. 114 (a)(1) of the NWPA states, “the Secretary shall make available to the public, and submit to the President, a comprehensive statement of the basis of [a site] recommendation, including ... (D) a final environmental impact statement ....”**
- **Section 114(f) states that the Environmental Impact Statement (EIS) need not consider:**
  - **The need for a repository**
  - **The time of the initial availability of a repository**
  - **Alternate sites to the Yucca Mountain site**
  - **Alternatives to geologic disposal**

# **Supplement to the DEIS**

- **Released and distributed on Friday May 4, 2001**
- **EPA Notice of Availability -- May 11, 2001**
- **45 Day Public Comment Period  
(May 11, 2001 - June 25, 2001)**
  - **Body of the supplement is approximately 70 pages**
  - **Limited in scope**
- **Three public hearings planned in the vicinity of Yucca Mountain**
  - **Amargosa Valley, NV (May 31, 2001)**
  - **Las Vegas, NV (June 5, 2001)**
  - **Pahrump, NV (June 7, 2001)**

# Purpose of the Supplement

- **Update repository design information presented in the DEIS**
  - **DEIS anticipated design would continue to evolve, evolution has focused on**
    - ♦ **Reducing uncertainties about repository performance**
    - ♦ **Increasing operational flexibility**
    - ♦ **Improving safety and efficiency**
  - **Yucca Mountain Science and Engineering Report flexible design**
    - ♦ **Fundamental aspects of the repository design have not changed**
  - **Small increases in some impacts (compared to DEIS)**
- **Solicit public comment on the updated information**

# What is the Supplement?

- **Together, the DEIS and the supplement represent the most current and comprehensive analyses and information related to repository design and operating modes**
- **Final EIS will integrate**
  - **DEIS (issued 1999)**
  - **Supplement to the DEIS**
  - **Public comments on the DEIS and the supplement and DOE responses**



# **DEIS anticipated that design would continue to evolve**

- **DEIS stated:**
  - **“The design will continue to evolve . . .,” and**
  - **“DOE recognizes that plans for the repository would continue to evolve during the development of the final repository design . . .”**
- **Appendix E focused on alternative design concepts**
  - **“This appendix . . . represents a forward look at how the repository design might evolve”**
- **Repository design will continue to evolve**

# **Some design features from Appendix E of the DEIS have been incorporated**

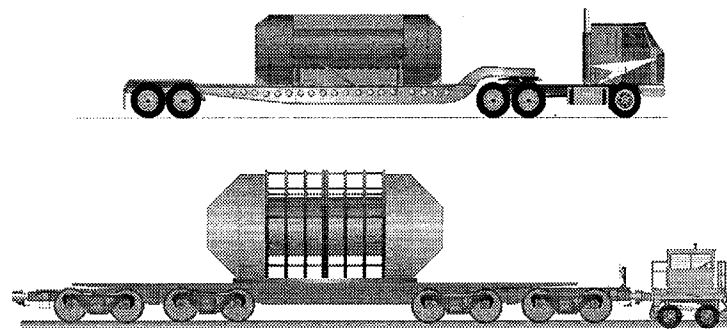
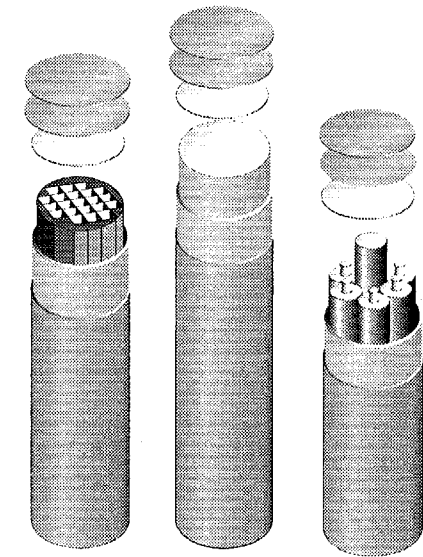
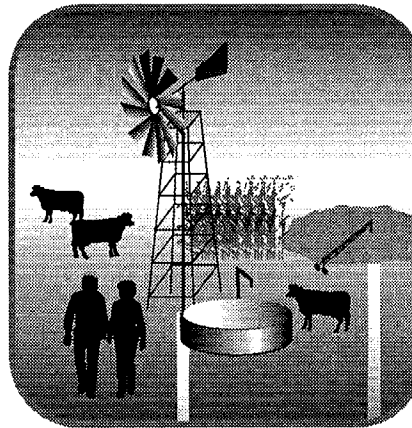
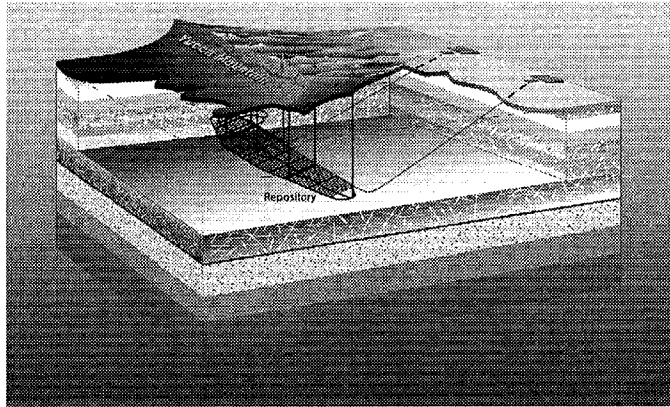
- **Aging or blending of waste**
- **Lower temperature operating conditions**
- **Longer post-emplacement ventilation period prior to closure**
- **Wider drift spacing and variable waste package spacing**
- **Drip shields**
- **Waste package materials**
- **Ground support options and waste package supports**

