ORIGINAL ACNW-T- 0139

OFFICIAL TRANSCRIPT OF PROCEEDINGS
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON NUCLEAR WASTE

Title: MEETING: 119TH ADVISORY COMMITTEE ON NUCLEAR WASTE (ACNW)

TRO8 (ACNW)
RETURN ORIGINAL
TO BJWHITE
M/S T-2E26
415-7130
THANKS!

Docket No.:

Work Order No.: ASB-300-1359

LOCATION: Rockville, MD

DATE: Tuesday, June 13, 2000

PAGES: 1 - 97

ANN RILEY & ASSOCIATES, LTD.
1025 Connecticut Ave.,NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

DISCLAIMER

UNITED STATES NUCLEAR REGULATORY COMMISSION'S

ADVISORY COMMITTEE ON NUCLEAR WASTE

JUNE 13, 2000

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Nuclear Waste, taken on June 13, 2000, as reported herein, is a record of the discussions recorded at the meeting held on the above date.

This transcript had not been reviewed, corrected and edited and it may contain inaccuracies.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

ADVISORY COMMITTEE ON NUCLEAR WASTE

***

119TH ADVISORY COMMITTEE ON NUCLEAR WASTE (ACNW)

***

Nuclear Regulatory Commission
Two White Flint North
Room 2B3
11545 Rockville Pike
Rockville, MD 20852-2738

Tuesday, June 13, 2000

The Committee met, pursuant to notice, at 10:45 a.m.

MEMBERS PRESENT:

B. JOHN GARRICK, Chairman, ACNW

GEORGE M. HORNBERGER, Vice Chairman, ACNW

RAYMOND G. WYMER

MILTON LEVENSON

C O N T E N T S

P R O C E E D I N G S

[10:45 a.m.]

CHAIRMAN GARRICK: Good morning. Our meeting will come to order. This is the first day of the 119th meeting of the Advisory Committee on Nuclear Waste.

My name is John Garrick, Chairman of the ACNW. Other members of the committee include George Hornberger, Ray Wymer and Milt Levenson.

During today's meeting we will discuss committee activities and future agenda items; review and comment on the final draft version of the branch technical position on low level waste performance assessment; hear and discuss the results of public comments on a draft policy statement on decommissioning criteria for the West Valley Demonstration Project; and we will discuss plans for its own review of the Yucca Mountain site suitability and licensing application process, our task action plan.

Richard Major is the designated federal official for today's initial session.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act. We have received no written statements from members of the public regarding today's session. Should anyone wish to address the committee, please make your wishes known to one of the committee's staff. And, as usual, it is requested

that each speaker use one of the microphones, identify themselves and speak clearly.

Before proceeding with the first agenda item, I would like to cover a few items of interest. The committee is very pleased to welcome Milt Levenson as a new member of the committee. Milt was officially named to the Advisory Committee on Nuclear Waste by Chairman Richard Meserve on May 17th.

Also, we would like to welcome two new ACRS/ACNW staffers, Magdalene Weston and Jenny Gallo. And we have some changes in staff that we would like to acknowledge. Unfortunately, we are going to have to say farewell to Lily Gaskins, who has been a tremendous help to ACNW over the past six years. Lily has accepted a position with the Defense Intelligence Agency and we wish very well on her new career change.

As you know, on April 25th, President Clinton vetoed the High Level Nuclear Waste Bill. The bill approved by the Senate in February and the House in March would have provided for early receipt of civilian spent fuel at Yucca Mountain in the year 2007. The bill would have also limited EPA's authority to issue radiation standards, and the Senate failed to override the veto in an early May vote.

The State of Utah has received an application from Envirocare of Utah for Class B and C waste. The state will

review the site and report, first, to decide whether it is acceptable before beginning a review of the application itself.

The Rocky Mountain Compact, which is Nevada, Colorado, New Mexico, expects to receive an application from Waste Control Specialists for a disposal site in New Mexico, across the Texas border from WCS's waste storage site. And this application is expected to include waste Classes A, B and C. Apparently, New Mexico is interested in the prospect of an application being submitted.

We have a couple of other items we want to mention. We are very pleased to announce that on June 22nd, Theron Brown will be receiving the Commission's meritorious award, Excellence Award for his outstanding contribution to the Commission. As you all known, Theron is the gentleman that makes possible all this audio-visual activity that we carry on in these meetings, and we are pleased that he is receiving this recognition.

I also want to note that on June 7th, the governor of South Carolina signed into law the Atlantic Interstate Low Level Radiation Waste Compact Implementation Act. I don't know, Howard, if you want to make a comment or two on what all that means, but you might want to.

MR. LARSON: No, not really. I did send to all the members the notice, the three page notice from the Low

Level Waste Forum where, in addition, to indicating that South Carolina, New Jersey and Connecticut are this compact, there also is a gradual reduction in the quantities of waste that they will receive over the next several years.

I guess I would like to say one thing, John. John mentioned that there were two new members of the ACRS/ACNW staff, one of them Mag Weston, who is principally working with the ACRS, but she is today at Davis-Besse on a site tour with many members of the ACRS, and the other is Jenny Gallo, who is hiding over here, who many of you probably have not seen since she came since your last meeting. Jenny has helped Lynn out on a lot of things and will help us all out in budgeting analysis, presentations, innumerable things.

CHAIRMAN GARRICK: Is she tied to the California Gallo family?

[Laughter.]

MR. LARSON: Do you want a free tour of the winery, John?

CHAIRMAN GARRICK: All right.

MR. LARSON: I don't know.

CHAIRMAN GARRICK: I think that is -- do you have anything you want to add to any of this?

[No response.]

CHAIRMAN GARRICK: Okay. The first item on our

agenda is low level waste branch technician position on performance assessment. As all of you know, this has been a major issue. It has been a difficult task in trying to achieve a reason balance between the traditional ways of doing performance assessment and the corporation in the methods of a risk-informed approach. And I know that both options are available as a result of the branch technical position, and we are going to hear about that and a lot more from Mark Thaggard.

Mark, do you want to introduce yourself and tell us what you are going to tell us?

MR. THAGGARD: Okay. Can everybody hear me? I might be a little loud.

Okay. My name is Mark Thaggard, I am a senior analysis in the Division of Waste Management, and as Dr. Garrick pointed out, this effort has been going on for quite some time. And as I was talking to Andy Campbell before the meeting, I am kind of like the last man standing on this. There have been quite a few other people that have worked on this effort in the past.

What I am going to be talking about today is the technical report on low level waste performance assessment. I have gone my phone number and e-mail address here in case anyone has some follow-up questions.

The outline of my presentation, first of all, I

would like to go over the purpose of the presentation, specifically, what we are hoping to get from the committee. Provide some background information on development of the document, and I think this may be kind of pertinent considering the fact that the document has been around for a number of years and I believe the last time we briefed the ACNW was back in 1995. And, so, we have gotten a lot of new members since that time.

Also, as part of the background, I would like to talk a little bit about some of the attributes of the performance assessment that is discussed in the document, along with some positions that we have taken in the document.

The primary purpose, I mean the primary thing that I would like to cover today is the comments that we got on the document and how we are proposing to respond to those comments, along with the revisions that we are making to the document. And then I would like to end with a brief summary.

We plan to publish the document as a NUREG and provide it to the Commission for information purposes. We were directed by the Commission, and I will go into this in a few minutes, but we were directed by the Commission a while back to go out for public comments on the document, so we feel obligated to go back to the Commission and let them

know how we are responding to the comments. So, we would like to -- we would be very interested in any feedback we can get from the committee on how we are addressing the comments and also how we are proposing to change the document in general.

Okay. Now, I would like to kind of walk through a little bit of the history of the development of the document. As most of you may recall, back in the late '80s and the early '90s, there were a lot of activities going on in the low level waste area. States were forming compacts. Some states were actually in the process of licensing low level waste disposal facilities, all in an effort to meet some milestones within the Low Level Policy Amendment Act of 1985, which had 1993 and 1996 milestones.

In 1987, the NRC developed what we call the performance assessment strategy, and that was actually authored by John Steimer, who I see sitting in the back, along with Lynn Deering.

We also contracted with Sandia National Laboratory to develop what we called the performance assessment methodology, which they documented in a series of NUREGs, 5453.

Now, as I indicated, -- let me flip this around. As I indicated, back in the early '90s, we were having a lot of activities in the low level waste area, and the

Commission became concerned at that time as to whether or not, if we got a license application, whether or not we would be able to review that application within 15 months, as was called for in the Policy Amendment Act.

So, the Commission directed the staff through a SRM to develop a plan for enhancing its performance assessment capabilities in the low level waste area. And, so, with SECY-92-060, the staff developed a plan for enhancing its performance assessment capabilities and a key component of that was development of some guidance on how to conduct performance assessments. So, that is kind of where we -- how we got started in this effort.

In the early '90s, the staff from NMSS and Research, in what we called the Performance Assessment Working Group, developed a preliminary draft for the document. In parallel with that, we conducted a test case analysis where we actually were trying to analyze a hypothetical low level waste facility. This not only allowed us to look at some of the assumptions and approaches that we were proposing to put in the document, but it also gave us a way to help enhance the staff performance assessment capabilities.

After we developed a preliminary draft of the document, we had public workshops. We also briefed ACNW at that time. And, based upon the feedback we got from these

groups, we revised the document. And in 1996, we developed a draft version of the document, went up to the Commission with the draft and requested permission to go out and seek public comments on the document.

In this SECY paper, we also identified four regulatory positions that were taken in the document, and I am going to go over those in a few minutes.