# What else has changed?

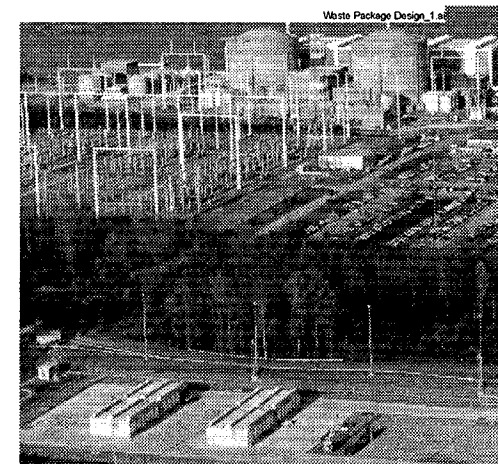
- **Solar energy**
- **Revised emplacement drift layout**
- **Expanded capacity of waste handling building to allow blending**



# Fundamental aspects have not Changed



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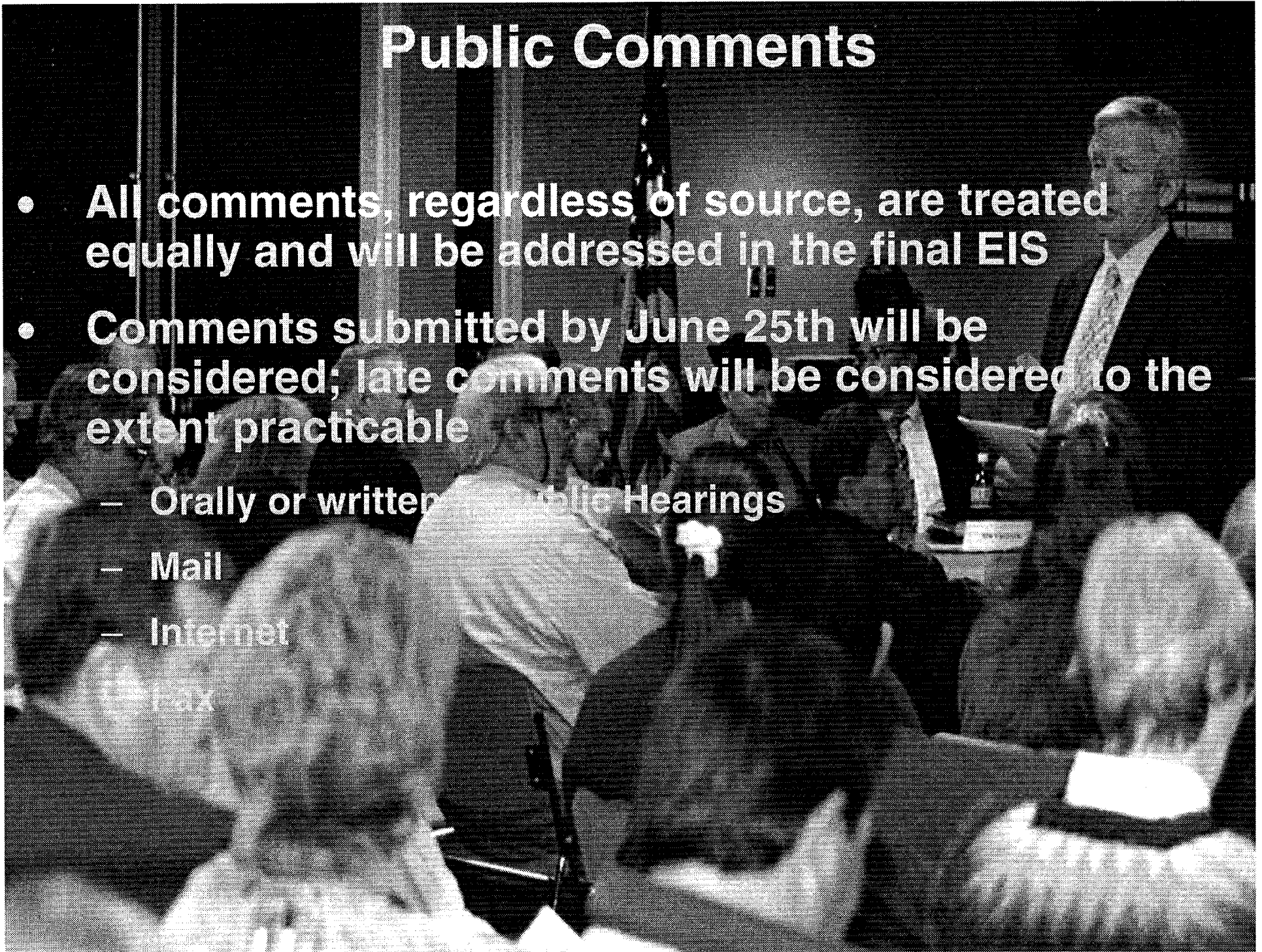