In a staff requirements memorandum in August of ''96, the Commission approved the staff request to go out for public comments on the document. In addition, the Commission asked the staff, prior to finalizing the document, to come back to the Commission with additional technical justification for truncating the performance assessment analysis at 10,000 years. This was one of the policy issues addressed in this SECY paper here.

The staff requirements memorandum also directed the staff to seek public views on this issue of dose discounting, which has to do deal with the current economic cost of design and performance against future health risk. This issue wasn't addressed in a document, but the Commission for some reason asked staff to get public views on it.

So, through a Federal Register Notice in 1997, we went out, made announcement on the availability of the document. Although it was like a 90 day time period for

getting comments, we are just getting around to finalizing the document this fiscal year, because we have obviously had some cutbacks in our low level waste program and, also, we have had some other higher priority work.

I will point out that completing the document is in the agency's performance plan for this fiscal year to be completed, so it is important that we get it done this year.

And the last thing I would like to point out is that our original plan was to finalize the document as a branch technician position, and now we are planning to simply publish it as a NUREG document.

MR. HORNBERGER: I understand all the difference in the letters, Mark, but what does that last thing mean?

MR. THAGGARD: Branch technical position?

MR. HORNBERGER: Well, no, I mean I understand the branch technical position and a NUREG. What is the difference between publishing it as one and not the other?

MR. THAGGARD: A branch technical position carries a little bit more weight to it. It is similar to like a guidance document that basically laws out approaches that the agency finds acceptable. Whereas, basically, anybody on staff can develop a NUREG and state their position. So, the positions in the document can be just the positions of the Performance Assessment Working Group, they don't necessarily have to be the position of the agency. Whereas, if it was a

branch technician position, it would be stating, you know, we would be stating that these are the agency's positions. So, I don't know if that gives you a flavor.

CHAIRMAN GARRICK: Well, does that really mean then you are still undecided about what the position of the branch is?

MR. THAGGARD: No, I think -- one of the reasons for just publishing it as a NUREG is that, obviously, our involvement in the low level waste area has been greatly reduced over the years. And, so, there is really less of a need to put out a document which -- I mean a document of the stature of a branch technician position. However, there may be some useful information in there that we can give the Agreement States and some of the other people that are involved in conducting performance assessment, and we probably ought to share that information with those other groups.

I don't know if this has anything to do with the fact that positions are not clear. I mean, obviously, some of these positions are policy issues and they have gone up to the Commission once. And our plan was to go back to the Commission -- I mean our plan is to go back to the Commission again, but I don't know if that really weighs into it. We can get into that some more if you want.

When we started developing the branch technical

position, one of the things that we did was we looked at some of the approaches that were being used for doing performance assessments and looked at some of the concerns that we had with the approaches that were being used, and tried to factor these into the document.

One of the clear concerns we had was that most of the performance assessments that were being done at that time, they were not done integrating the site characterization and the designs, it was almost done as a separate entity.

Another concern is that most of the site characterization work focused primarily on the groundwater, and in some cases it turned out the groundwater may not have been that important of a pathway.

And, also, most of the performance assessments done at that time, there was very little consideration given to the treatment of uncertainty.

So, in developing the performance assessment approach that is in the document right now, there are certain attributes that I would like to discuss. First of all, it is designed to look at long-term performance that is post-closure. And, so, issues associated with inadvertent intruder or dose to the public during operation, they are not really covered under the performance assessment approach that we are talking about here, although the document does

talk a little bit about the consideration of inadvertent intruders.

The performance assessment approach in the document is structured after the performance assessment methodology that was laid out in those series of NUREGs developed by Sandia National Laboratory. I apologize for the quality of this. But, basically, what we have tried to do in the document is each one of these areas here, we have tried to address concerns or approaches of how to analyze each of these technical areas. So, if you go through the document, you will see a section on each of these technical areas.

Another key aspect of the document -- I apologize, I am flipping back and forth to page 8. Another key consideration in the document is that the performance assessment approach that we laid out calls for an iterative process. Basically, what this means is that we are suggesting that people start the assessment using the available information that they have, develop their conceptual models and their mathematical models, carry out the analysis, and then do some sensitivity analysis. And from those sensitivity analyses, they can identify the key assumptions and parameters that are driving the analysis and that can feed into their site characterization and their design, and then they can update the analysis as necessary,

so it will be an iterative process. And this would allow an integration of the site characterization and the design with the performance assessment.

And the last thing, the last attribute I would like to point out is that we obviously tried to cover the issue of the treatment of uncertainty, which I am going to talk about in a few minutes.

Okay. Now, I would like to talk briefly about the four regulatory positions that are stated in the document. As I indicated that SECY paper that we went up to the Commission, we identified four policy positions. And I would just like to touch upon what those are in the document.

The first position has to do with the timeframe of the analysis. If you look at 61.41, there is no definitive timeframe as to over which the analysis should be carried out. And, so, we tried to address this document, and our position is that the analysis should be carried out 10,000 years, but if you have got peak doses beyond 10,000 years, you should look at that information and use it, because it might be able to help determine whether or not there is some need for inventory limits or something of that nature. So, it is a two part approach that has a 10,000 year compliance period, with a qualitative evaluation beyond 10,000 years.

Another regulatory position had to do with the

consideration of future site conditions and processes. And this concerns what assumptions should be made about the condition of the site in the future. And our position in the document is to use a "reference geosphere" and "reference biosphere" based upon current site conditions.

CHAIRMAN GARRICK: Do you have any sense of what fraction of the low level waste would have peak doses beyond the 10,000 year compliance period?

MR. THAGGARD: No, I don't know if I have a specific number. We did some analysis as part of the test case, and we found that most of the peaks were occurring within 10,000 years. Obviously, in some cases you are going to see that if you have got, for example, large quantities of uranium or some other transuranics, or if you are in an arid environment, for example, you may get cases where -- but I don't know if I have a definitive number on that. But in the analysis that we looked at, most of the peaks occurred within 10,000 years.

CHAIRMAN GARRICK: Yes. The only reason for asking the question, of course, is it is my understanding that a lot more of the low level waste is contaminated with uranium than we had ever envisioned, and that could play a role in the peak dose calculation.

MR. THAGGARD: Yes, that is correct. And I see Andy wanting to make a comment on that.

MR. CAMPBELL: Yes. We looked at different timeframes and for the mobile radionuclides like iodine-129, chlorine-36, tech-99, most of the doses occurred fairly early.

CHAIRMAN GARRICK: Right.

MR. CAMPBELL: Basically, you have very little KD. So, as soon as your cover has failed, and you get natural infiltration, then you see a dose, and that usually occurs within the first thousand years. You see doses later on from things like radium put into a low level waste site. At very long timeframes, you can see doses due to the in-growth of daughters of uranium. But those in-growth doses don't become, you know, don't begin to approach the limit until you are a 100,000, 200,000, 300,000 years out.

CHAIRMAN GARRICK: Right.

MR. CAMPBELL: For the kind of inventory we did in the test case, which was a few hundred curies of uranium.

CHAIRMAN GARRICK: Yes.

MR. THAGGARD: Yes. I think to answer your question, though, I don't know what percentage of low level waste sites have a higher percentage of uranium than we originally anticipated.

CHAIRMAN GARRICK: Right.

MR. THAGGARD: I don't really have the answer to that.

Another regulatory issue, regulatory position that we took in the document has to do with the performance of engineered barriers, and this relates to how long should we assume that the barriers remain effective in terms of isolating the waste. The position we took in the document is that beyond the 500 years, the barriers should be assumed to be degraded, however, structure stability and chemical buffering could be considered to last longer than 500 years.

The last regulatory position dealt with the treatment of sensitivity and uncertainty. And a couple of questions that we tried to address is whether or not deterministic or probabilistic analysis should be used. And for probabilistic analysis, what part of the distribution curve should be used to make the determination of compliance?

The position we took in the document is that either deterministic or probabilistic analysis could be used. For deterministic analysis, the analysis should be demonstrably conservative is the position that we took. And for probabilistic analysis, the mean of the distribution should be less than the performance objective and the 95th percentile should be less than 100 millirem.

Okay. That is just to touch upon the four regulatory positions in the document. Now, I would like to go over some of the comments that we got on the document.

First, as an overview, we sent out over 200 copies of the document in response to that Federal Register Notice, and we only got comments from 17 different organizations. These included Agreement States, Non-Agreement States, two federal agencies and some other organizations such as NEI and some of the low level waste disposal facility operators.

On balance, the comments that we got were somewhat favorable. We got comments such as the document fulfills a need, it is well written. It reinforces ongoing efforts, and it provides helpful and useful guidance. So, on balance, the comments we got were favorable.

The comments that we did receive focused primarily on those four regulatory positions I just touched upon. We also got some comments on the dose methodology, ALARA, institutional controls and groundwater protection, and I will go over these in a few minutes.

A key revision that we are going to make to the document, as I pointed out at the beginning, is that we are not going to publish the document as a branch technical position but now our intention is to simply publish it as a NUREG. So, the positions in the document are going to be the positions of the Performance Assessment Working Group.

Okay. Now, I would like to touch upon some of the key comments we got. First, the comments on the time of compliance seemed to be a big issue. And we got, basically,

comments all over the place. Some commenters suggested that a shorter time should be used, such as 500 years. We also got comments that the 10,000 year compliance period that is recommended is appropriate, it serves as a good balance between these two. And then we got comments that the 10,000 year period was not long enough, that the dose should be carried out to peak regardless of what time that is.

And our response is, right now is that we believe that the 10,000 year compliance period is still appropriate because it generally includes the period of time when the waste is most hazardous. It is sufficiently long to allow evaluation of the natural system, whereas, if you use a shorter time, you are primarily look at an evaluation of the performance of the engineered barriers. And, also, it is consistent with the other regulations, not only NRC regulations, but EPA's regulations. So, we feel that the 10,000 year compliance period is still appropriate.