# Preferred Alternative

- **Pending determination of suitability, DOE's preferred alternative remains to proceed with the proposed action**
  - **To construct, operate and monitor, and eventually close a repository for disposal of 70,000 MTHM of commercial and DOE-owned spent nuclear fuel and high-level radioactive waste at Yucca Mountain**
- **Now soliciting comments on the supplement to the DEIS**

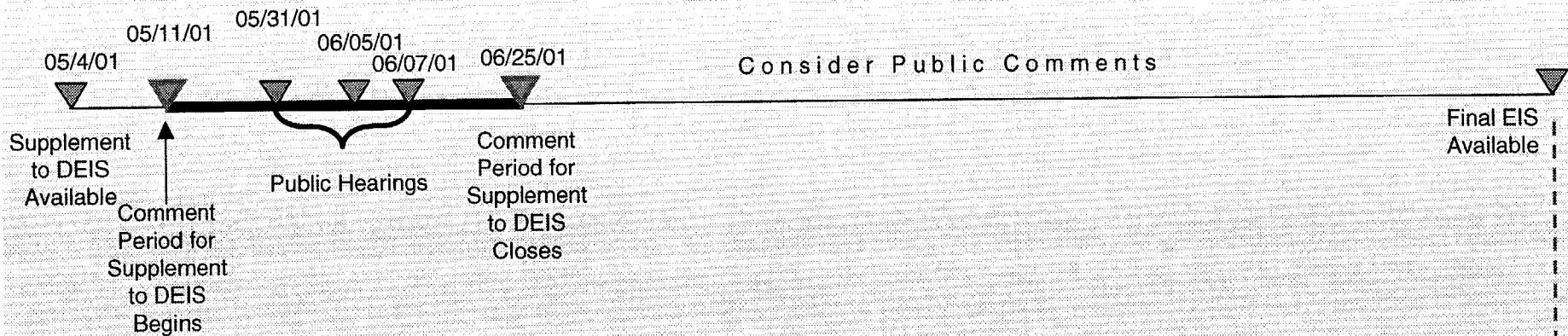
# Public Comments

- All comments, regardless of source, are treated equally and will be addressed in the final EIS
- Comments submitted by June 25th will be considered; late comments will be considered to the extent practicable
  - Orally or written at Public Hearings
  - Mail
  - Internet