Just to give you a little bit more information on that, some of the rationale we came up with for developing the 10,000 years is that we think that the time of compliance should provide a good basis for distinguishing between good sites and bad sites. And what I mean by that is that -- one of the comments that we got on the document, people suggested that, well, we should use a shorter time period such as 500 years because there is so much

uncertainty in the analysis that we won't have much confidence in the results beyond a fairly short period of time.

And our position is that the goal of the analysis is not to come up with a true prediction of what the doses are going to be, but, you know, to test the robustness of the facility. And, so, we don't necessarily have to get an accurate estimate.

The other thing is that we think that the time of compliance should allow us to look at multiple barriers, whereas, if we were using a shorter time period such as 500 years, we would be primarily just looking at the performance of the engineered system, whereas, if we allow a longer time period, that allows us to evaluate the performance of the natural setting. And, also, we believe that the time of compliance should not arbitrarily limit the information to decision-makers. And we think that the approach that we have come up with, the approach that we have advocated in the document allows us to do this, and this was also a recommendation by the National Academy of Sciences of the technical basis for Yucca Mountain.

Some other considerations for the use of the 10,000 years is we believe that, generally, PA calculations are more reliable for estimating dose than estimating the time of occurrence of the dose. And, so, you may wind up

having to do some complex analysis to demonstrate compliance if you are relying on delaying the releases.

MR. HORNBERGER: Mark, do you have any basis for that first bullet, or is that just the gut level feeling of the working group?

MR. THAGGARD: I think it is the gut level feeling. Although I think the genesis of this actually came from some analysis that was done in the high level waste program. I think they did a lot of analysis in there, and I think this was the general conclusion that they were drawing from their analysis.

Also, there was limited support for a shorter compliance period such as a thousand years when EPA went out for soliciting comments on their proposed 10,000 year compliance period. A 10,000 year compliance period was -- I mean a 10,000 year timeframe was also used by several of the states in their assessments, and it was also used in the draft EIS in developing the rule. So, those are just some other considerations.

Okay. Now, to move on to another regulatory position. We got comments on the position on the performance of the engineered barriers. The general comments that we got is that the assumed 500 year life is arbitrary and without technical justification. We also got comments that having a 500 year performance life would tend

to discourage research to improve barrier performance.

And our general response is that we think 500 years is appropriate because it allows, it generally allows sufficient time for decay of the short-lived radionuclides, which is primarily what the engineered barriers are designed to protect us from. And, also, we reiterate the fact that the document does allow people to assume longer time periods, they just need to justify it. So, although we do provide a 500 year timeframe in the document, people can use longer timeframes if they can justify it.

And the other thing that I point out is that the document reiterates the need that, no matter what time period you use, whether it is less than 500 or beyond 500, you need to provide a justification for it. And the simple fact that the document reiterates the need for this justification, we think that in itself should help continue to encourage research into the performance of the barriers.

We also got comments on the position on future site conditions. Some of the comments we got were that uncertainties in human activity should be considered, use of the "critical group" concept was not justified. And our responses are that consideration of future human activities we think is highly speculative, and there is really no scientific or technical answer on that. The use of the "reference biosphere" and "critical group" concept is

consistent with international opinion and practice.

We also got comments on the treatment of uncertainty. Some of the general comments we got are that use of the mean is not justified. Use of the mean is appropriate, but it may be difficult to communicate to the public. And we took that to mean that it may be difficult for the public to accept. Also, we got comments that use of probabilistic analysis in general could be an invitation to failure.

And our response is the selection of the mean has both policy and technical considerations, so, we can't just give a technical reason for why we selected the mean, although we believe that the use of the mean provides the best estimate of the system performance. We think that the approach that we have laid out for doing the performance assessment in the document will help identify the sources of uncertainty and that in itself should help build confidence in the results.

CHAIRMAN GARRICK: I don't suppose you would want to be so bold as to say that the use of the whole curve provides the best estimate of the system performance.

MR. THAGGARD: Excuse me, did I miss --

CHAIRMAN GARRICK: Instead of a part of the curve. Well, I am just needling you a little bit.

MR. THAGGARD: Okay.

CHAIRMAN GARRICK: I can't agree that the mean provides the best estimate of the system performance. It is the best estimate if you are going to have to lean on a central tendency parameter.

MR. THAGGARD: Yes.

CHAIRMAN GARRICK: But the best estimate is to tell a whole story, and the whole story is the whole curve.

MR. THAGGARD: Okay. The last point on this is that the proposed approach that we are taking is consistent with approaches that are being used in other program areas.

Okay. Now, those were some of the comments that we got on the four regulatory positions. Now, I would like to walk through some of the other comments that we received. We got some comments on the fact that the document recommends that people use the conventional TEDE calculation in doing their dose analysis, whereas, the standard is based on this ICRP whole body -- ICRP 2 whole body methodology. And, so the, standard is a little bit outdated, and, so, we got some comments on that.

And our response is that the Commission, as a policy, the Commission generally considers the use of the TEDE to be appropriate for evaluating against the ICRP 2 whole body methodology.

We also got a suggestion that the document needs to provide guidance on how people should do ALARA,

demonstrate ALARA, because that is a requirement in the rule And, so, we have included some discussion in the document to spell out a little bit how people can do that in terms of looking at the cost and benefits of various designs.

We got a comment on institutional controls and that institutional controls should be maintained at the disposal site as long as the waste remains hazardous. And our response is that Part 61 obviously limits reliance on institutional control to 100 years, but we think in most cases they are going to probably be maintained much longer than that.

CHAIRMAN GARRICK: Now, is hazardous greater than 25 mr, is that what you mean by hazardous?

MR. THAGGARD: Well, I am just restating what the comment is, so you kind of have to leave it to your own interpretation of how want to interpret that.

CHAIRMAN GARRICK: Okay.

MR. THAGGARD: That is what I would -- that is how I would interpret it.

We also received comments from EPA that meeting 61.41 will not ensure compliance with the EPA's MCLs. And our responses are that the comment, for the most part, is beyond the scope of the document, since it deals with the specific language in the rule. But we feel that the current regulations provide adequate protection. MCLs were not

developed specifically for groundwater protection and MCLs are based on an outdated modeling approach.

Some other comments that we received, we got some suggestions that the test case analysis that we worked on should be documented, because it could provide a useful example. And our response is that, because of limited resources and other priority work, the agency has decided not to publish the document. However, it was presented as part of a two day public workshop, so it was made available to the public.

We also got a suggestion that the document should advocate the use of peer reviews, and we kind of agree with this suggestion, and, so, we have included some language in the document encouraging the use of peer reviews and expert elicitation.

We got a comment that the document should address the issue of criticality. And as noted by the commenter, we feel that there is an extremely remote possibility of this occurring, because in most cases we think that appropriate measures are going to be taken during site operation to prevent this from happening. And, also, we note that the agency is also planning to develop some additional guidance on this.

Okay. Now, I would like to just touch upon some of the key revisions we are planning to make to the

document. First of all, we have responded to every comment that we got. As I indicated, we got 175 comments, depending upon how you count them. We have developed a response to each comment, although I have tried to summarize them here today, and that is going to be included as an appendix to the document.

We also felt that it would be important to include the Commission's policy statement on the use of PRA methods, and, so, we are going to include that as an appendix to the document.

We got a couple of comments suggesting that we provide additional information the performance of engineered barriers and, so, we have included a bibliography on engineered and natural barriers.

We have also revised the approach that we are advocating on how to deal with the treatment of uncertainty, and I am going to touch upon that in a few minutes. And, as I indicated, we have provided some discussion in the document on the Commission's position on the use of TEDE, and we provided some information on how to demonstrate ALARA, along with recommendations on the use of peer review and expert elicitation. And throughout the document, we have tried to provide additional clarification in some other areas where we felt that was needed based upon the comments that we got, including expanding the glossary.

And as the last bullet here, which you may not be able to hardly see, notes, as I have stated before, our plan is to publish the document now as a NUREG.

Okay. I would just to touch upon what we are proposing to do with this approach on the treatment of uncertainty. As I indicated before, in the previous approach, we were advocating for probabilistic analysis that the mean of the distribution should be less than 25 millirem and the 95th percentile of the distribution should be less than 100 millirem. That was the approach that we previously advocated.

Now, we are advocating something slightly different in that we are saying that the peak of the mean dose as a function of time should be less than 25 millirem and the plot of the upper 95th percentile should be less than 100 millirem. And I will give you an example of this in a minute.

Now, the reason for this change is not based upon the comments that we got, but we feel that this approach is generally consistent with the approach that is being used in the high level waste program and, also, what we are proposing in the decommissioning program. And, also, we think that this provides better representation of risk to an individual and, so, it should be a little it more in line with the agency's risk-informed regulatory philosophy.

Okay. We look at these two curves here, this kind of shows what we are doing. In the previous approach for the treatment of uncertainty, what we were saying is that if you take a look at the distribution of peak doses, the mean of that distribution should be less than the 25 millirem, and the 95th percentile of the distribution should be less than 100 millirem.

The approach that we are advocating now is that you take a plot of mean doses, these are mean doses at individual times and if you plot those over time, that should be less than 25 millirem. And if you take the 95th percentile doses at time and plot that over time, that should be less than 100 millirem. So, that is the approach that we are advocating now.

Okay. It is not clear?

MR. HORNBERGER: It is clear, but I can't believe that that is an approach used in high level waste. You are taking the mean dose at time K.

MR. THAGGARD: Yes.