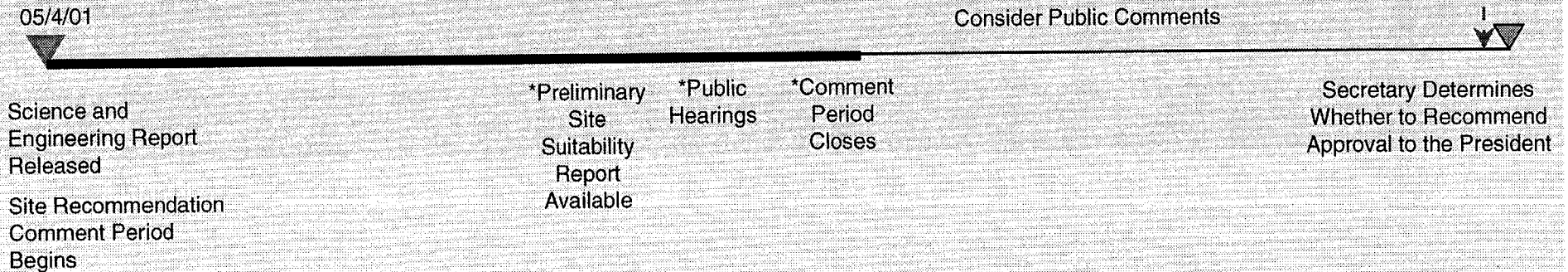


# YMP Public Involvement Opportunities in 2001

## Environmental Impact Statement Public comment period



## Site Recommendation Process Public comment period



\*Dates will be set by the Secretary

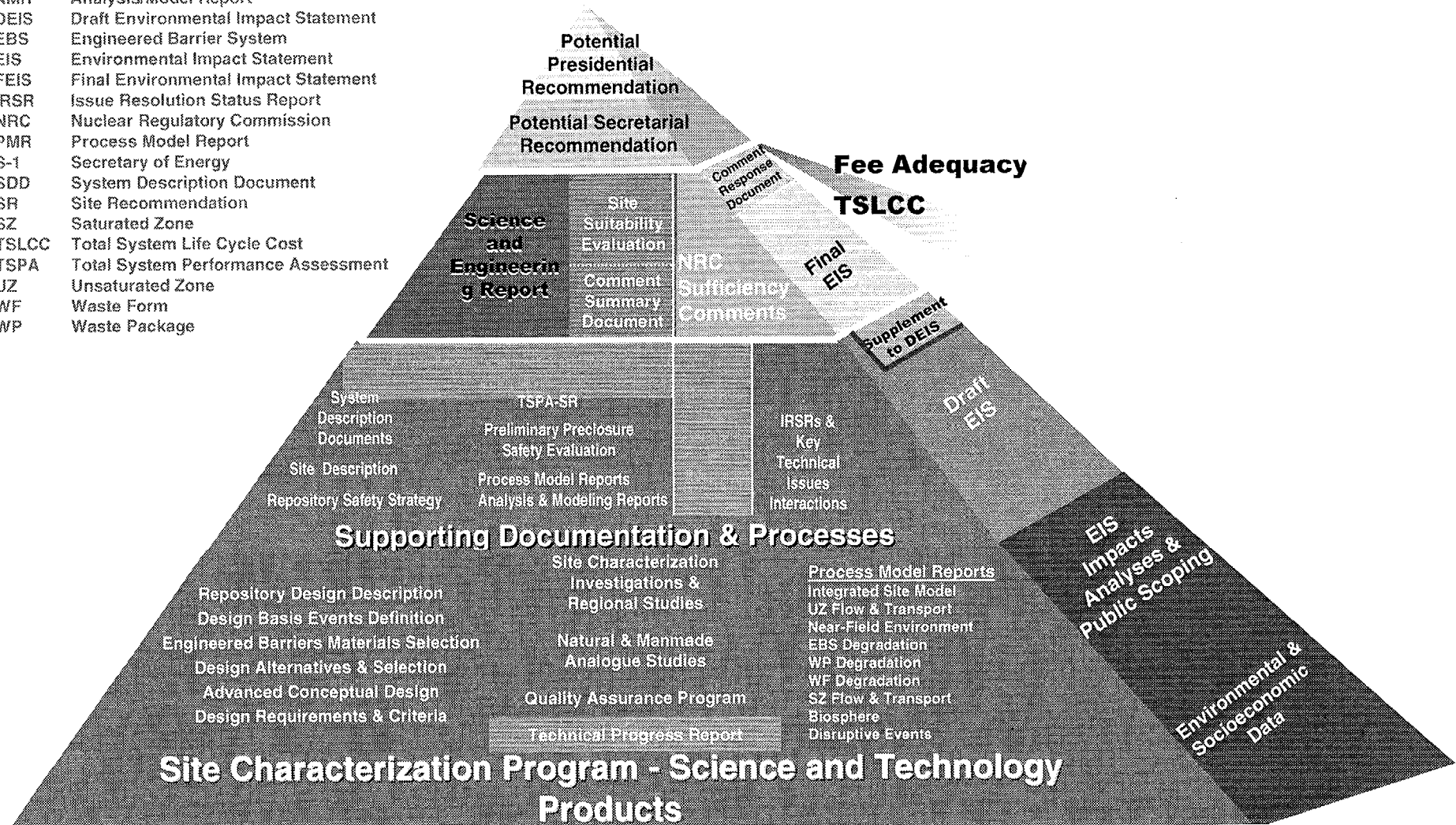
Figure not to scale