MR. HORNBERGER: From a variety of realizations.

MR. THAGGARD: Yes. And you are plotting that over time.

MR. HORNBERGER: And you are plotting that over time.

MR. THAGGARD: And you are taking the peak of

that.

MR. HORNBERGER: I think that I could -- it wouldn't take me long to think of a pathological case that would give you the nonsensical result. I'm sorry. Never mind. Go ahead, Mark.

MR. THAGGARD: Okay.

MR. McCARTIN: Well, I guess, for high level waste, I mean we are taking -- Tim McCartin, NRC staff. For high level, I mean we are creating a mean dose curve that is the summation of all the different realizations, and then you are just taking the highest dose on that curve at each -- at a particular instant in time, say, at 100 years, if you did 100 realizations, you would have 100 estimates of the dose.

MR. HORNBERGER: Yeah.

MR. McCARTIN: And you would take the mean. And if you go to 200 years and do the same thing.

MR. HORNBERGER: Right. And Part 63 is based on the peak of that curve?

MR. McCARTIN: Right. From a risk standpoint, you are looking at -- previously, as Mark indicated, if you just took the mean of the peaks, you would be averaging a peak at, say, a 2,000 year dose with a 200.

MR. HORNBERGER: Right.

MR. McCARTIN: And then you don't -- in terms of

an individual risk, it wasn't a good reflection of individual risk is why we went to the peak of the means.

CHAIRMAN GARRICK: Did you consider doing it in CCDF form? Where you have probability as a parameter, and each member of the family constitutes a percentile. So that would be a nice way to do this, too, I would guess. We can talk about that offline.

MR. McCARTIN: Okay.

MR. HORNBERGER: Let me make sure that the difference between the previous approach and the proposed approach are clear. The distribution that Mark is talking about in the previous approach was really, say, you did several hundred realizations, from each realization, you would find the peak dose. Then you would take the mean of that value and that is what you would compare to the Part 61 dose limit. As Tim pointed out in the --

MR. McCARTIN: And you are talking any account of the time that that occurs?

MR. THAGGARD: That's correct.

MR. HORNBERGER: That's right. And the approach that Tim is talking about, you take whatever, several hundred realizations and you make a mean dose versus time curve, and then pull the peak off of that, so there is a significant difference between how you do it.

MR. McCARTIN: Yeah, I can understand the CCDF

approach quite clearly that John mentioned, but there is something logically wrong to me doing the calculation the way you just described and using that as a standard.

CHAIRMAN GARRICK: We need to pursue this further.

MR. HORNBERGER: Yes.

MR. THAGGARD: Okay. Now, I would just like to summarize real quickly. As I stated, on balance, the comments that we got on the documents were fairly favorable, although I kind of gave you the bad side of the picture by giving you the comments.

The positions in the document remain largely unchanged, except with this treatment of uncertainty issue. The other positions remain pretty much unchanged, although, as I indicated, because we are going to publish the document simply as a NUREG, these are going to reflect the views of the Performance Assessment Working Group. And, as I indicated, we revised the position on the treatment of uncertainty to try to be more consistent with what is being done in the other program areas.

We have responded to all the comments individually, so, if you go to the document and look in that appendix, you will see that we responded to each of the comments. And then we just tried to provide additional information as needed in the document to make it a little bit clearer. So, that pretty much concludes that I had to

go over and I will try to answer your questions.

CHAIRMAN GARRICK: Well, let me go around the committee. Milt, do you have some questions?

MR. LEVENSON: No.

CHAIRMAN GARRICK: Ray?

MR. WYMER: I have a comment. At a very high philosophical level, I was struck by the very great similarity, in general, in how this was treated and how the high level waste in the Yucca Mountain repository is treated. I mean the whole strategic approach was very similar, with an outstanding exception, and it seems to me sort of anomalous.

The exception is that you limit the lifetime of barriers, without additional justification, to 500 years. This is for low level waste. There is no such limit on the high level waste repository. And it seems to me that it would be more desirable for that situation to be reversed, considering the hazard posed by the types of waste. So, I wondered why you stuck the 500 years in there when it is not there in the high level waste. It seems sort of inconsistent.

MR. THAGGARD: Yeah. We got a lot of comments on that, people suggesting that we shouldn't have any time limit in there. One of the reasons for the 500 years is because it is the general feeling that, for low level waste,

most of the hazard -- I mean most of the short-lived radionuclides are going to be decayed after 500 years. And that is primarily what the barriers are designed to protect you for.

MR. WYMER: But that is no justification for putting a 500 year limit on it. Anyway, that is an observation.

And my second observation is -- okay, Tim.

MR. McCARTIN: Yeah. Tim McCartin. I mean we did not impose a strict limit of 500 years. We thought after 500 years it would be increasingly difficult, with little benefit. But there is not -- as Mark indicated, whatever credit they -- likewise, we weren't giving 500 years credit with no support. Whatever a licensee came in with, they would have to defend. We only gave the idea that after 500 years, the benefit of taking credit for it would be fairly diminished, because you would have to go to very long periods then because, you know, the remaining hazard is there for almost forever.

MR. WYMER: Really, the thrust of the comment had to do with the difference between the high level waste and the low level waste, as opposed to what you did for low level waste.

MR. THAGGARD: Yeah, but you are probably looking at a different type of barriers, too. I mean what we did in

coming up with the 500 year number is the engineers that were involved in this effort, they looked at the different type of engineering components that you are likely to see in a low level waste site. And, quite frankly, it was their expert opinion that they didn't think you could rely on these any more than 500 years.

Now, if they looked at the type of components that is in a high level waste program, they may have looked at something -- I mean they may have come up with a different number. Unfortunately, they have since retired, so, we can't -- we can't get into that discussion with them.

MR. McCARTIN: Well, with respect to high level waste, I mean, once again, DOE has the flexibility to come and defend whatever number they come up with. We haven't specified any minimum value. There is a difference in that there is a -- the hazard level is higher for the high level waste repository, and, so, they may -- there is justification and merit in creating, obviously, a much longer-lived container.

Low level waste, it was primarily earthen covers and concrete. And so --

MR. WYMER: Yeah, I realize that. It just seems to me you sort of set yourself up for a problem.

My second observation is you have managed to destroy my confidence in the use of NUREG documents.

[Laughter.]

MR. THAGGARD: Okay. Well, at least I accomplished something here today.

MR. HORNBERGER: Mark, following up on Ray's NUREG versus BTP again, somewhere in here, in your presentation, I can't find it right now, but you said that the positions were going to be taken out of the document.

MR. THAGGARD: Well, what I said was that the positions were going to be rephrased as being positions from the Performance Assessment Working Group, as opposed to --

MR. HORNBERGER: But I mean you are still going to --

MR. THAGGARD: Yeah, the positions are going to still -- yeah.

MR. HORNBERGER: The position was going to still be given that 10,000 years was the correct timeframe.

MR. THAGGARD: That's correct.

MR. HORNBERGER: And all the other things that you mentioned.

MR. THAGGARD: That's correct.

MR. HORNBERGER: Okay. And do you give any guidance in the BTP -- well, the NUREG, the NUREG for how one would use the information on calculations beyond 10,000 years?

MR. THAGGARD: Yeah. I mean one example is, as I

indicated, maybe to possibly identify the need for inventory limits. There may be some other --

MR. HORNBERGER: I mean what would lead you to conclude that inventory limits were necessary?

MR. THAGGARD: Well, obviously, if you are getting doses that is going to exceed the limit -- I mean the standard, that may be something you need to take a look --

MR. HORNBERGER: Exceeding 25?

MR. THAGGARD: Yeah. I mean if you are getting significant doses at that point, then you -- I don't know if we specify a specific number in terms of --

MR. HORNBERGER: Yeah. Well, that was --

MR. THAGGARD: Yeah, I don't believe the document does that.

MR. HORNBERGER: But I mean is the general gut level feeling, again, of your group that if you calculated a peak dose at 50,000 years of 100 millirem, that that would be what would lead you to conclude that something was needed? Or 26 millirems --

MR. THAGGARD: Yeah. We didn't really specify that and maybe, you know.

MR. HORNBERGER: Well, I wasn't asking for -- I mean I don't think you would want to specify a number, or else it would become a de facto regulation.

MR. THAGGARD: Yeah.

MR. HORNBERGER: But I was just curious whether you think guidance --

MR. THAGGARD: Well, I think the -- well, the general intent was not to throw that information away, to look at it. And, obviously, it is a qualitative decision, so, I think the main emphasis is not to throw that information away, to look at it. And if it tells you something that you can use, to help you -- I mean help guide you, you should take a look at it.

I don't know whether we had a particular number. I mean maybe Andy can answer that because he wrote the original position on that.

MR. CAMPBELL: I guess now I am the guy left standing. There were a number of issues, and, in fact, the committee had a working group on timeframe of compliance a number of years ago, I believe in '96. We also, the committee wrote a letter in '97 on low level waste time of compliance. At the time we were putting this document together, there were proposals to put very, very large inventories of depleted uranium into a low level waste site. And, of course, the doses, because it is depleted uranium, don't become apparent till long timeframes.

And, so, Part 61 clearly provides for the specification of an inventory limit, although it doesn't say that you have to do that, but it provides for that

capability. And, so, there are scenarios in terms of what kinds of waste and how much you are disposing that long timeframes, you might very well want to look at them, because the dose is not necessarily in the 25 millirem but much, much higher range.

The other issue in terms of time of compliance for the more mobile radionuclides, which tend to be the drivers in terms of peak doses, the real concern about the engineered barriers and why 500 years was kind of an arbitrary number, I mean there are parts of the regulation that, for example, in a BTP waste form requires a 300 year lifetime for a Class B and C HIT, high integrity container.