# Backup

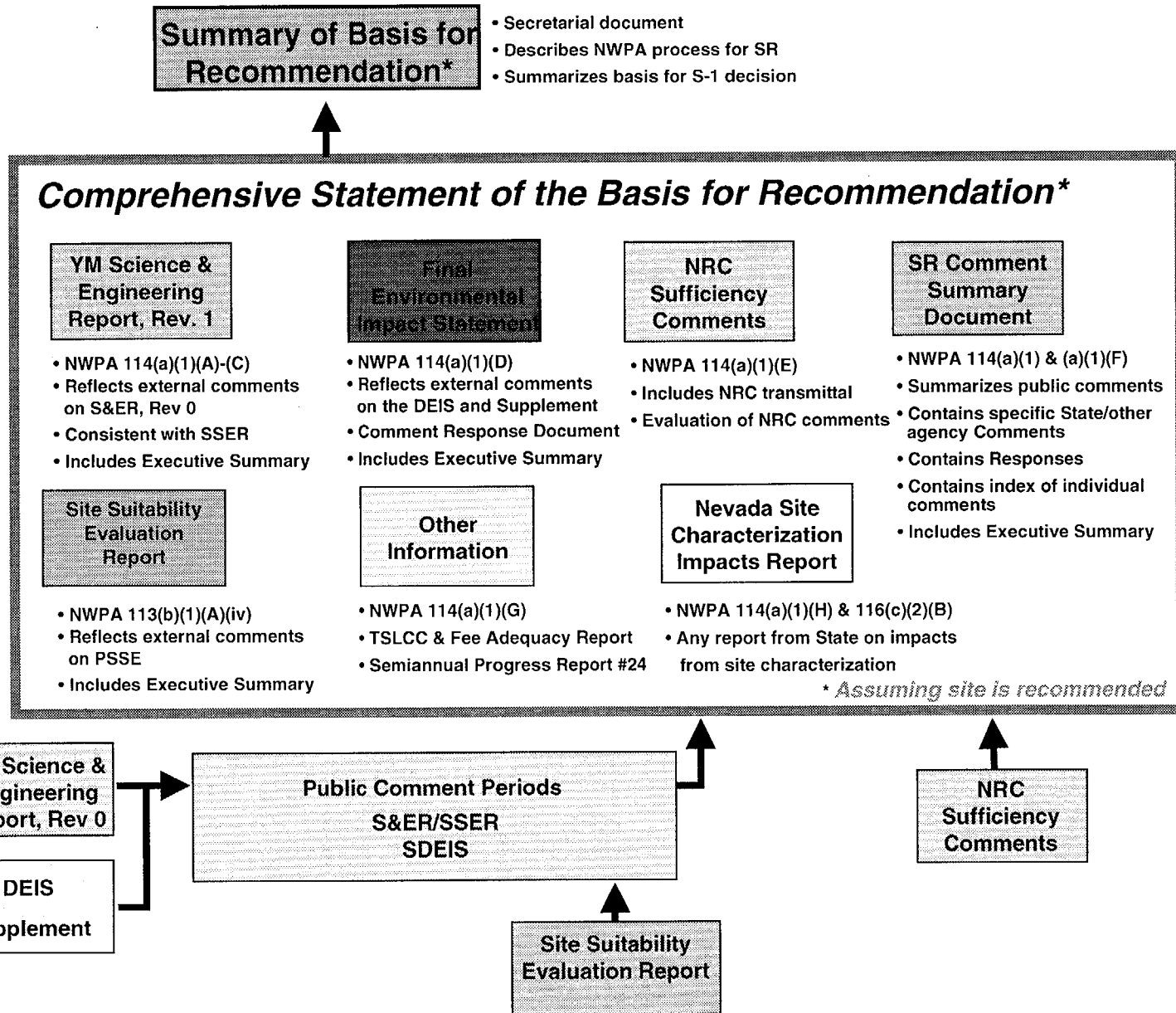


# Site Recommendation Document Structure

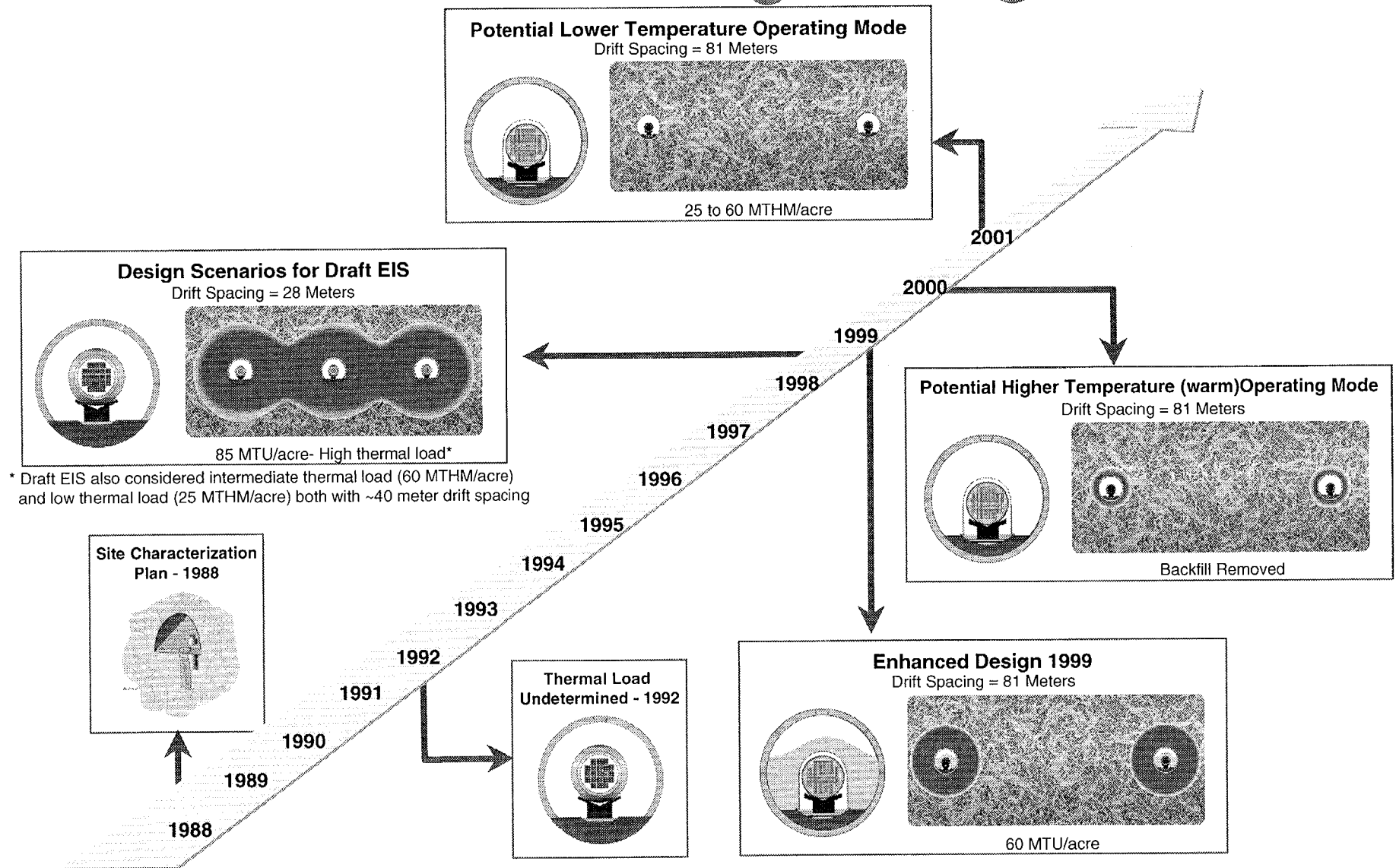
AMR	Analysis/Model Report
DEIS	Draft Environmental Impact Statement
EBS	Engineered Barrier System
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
IRSR	Issue Resolution Status Report
NRC	Nuclear Regulatory Commission
PMR	Process Model Report
S-1	Secretary of Energy
SDD	System Description Document
SR	Site Recommendation
SZ	Saturated Zone
TSLCC	Total System Life Cycle Cost
TSPA	Total System Performance Assessment
UZ	Unsaturated Zone
WF	Waste Form
WP	Waste Package



# Proposed Site Recommendation Documentation Concept



# Evolution of the Potential Repository and Waste Package Design





# Changes in Environmental Impacts

- **Short-term impacts**

- **Land use, environmental justice - no change**
- **Socioeconomics, accidents, water use (hydrology), noise, aesthetics - similar**
- **Air quality**
  - ◆ **Average radon releases - similar**
  - ◆ **Particulate matter - increase**
  - ◆ **Gaseous pollutants - decrease**
- **Land area disturbed (hydrology) - increase**
- **Biological resources - small increase**
- **Cultural resources - small increase**

# Changes in Environmental Impacts

(Continued)

- **Short-term impacts** (Continued)
  - **Occupational Safety and Health - possible increase**
  - **Utilities, energy, and materials**
    - ◆ **Electric power/peak demand, fossil fuel - increase**
    - ◆ **Concrete, steel, copper - possible decrease**
  - **Repository generated waste - increase**
  - **Transportation - increase in transportation of non-radioactive materials and workers**
  - **Offsite manufacturing - increase**
- **Long-term impacts - small decrease**



# **Review of Supplemental Draft Environmental Impact Statement for the Proposed Repository at Yucca Mountain**

---

Melanie Wong  
Environmental and Performance Assessment Branch  
Division of Waste Management  
Office of Nuclear Materials Safety and Safeguards

# **Topics to be presented**

---

- Background
- Review Plan
- Scope of Supplemental Draft Environmental Impact Statement
- Reviewers
- Schedule
- Points of Contact

# Background

---

- Nuclear Waste Policy Act of 1982 (NWPA), as amended
  - ▶ NRC comments included with site recommendation
  - ▶ NRC is to adopt DOE's FEIS "to extent practicable"
- NRC's role is as a commenting agency.

# **Review Plan**

---

- **Completeness Review**
- **Evaluative Review**

# **Contents of Supplemental Draft Environmental Impact Statement**

---

- **Design Enhancements**

- ▶ Repository Design
- ▶ Operating Modes

- **Does Not discuss**

- ▶ Transportation of Spent Nuclear Fuel or High Level Waste
- ▶ No-Action Alternative

# Reviewers

---

## ■ NRC

- ▶ Environmental Review
- ▶ Performance Assessment
- ▶ Waste Package Design
- ▶ Hydrology/Geochemistry
- ▶ Engineering Design

## ■ Center for Nuclear Waste Regulatory Analyses

- ▶ Environmental Review
- ▶ System/Mechanical/Structural Engineering
- ▶ Geology/Geochemistry



# Proposed Schedule for the Staff Review and Comment

---

## **Activity**

## **Time**

Receive DOE SDEIS/Begin staff review

May 4, 2001

Attend DOE Public Meetings

May 31, 2001

June 5, 2001

June 7, 2001

Draft Comments

May 28, 2001

Comment Period ends

June 25, 2001

# Points of Contact

---

- Mike Lee

- ▶ 415-6677
- ▶ MPL@NRC.GOV

- Matthew Blevins

- ▶ 415-7684
- ▶ MXB6@NRC.GOV

# NRC Comments on the Draft Environmental Impact Statement

---

- **Category 1** : Comments that Should be Addressed to Ensure the Completeness of the FEIS
  - ▶ **Integration of Proposed Action, Cumulative Impacts, Transportation, Mitigation of Actions**
- **Category 2**: Additional Comments Related to Completeness
  - ▶ **Environmental Justice, Water Use, Land Use, Biological Resources**
- **Category 3**: Less Significant Issues
  - ▶ **Documentation of Qualitative Judgments on Impacts and Inconsistencies, Cultural Resources, Long-Term Repository Performance, Repository Construction, Operation and Monitoring, and Closure, No Alternative Action**