There was a concern that -- how long do covers perform? Well, in wet climates that may be driven by how long it takes trees to establish themselves on the covers and the roots to penetrate the multiple layers and so on.

The engineered vaults, the concrete vaults, we were seeing proposals in DOE space for vault systems where it was claimed that they would last, you know, 10,000 years with no leakage. And, so, the 500 years was a judgment on the part of the engineers to say, look, we don't exactly know how long the cover is going to last, maybe a few hundred years, maybe a little bit longer. We do know that concrete vaults, when they start cracking, even a small series of say 50 micron cracks, it doesn't take very many of

them before they are not a barrier to infiltration.

So, the key driver was how long you can keep water out of the system. And if you push your timeframe to a short enough period of time, essentially, you never analyze what the potential dose is from the facility and what the site will do for you. You essentially end up saying, well, my engineered barriers are going to last, my cover is going to last, you know, eight, 900 years, and if I have a 500 year period of performance, then I am done. Essentially, I don't need to do a PA at that point, all I have to do is make a demonstration my cover will last X hundred years. And, so, that was another rationale in terms of looking at these timeframes.

Clearly, you go way out in time, the value of a PA becomes less and less because the uncertainties are just getting larger. Did that help?

MR. McCARTIN: Tim McCartin, if I could add one thing, Dr. Hornberger. If you look at how the -- the qualitative look, I think is the right way to look at the beyond. In terms of what kind of -- how you treat those doses, I think it depends on how far out it is, et cetera. But another way to look at it, if you are looking for any quantitative feel for how the staff would perceive things, I think if you look at the way the dose limit is met, we want the mean to meet 25. The 95th percentile only has to be

below 100. And, so, clearly, we are allowing some doses of realizations to be above 100 millirem. So, as you go out, I think you get a sense that we aren't looking at -- we are not going to give any number, but you can see that there are doses that certainly could exceed 100 potentially.

MR. HORNBERGER: No, and, as you know, I would not be in favor of stating a number that far out either. I think what Andy just said helps in terms of the kind of scenario that one would envision requiring inventory control, where you have large amounts of depleted uranium. I was more curious about whether you had that kind of guidance, which is more qualitative.

CHAIRMAN GARRICK: Just a couple of questions of clarification. When you talked uncertainty, you talked pretty specific in terms of the peak of the mean dose as a function of time should be less than 25 millirem, et cetera, et cetera, and that as a function of time should be less than 100 millirem for the 95th. How are you assessing the relative contribution to uncertainty of modeling uncertainty versus -- I can certainly -- certainly, there is a lot of experience in addressing the issue of information uncertainty. Where there is increased controversy is how you quantify modeling uncertainty.

MR. THAGGARD: Yeah. In the document, we don't really take a strong stance on advocating people quantifying

model uncertainty or, for that matter, even scenario uncertainty, I mean.

CHAIRMAN GARRICK: Right.

MR. THAGGARD: So we are primarily looking at here parameter uncertainty, although we think that, to some extent, we may be looking at alternative conceptual models based on some of the range of parameters that we are -- people are going to be using in the way these models are constructed. But, so, to some degree, you may be having a back-end way of calculating model uncertainty, but we don't have really real guidance on --

CHAIRMAN GARRICK: Okay. So, most -- this is referring mostly to information uncertainty?

MR. THAGGARD: It is mostly, yeah, information uncertainty related to the parameters, so, it is primarily parameter uncertainty.

CHAIRMAN GARRICK: Okay.

MR. THAGGARD: Although, as I indicated, for some of the parameters and how the parameters may be treated in the models and the range of the parameters, you may be looking at the effects of different models to some extent.

CHAIRMAN GARRICK: Yeah. One of the things I noticed in reading the draft, speaking of scenarios, there was a footnote, in reference to analytical approaches, that said, "Assigning probabilities to scenarios, which is

characteristic of some probabilistic approaches, is not" -- and "not" is in bold letters, the only bold letters that I saw in the whole document -- "recommended by the staff for low level waste performance assessment." That almost comes on like it is a condemnation against scenario based risk assessment, which is, in my opinion, the best way to do risk assessments.

Does that mean that if a licensee came in with a scenario based risk assessment, that it would be looked upon negatively?

MR. THAGGARD: No, that is not the intent. And maybe we need to look again at how that is worded. But the idea was, I think there was a lot of concern, when we first went out with the document, people were saying, well, you know, when you start getting into things like scenario uncertainty and things of that nature, that there is a tremendous amount of uncertainty just in terms of trying to assign probabilities to that. And I think there was some concern that we didn't necessarily want to be putting people in the position that they had to necessarily go into an expert elicitation process just to come up with probabilities for these scenarios and so forth.

So, that may have been the genesis for that language. It is more in terms of trying to tell people that they didn't necessarily have to do that. I don't think

there is any thought on the staff's part that we would look disfavorable is somebody chose to go down that path.

CHAIRMAN GARRICK: I think it comes across in the wrong way. I think if you were to turn it around and just say that this need not necessarily include a propagation of uncertainties through the scenarios, or the identification of scenarios, because you do talk a lot in the report about models, almost in the context that you substitute the word "models" for "scenarios." And one could argue that all a structured set of scenarios is is a model.

So, I think that one might get the wrong impression from this, and we may want to comment on that.

MR. THAGGARD: Okay. Do you want to add something on that, Mike? I mean I think that would be --

MR. LEE: Yeah. This is Mike Lee. We can work with that language. That may not have been the best language to select. But our concern was that we wanted to remind the developer that in selecting the proposed disposal site, they were to be reminded that they were to select sites that were geologically quiescent. We didn't want -- we wanted to avoid situations where the developer would start doing scenario analyses of a probabilistic nature to drive his site selection process. We wanted to kind of get out of that space, because that is contentious and certainly inconsistent with what the regulations call for.

We are not adverse to them considering scenarios that are consistent with the evolution of the site as part of the performance assessment, but we didn't want to be pushing them in that direction.

CHAIRMAN GARRICK: Well, of course, the kind of scenarios that I am thinking of are assessment scenarios that respond to the issue of what can go wrong with the site. So, that is how I would answer the question, -- What could go wrong? -- is with the structured set of scenarios.

MR. LEE: Right.

CHAIRMAN GARRICK: And, so, I would hope that this wouldn't discourage people from --

MR. THAGGARD: Yeah, I don't think that was the intent, and we can certainly look at the language there, to tone that down.

CHAIRMAN GARRICK: Because it really almost looks like a kind of condemnation, especially with the emphasis put on it with the bold type on the word "not." So, okay.

Any other questions? Comments? Yes, Howard.

MR. LARSON: When do you plan to finalize it? I gather that -- you know, has the document received a final tech editor review?

MR. THAGGARD: No, it is --

MR. LARSON: You are satisfied with the writing? When would the final document be available for the committee

to look at insofar as, you know, the way it is put together and everything?

MR. THAGGARD: Probably, my guess would be late summer, maybe in the fall some timeframe. Our plan is right now we are still getting comments on the document, internal -- I mean still going through an internal review. And once it has finished that, then I don't think there will be a problem with showing it to the committee.

I would like to touch upon one thing that Dr. Wymer said about the fact that we are going to publish the document as a NUREG. That shouldn't -- it is not really our intent to necessarily diminish the recommendations in the document. And I apologize if that is the impression I gave, because I mean the ideal is that this was an agency, a group of agency experts working on this. And people should be able to take that and say, well, you know, this group of agency experts looked at this, and these are the recommendations that they came up with. This is the information that they provided. And they should be able to use that however they see fit. But it wouldn't necessarily say that this is the overall agency's position, but people should be able to recognize that this is a group of experts from the agency and this is their position. And, so, I think that should still carry a lot of weight. So, I didn't mean to diminish the role of what we are trying to

accomplish here.

CHAIRMAN GARRICK: Okay. Thank you. Thank you very much.

I guess, since we have a little time here, it might be appropriate to raise the question with the committee of what kind of response do we think this out to have at this time. And can we give a response without the committee members actually reviewing the document itself? We can give a response on the basis of the presentation to be sure. But some of the questions the committee is asking, they are probably going to require a little digging into the report.

Anybody have an opinion on how we should respond?

MR. WYMER: There are two or three things we could respond to, they have already been brought up, having to do with George's concerns about the meaning of these doses interpretation. And I would like to comment, I think, too, on the fact that I think having the low level waste document and the high level waste document, I mean differently with respect to what engineered barriers can mean, even allowing that there is a flexibility, and that is allowed in the language, a justification of a longer lifetime is certainly within the scope, but to say for the low level waste there is a 500 year limit with exceptions allowed, and then not to say something comparable in the high level waste area, it

seems to me you are sort of setting yourself up for a problem. And I think we might comment along those lines.

CHAIRMAN GARRICK: And I think we definitely -- maybe that is what you mean when you say the dose calculation, but I think there is definitely a sense of maybe we want to comment on the form of the results, the actual form of the dose assessment results.

MR. LEVENSON: Do we recognize the difference between Classes A, B and C?

CHAIRMAN GARRICK: I don't know. Tim.

MR. McCARTIN: There are slightly different rules, primarily depth of burial for the different classes.

MR. LEVENSON: Integrity of containers.

MR. McCARTIN: Class B and C waste, Milt, is required to have an intruder barrier that has a lifetime of at least 500 years. Class B and C waste has to be put in containers that have been -- essentially gone through a topical report review by the NRC that shows that they will have about a 300 year stability lifetime. There are some other differences between Class A and Class B and C, but the analyses done to support this document looked at a facility that had both Class A and Class B and C. In fact, the inventory was derived from manifest information and reports about what was being disposed. Now, mind you, that was a number of years ago, but the radionuclide content hasn't

changed that much, the volumes have changed.

MR. LEVENSON: Back then I think there was more perception that a low level waste facility would maybe take them all. We don't know what will have with Envirocare, but, clearly, it is a facility that for some time has been only Class A. So, I wondered whether this document recognized the difference between a single category and some of the general facilities.

MR. McCARTIN: Well, I mean in doing the performance assessment, you certainly would tailor it to the inventory you are expecting. Other than that, there is no preclusion of having to have one class or three classes, whatever.

MR. LARSON: As a NUREG, if it was an Agreement State and they were going to put in a low level waste disposal facility, and they felt that they needed no help from anybody, what would be the impact of this document upon them? I just -- for my own clarification. Do they have to follow it or is it -- it is only whatever value they want to use, right?

MR. THAGGARD: That's correct. I mean as a BTP, they wouldn't necessarily have to follow it, and they can use whatever approach they think is necessary.

CHAIRMAN GARRICK: One of the things that I was struck by in the limited reading of the report was the

emphasis that was given to the distinction between uncertainty analysis, sensitivity analysis and probabilistic analysis. I am still wrestling a little bit with how you address uncertainty analysis, say, out of context with the probabilistic analysis. But maybe when I see what you have done, I will understand that better.

I could make the same comment relative to sensitivity analysis, because, to me, probability is the language of uncertainty. And, so, if you are going to do a reasonable job of uncertainty analysis, you have to do a considerable amount of probabilistic type investigation. And I hope that is all sorted out in the report.

MR. McCARTIN: Yeah, I guess -- Mark had limited time to go through everything. But when we first went down this approach of doing -- and it is a probabilistic approach.

CHAIRMAN GARRICK: Right.

MR. McCARTIN: I mean most people would -- however, having said that, probabilistic in the terms that your parameters have distributions and you are sampling among those distributions, and each value has a certain probability assigned to it. To the broader low level waste community throughout the United States, we did not want to -- there was a worry of confusing people with a probabilistic approach with assigning probabilities to

scenarios in disruptive events, what is typically done in high level waste. And, so, we tried to draw some distinctions there. As Mark indicated, we aren't recommending scenarios with probabilities, primarily because the siting conditions preclude many of the disruptive events from occurring at the site, except at a very low probability, albeit, because it is sited properly.

But it was trying to -- to date, when we first went down this way, this approach, people had been doing single deterministic analyses, and to move over to this approach, we wanted to make it clear that it wasn't the full -- some people consider the high level waste approach probabilistic, because you have scenarios with probabilities. And, so, we were trying to bridge a wide variety of capabilities to conduct different analyses and experiences in doing PAs, and a lot of the people we talked to aren't familiar with the high level waste program and what that means, and, so.

CHAIRMAN GARRICK: Yeah. Well, as we have said many times, this whole issue is a classic case of risk communication, and our inability at times to do a reasonable job of communicating what we mean. If we could ever get to the point where we get across the message that by probabilistic approaches, we don't mean something in place of or instead of, we mean something in addition to, that,

essentially, by definition, we mean additional information, when we go from deterministic to probabilistic methods. And, obviously, in that structure, in that framework, it would seem that it is a more saleable concept to say that all we are really talking about here is getting additional information, additional insights and additional understanding of how much confidence we should really have in these deterministic results.

I have found that when you deal with students and the public in that context, with respect to the introduction of probabilistic notions, it takes some of the fear out of what you are trying to do. And, so, I think it is kind of a classic case of risk communication that we have not really been able to achieve and still represents one of our challenges. So, I am always disturbed when I hear that there is a fear of probability. That always signals to me that we are not, you know, we are not doing a very good job of telling them what we mean when we talk about that next level of analysis, and that is what it really seems to me should be, is just the next level of analysis. Because that is the reaction you get.

You know, I once heard a utility executive say we would never use probability as a basis for any decisions that we make. Well, how nonsensical a statement that has to be, because that is saying we only make decisions about

which we are 100 percent certain, and you never do that. Never have that. So, you are using probability all the time, implicitly as it may be.

Okay. Any other comments from staff or anybody in the audience? Yes.

MR. LEE: In the spirit of communication, I think at the beginning of the presentation, Mark noted that the BTP is currently in concurrence and we expect to get it to the Commission in July. And just to reinforce a point that Mark made earlier, the hope and desire is that we, in parallel with that concurrence, which we have recently met with OGC and they have given us some comments and recommendations which we are addressing, but we don't expect the BTP to change substantively between now and when it goes to the Commission.

MR. McCARTIN: You mean the NUREG.

MR. LEE: The NUREG, excuse me. Freudian slip. But our hope and desire is that we get a letter -- in the past, what the committee has done is it has sent a letter to the Commission with its recommendation as to finalize the document that the staff happens to be working on. In some cases we have gotten that recommendation with no comment. In other cases, we have gotten comments, and we welcome any comments from the committee and we can work those out in parallel with what we have to do to finalize the document.

CHAIRMAN GARRICK: Okay. Sounds like a real challenge if we are going to get any letter out that will have any impact on the submittal to the Commission.

MR. CAMPBELL: One comment here.

CHAIRMAN GARRICK: Yes.

MR. CAMPBELL: One of the things that I noted as I read through the document is that there are a number of references that have developed since the technical parts of the document were written back in the mid '90s, and that those references need to be updated, and there certainly should be some effort -- there are a number of NUREG reports and ACR reports that have come out since that was done, that really need -- otherwise, the document appears to be very dated, and that would be important to get into the document.

MR. LEE: We welcome those updates, Andy. When can you get them to us?

MR. CAMPBELL: Well, I think there were a number of people in Research that were involved in the document, and that needs to come over to you guys as a list of things that need to be changed, but it needs to be done soon. Otherwise, the document will appear to be fairly dated.

MR. LEE: Well, as part of the finalization of the document, we have redistributed the document to remaining members of PAWG and I know -- including those members that currently reside in Research, and I know they are working on

-- one individual in particular is getting us some new and updated references, but any contribution any PAWG member current, living, whatever, happens to make, we are more than welcome to get that.

MR. McCARTIN: Living or not.

MR. LEE: That's right.

MR. McCARTIN: Comments from the beyond.

[Laughter.]

CHAIRMAN GARRICK: Actually, I think the report will be very helpful to all parties, including states. And as far as the analytical process that is involved, and I suspect it will be an evolving NUREG as we update it and learn more about how to do things.

Okay. Well, I think, unless there is additional comment, we will adjourn for lunch.

[Whereupon, at 12:15 p.m., the meeting was recessed, to reconvene at 1:30 p.m., this same day.]

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

[1:30 p.m.]

CHAIRMAN GARRICK: Good afternoon. The meeting will come to order. This afternoon, we're going to start off talking about West Valley, and we are, in particular, going to hear about some public comments on a draft policy statement on decommissioning criteria for the West Valley Demonstration Project.

Ray Wymer of the Committee is the lead on this subject, so I'll let Ray introduce our speaker.

MR. WYMER: Okay, before I do, I'll make a few comments, Jack. I hope I don't steal your thunder. I don't think I will because I don't know enough to steal your thunder.

[Discussion off the record.]

MR. WYMER: The West Valley site is a particularly complex site with a lot of people in the act and a lot of timing considerations with respect to when various things kick in and various people gain and lose responsibility for a license termination.

I don't know how many of you know that the West Valley site is located within the Western New York Nuclear Service Center, so-called, which is something over a 3300-acre site, and ore of less in the middle of that is a 200-acre site which DOE has responsibility for.

They're operating under the West Valley Demonstration Project Act, a Congressional act, actually that gives DOE responsibility for a segment, a piece of that site.

The other parts of the site are also complex. There is a five-acre site that's licensed by the NRC.

There is a 15-acre site where the waste disposal activities are governed by the State of New York. There is a memorandum of understanding between DOE and NRC that governs this, completed in 1981 and governs the interrelationships and the New York State Energy Research and Development Authority has the responsibilities on the site.

So, it turns out to be -- and there will probably be incidental wastes associated with the site, which is another whole issue. So, it turns out to be an extraordinarily complicated issue.

I hope that Jack Parrot will explain all that, elucidate it, and in particular, tell us about the decommissioning criteria associated with the site. Jack, please?

MR. PARROT: Okay, thank you. Good afternoon. My name is Jack Parrot. I'm the NRC's Project Manager for interaction with West Valley and the West Valley Demonstration Project.

The focus of my presentation today was going to be -- or is going to be on the draft policy statement that was issued last December for the decommissioning criteria. But before I go into that, I was just wondering what the Committee would like to hear as far as background.

I don't want to just launch into where we are now without a little bit of background if it's all right.

CHAIRMAN GARRICK: I think that would be appropriate.

MR. PARROT: Okay. Briefly, the site, the West Valley site, was the only commercial spent fuel reprocessing site ever operated in the country.

It was licensed by the AEC in 1966. It processed some 640 tons of spent fuel. Along with that were a number of wastes produced, as you can imagine.

Also, next to the site in one corner of the site is a state-licensed disposal area, licensed by the State of New York, a pre-Part 61 disposal area that took some wastes from the operational facilities at West Valley, in addition to commercial wastes and waste from other government facilities.

The reprocessing continued until about 1972, when the operator of the site NFS, decided to shut down operations, and no more reprocessing occurred.

And then in 1980, the West Valley Demonstration

Project Act was signed by President Carter. This Act requires DOE to come onsite, solidify the high-level waste that was produced from the spent fuel reprocessing, transport it and dispose of it.

In addition, the Act required DOE to decontaminate and decommission the tanks and project facilities and materials used with the Project, two requirements prescribed by NRC.

With the realization that the solidification portion of the Project is almost complete, attention turned to establishing decommissioning criteria in the late 1990s. At about the same time, as you know, the license termination rule was promulgated in 1997, so this led to the beginning of prescribing the decommissioning criteria for West Valley.

The NRC's decommissioning criteria for West Valley was issued on December 3rd of 1999, as a draft policy statement by the Commission. Basically what it says is, to apply NRC's license determination rule to the site as the decommissioning criteria -- I'll go into a little bit more detail in the next slide, but after the policy statement was issued, we held a public meeting up at near the site on January 5th, 2000.

At that meeting, we heard comments from the public, DOE, NYSERDA, and other agencies and groups. We received about 60 comments and questions at the public

meeting, and the written comment period closed on April 1st. We received about 28 comment letters with about 200 individual comments.

Basically, the draft policy statement consisted of three components of a process for prescribing the decommissioning criteria:

First of all, it was to apply the NRC's license termination rules to the decommissioning criteria for both the West Valley Demonstration Project and for the portion of the site that would remain under a license to NYSERDA.

As you know, the range of decommissioning criteria range from an unrestricted release limit of 25 millirem per year, and then if you want to apply institutional controls to the site, you can do restricted releases up to a range of between 100 and 500 millirem per year, if those restrictions were to fail.

The next step in the process was for DOE and NYSERDA to propose a preferred alternative and develop and EIS to support that preferred alternative.

That's what they're working on actually right now, and that our decommissioning criteria would fit into.

And then the final step described in the policy statement was that the NRC would verify that the specific criteria chosen for the site meets the range of the LTR, and prescribes its use after considering the impacts in the EIS.

I should mention that NRC is a cooperating agency in this EIS process.

And let me briefly contrast how this to a typical licensing case: In a typical licensing case, we wouldn't have to do the first step, because we would already have the license termination rule to apply to all our licensees. So, this is one way that the site is unique, is, we've got actually -- do a two-step prescription.

Okay, first, we've got to say that the LTR applies to the site, and then after they go through the process of developing a decommissioning plan, specifically how the criteria would be applied.

Okay, as I mentioned, we had a number of comments. The Staff is currently evaluating and developing responses to the comments.

The comments could fall into basically three broad categories: A lot of the comments had to do with NRC's process for finalizing these or prescribing these decommissioning criteria.

A lot of the comments were more on the license termination rule itself, the guidance and the implementation license termination rules.

A number of comments were also on jurisdictional cooperation with other agencies that are involved with the site.

Let me briefly try to summarize some of the comments here, some of the major comments.

There were a lot of comments, but I'll try to summarize the major comments. DOE, their main comment really focused on the process that we were going to use for prescribing their criteria.

They felt that the prescription of the criteria should happen after the EIS process is completed. The State of New York had certain concerns -- and when I say the State of New York, I'm including NYSERDA, the New York Department of Environmental Control, and we also got some comments from the New York State Attorney General's Office.

Their main concern seem to focus on not allowing shifting of federal responsibility onto the state. They also wanted us to consider the SDA, the state-licensed burial ground that is in one corner of the site, in the overall criteria, even though it's under a separate license.

And also they were concerned -- and this relates back to the first comment -- that there be consistent criteria, decommissioning criteria, for both the Project, DOE's Project, and the eventual license.

EPA had similar comments they have made for other decommissioning sites of NRC; that the license termination rule may not be protective; that the groundwater needs a separate protection; and that there should be coordination

with EPA for both the remediation of the hazards and the radioactive contamination at the site.

We received a number of other comments, and some of these other comments also were made by the agencies described here, but because of the type of waste at this site and the nature of the site, a lot of the other commenters had concerned about relying on institutional controls to control the dose from this site.

A lot of commenters believed that institutional controls cannot be relied on at this site, and therefore want all of the waste and material removed from the site, eventually.

At the very least, a number of them wanted to get a better idea of what was the definition of an institutional control for NRC; does it include the use of engineered barriers and to what extent?

A number of the other comments also had to do with the SDA and the fact that that should be considered with the overall criteria for the site.

And there were a number of comments on incidental waste and the fact that a lot of them did not want DOE to be able to reclassify any of the high-level waste that is at the site into incidental waste.

This is our schedule for completing the policy statement. Our plan is to respond to the comments and make

any revisions to the policy statement that is needed and to get that to the Commission by August, the end of August;

To receive input from the Commission on that by the end of October, and then to revise the policy statement, as needed, and then publish it in the Federal Register by the end of the year.

Briefly, I wanted to touch on some other activities we've got going with West Valley. We're working on a cooperation agreement with NYSDEC, the state environmental control authority up there. They license the SDA and they're also responsible for the hazardous waste component on the rest of the site.

We're working on a Commission paper that sets out some guidelines for interacting with stakeholders at the site. Because of the sort of informal relationship we've got with DOE at the site and the fact that the license is actually in abeyance, and the other unique qualities, we felt that we needed to set out specific guidelines of how we were going to interact from here on out with the different parties. As you mentioned, it's a very complicated situation.

We're also reviewing a preliminary safety evaluation report for a planned facility called the Remote Handled Waste Facility. This is related to another one of NRC's authorities at the site, and that is to review and

comment on safety evaluation reports for facilities that are going to be built at the site.

And as I mentioned, we're a cooperating agency on the EIS, and there will be upcoming, hopefully before the end of the year, review of some technical sections of the EIS, and the preferred alternative.

Our plan for interacting with the ACNW on West Valley is to provide the Committee with the draft responses to the comments we received, and the final policy statement at the same time we submit it to the Commission for a parallel review.

So, with that, that concludes my prepared presentation.

MR. WYMER: I was reading through some of the testimony that was given back in January. One of the things that came out loud and strong was that the stakeholders and the State of New York, the various agencies of the State of New York, speaking generally, don't -- they don't really care much about the formalities of who does what, or what the license termination rule is or what they are responsible for.

What they want is the site looked at holistically, and they want the whole darn thing cleaned up, and forget about the legal obligations for the moment. And that's sort of their point of view; let's clean up the site as best we

can to protect the citizens of the State of New York.

So, the question I have then is, how broad a brush, how broad a sweep is the NRC taking with respect to license termination? Are they narrowly focused on the DOE license which will kick in 2010, or are they concerned with that, plus the NRC licensed little piece of the site, in addition, or are they considering the whole thing and will the EIS address the whole thing?

In other words, how broad a cut is NRC going to take on this?

MR. PARROT: Okay, well, first of all, the EIS that they're working on for the closure of the site does consider the entire site, including the state-licensed disposal area. The EIs is a joint project between DOE and NYSERDA.

They are both lead agencies on the EIS, and they are considering the whole site. Now, when we put the draft policy statement out, we tried to take as broad a brush and sweep as possible, given our limitations and the fact that we don't license the entire site. Part of the site is licensed by the state.

And that was what was pointed out in the policy statement. We want the license termination rule to apply to DOE's portion and the part of the site that's licensed by NRC. And anything beyond that, for instance, the SDA, that

will have to be worked out with the proper authorities.

MR. WYMER: Okay, is it your view that the Environmental Impact Statement effectively replaces the project decommissioning plan?

MR. PARROT: No, no. The Environmental Impact Statement needs to be done, and a preferred alternative chosen, and what we'd like to see, I think, at NRC, is that whatever the preferred alternative is, that it falls within the range of the license termination rule.

But there still is a requirement that DOE and NYSERDA will have to submit decommissioning plans which will, hopefully, specifically point out how they intend to meet the license termination rule.

MR. WYMER: And I have one final question. To what extent will the NRC be involved in institutional controls after the site is closed?

MR. PARROT: Well, only in a very general sense, from the license termination rule, there would be, you know, some requirement, if they do a restricted release, to have a periodic recheck of the site.

Now, the specifics of that, it's too early to say how that would work out.

MR. WYMER: NRC would probably accept the responsibility for carrying out the periodic re-checks into the indefinite future?

MR. PARROT: Well, to the extent that, yes, it would be an NRC-licensed site, I imagine that it would be either NRC or --

MR. WYMER: Those parts that are NRC-licensed.

MR. PARROT: Yes.

MR. NELSON: Excuse me, this is Bob Nelson, Decommissioning Branch, NMSS. We would not -- we do not envision a role in which NRC would be doing periodic rechecks. If there are rechecks that need to be done, they would have to -- the license termination rule does not envision NRC physically doing those rechecks.

The license termination rule requires that financial assurance be put in place, such that an independent third party can do the rechecks. That's not NRC, so --

MR. WYMER: That's all I have at the moment. John, do you have any followup questions?

CHAIRMAN GARRICK: Well, I don't think I have very much. But when you were summarizing the comments, with respect to the State of New York, one of the comments was that they wanted to be sure that there was no shifting of federal responsibility to the state.

But isn't there a point beyond which that's what's supposed to happen?

MR. PARROT: Yes. There will be a point where DOE

feels that they have satisfied their requirements under the Act, the West Valley Demonstration Project Act, at which point NYSERDA would take back the site and the license would be renewed or pulled out of abeyance.

The question is, what is that point? And the State of New York and DOE are actually in negotiations right now over where that point is.

It's not real clear, and, you know, the Act doesn't give a lot of definition of where that point is, but they're in negotiations right now, I think, to work that out.

CHAIRMAN GARRICK: What alternatives are being considered for the final disposition of the site? Supposing they can't do what Ray is indicating they want, namely, complete cleanup of the site? What alternatives are under consideration?

MR. PARROT: In the Draft EIS that they published in 1996, they looked at range of various alternatives, everything from cleaning up the site entirely to doing just a minimal stabilization and leaving everything there.

Based on a lot of the presentations that I have seen from DOE, they seem to be actively considering leaving at least the structures of the process building and the high level waste tanks there, and stabilizing them and using a lot of engineered barriers, and also --

CHAIRMAN GARRICK: Does this include subsurface barriers?

MR. PARROT: Yes. And it's the same thing for the NRC-licensed disposal area, perhaps engineering a new cover for the facility, but leaving it in place.

CHAIRMAN GARRICK: So, they're looking at alternatives that vary from green fields to some degree of stewardship?

MR. PARROT: Yes, and depending -- there is kind of a mix they're looking at right now that some areas may be able to be cleaned up completely, relatively easily, and then some areas not. But again, they haven't established a preferred alternative yet though.

CHAIRMAN GARRICK: How do you think the NRC is going to respond to the EPA continued anxiety about the license termination rule perhaps not adequately protecting them?

MR. PARROT: My guess is that we will, as we've done at other sites, decommissioning sites, say, well, this is our criteria and we believe this to be protective.

CHAIRMAN GARRICK: Where does the state come down on this?

MR. PARROT: Well, I think that they would like to see a consistent message, because they are worried, of course, that the site's decommissioned to NRC criteria, and

then EPA might come in and say, okay, we may apply CERCLA to this site, and require different criteria.

So, I'm sure that they would like to see something worked out beforehand.

CHAIRMAN GARRICK: Do you know, is there a schedule in place yet for what happens beyond the issue of this decommissioning criteria? What are the future events and when are they likely to occur?

MR. PARROT: The future events would be that the DOE and NYSERDA complete their EIS, establish a preferred alternative and issue a record of decision.

The trouble is that the completion of that depends on now these negotiations turn out between New York State and DOE, and those aren't completed yet. So there is something of an uncertainty there about when that will be done.

And they're on the line. I don't know if you care to ask them about that. But then the next step would be then for DOE to submit to NRC, a decommissioning plan.

And then we would look at that, and because of the unique relationship, we don't actually approve it; we review it and comment on it. And then they would implement it.

CHAIRMAN GARRICK: Now, as far as the action from this Committee, your final statement said that Staff will provide ACNW with the draft response to comments and final

policy statement at the time of transmittal to the Commission for parallel review. Is that the action you want us to take, based on that review?

Or are you asking for something earlier than that?

MR. PARROT: I think that was the action we anticipated, yes. We're still working through the comments, and writing responses to those comments. It really won't be ready until the time we give it to the Commission.

MR. WYMER: We haven't really come to the criteria yet.

CHAIRMAN GARRICK: Go ahead.

MR. HORNBERGER: This is a fairly complex site, so when DOE gets to developing a decommissioning plan, is there anything in the policy statement that would offer them guidance on how they would demonstrate that the plan was successful; that is, is what is envisioned a probabilistic performance assessment?

MR. PARROT: Yes, I believe we would use the same kind of guidance that we would apply to any licensed site that's decommissioning. And to the extent that that is a probabilistic analysis, yes, we would like to see that.

And especially this site, with the amount of uncertainty, it definitely would be important to consider that, yes.

MR. LEVENSON: I have two questions: One is --

CHAIRMAN GARRICK: Put your mike down.

MR. LEVENSON: I have two questions: One is a matter of catching up on history. The law setting up West Valley as a demo project, did it mention at all, any role for NRC at that time?

MR. PARROT: Yes. The roles that NRC is involved with are prescribing the decommissioning criteria; also, reviewing safety analysis reports for facilities that are built at the site; a monitoring role, where, I guess you could liken it to an inspection role where we send an onsite person up there a few times a year, and review things and write a report, but it's not an inspection report; it's a monitoring report.

And, let's see, there's a role of -- I think that's it.

MR. LEVENSON: But the act does specifically exclude any activity of NRC with respect to the licensing of the site until such time as DOE quits the site?

MR. PARROT: Right.

MR. LEVENSON: It was, of course, licensed by the AEC up until that is done.

MR. PARROT: Right.

MR. LEVENSON: My other question, I guess, has been answered, and that is, you have used the term -- like for the new remote handled waste facility, you're going to

review and comment. So none of those new facilities will be NRC-licensed; is that right?

MR. PARROT: Yes, until such time as the site reverts to New York control and those facilities are still there, then they would be licensed.

MR. WYMER: Well, as I look at the t.v. monitor, I see a whole group of people off there in the State of New York. I'd like to solicit questions of comments from that group now.

SPEAKER: This is Melissa -- I'm the Director for DOE here, and Paul -- . Paul is with the New York State Energy Research and Development Authority.

I also want to mention we have a number of folks from our staff, as well as a couple members of the Citizens Task Force who wanted to sit in and listen to this as well.

Ray -- and McNeil. And what we were prepared to do is just make some comments, some prepared comments, and if you want to ask any questions of us, we'd be happy to answer anything.

And really, all my comments really do, in terms of the Department of Energy -- basically, we really appreciate your involvement in this process, and we just want to sort of reiterate the comments that we made on the draft policy statement, if that would be okay.

MR. WYMER: Sure, go ahead.

SPEAKER: I'm just going to read this prepared statement: The Department of Energy welcomes and appreciates the involvement of the Advisory Committee on Nuclear Waste in the process for developing decommissioning criteria for West Valley.

The West Valley site is unique, and I think you've pointed that out already, in terms of NRC-licensed sites and the process for developing policy for West Valley should consider the unique aspects of the site and be in compliance with NEPA.

Based on the Advisory Committee's expertise and experience in dealing with complex waste management issues, the Committee is uniquely qualified to advise the Commission on the development of the decommissioning policy that is well founded in terms of risk considerations.

As indicated in DOE's formal comments on the draft policy statement, the Department does not agree with the NRC's current position of prescribing the license termination rule for West Valley before the ongoing site-specific closure Environmental Impact Statement is completed.

Because of the unique and previously un-evaluated waste management and environmental issues associated with the former spent nuclear fuel reprocessing facility, DOE does not believe that NRC has adequately enveloped the

potential disposition alternatives and impacts in any generic Environmental Impact Statements that they have completed or conducted to date.

Therefore, in order to comply with NEPA, the environmental impacts of dispositioning facilities like those at West Valley should be evaluated prior to developing a policy on decommissioning.

DOE continues to endorse the process for prescribing decommissioning criteria that is outlined in SECY 98-251, and the memorandum of understanding that was spoken of previously, between the Department of Energy and NRC that was signed in 1981.

Both of these documents envisioned a sequence of activities where DOE would first perform an analysis of impacts and risks of potential disposition modes, and then upon receipt of the analysis, the NRC would prescribe decommissioning criteria.

This type of process is consistent with NEPA, and essential for informed risk-based policymaking.

I just want to thank you again for your involvement. We really think it's going to be value-added to the process, and for your consideration of our comments.

MR. WYMER: Will that statement -- can it be made available to this Committee -- that you've just read?

SPEAKER: Certainly. Yes, we can fax it to Jack.

MR. WYMER: Fine, if you can see that we get copies, we'd appreciate that.

SPEAKER: Okay.

MR. WYMER: Thank you very much.

SPEAKER: I'm -- with the New York State Energy Authority. And I'm sure Jack can share with you, the letter that we provided to NRC and our comments on LTR. And there is some background letters also.

I just want to say thank you that you're taking a look at the West Valley decommissioning criteria. I think it's very important.

I would suggest that you take a look at the history of how the site got here, perhaps in an earlier time, to help you understand the complexity -- help you better understand the complexity of the issues that are here.

Clearly, it may be likely that some materials have to stay here at this site, at least over the long term, and will require some monitoring and institutional control.

I think there's help that you can give in helping to establish that kind of perpetual or long-term management of the site, and would be very well warranted.

There are a number of comments that we do have. Our last letter to NRC kind of spelled out a number of the concerns that the state has regarding the future of the

site.

MR. WYMER: Thank you very much. Are there other comments from other members of the group there in New York?

There was a hand raised.

SPEAKER: Yes, this is Ray -- of the West Valley Citizen Task Force. I'm also a member of the citizens group known as the Coalition on West Valley Nuclear Waste.

I would just like to disagree slightly or partially with one point that was being discussed just before you came to talk to us -- while you were talking among yourselves and with Jack Parrot.

The question you were discussing was whether there was any provision for NRC licensing involved in the West Valley Demonstration Project Act that might involve DOE's role.

And Jack Parrot and others, I think, said, no. That's what I want to partially disagree with.

If you look at the West Valley Demonstration Project Act -- I don't have it in front of me, but I believe it's Section 2(a)(4), I think you will find the requirement that any disposal of low-level or transuranic wastes be done in accordance with applicable licensing requirements.

The Act does not specify what the licensing body would be, but since DOE does not license its own facilities, our presumption has always been that it would be either the

NRC or the New York State Department of Environmental Conservation that would need to provide the applicable licensing requirements for disposal of low-level or transuranic wastes.

The way I understand it that means that if there actually is onsite disposal of low-level or transuranic, that would require licensing in accordance with the West Valley Demonstration Project Act.

It's not been well defined or discussed very much, but I think that that needs to be considered before everything is done with this EIS process.

MR. WYMER: Okay, well, thank you very much. In my reading of the minutes of the meeting that was held with the Commissioners here last January, it came up that there are legal gaps in area responsibility; that there are certain parts of the responsibility that clearly belong to DOE and certain parts to NRC, certain parts to the state, but there are gray areas which are not clearly spelled out legally, and these will either require agreements, understandings, or litigation to eventually resolve them.

This may be one of those gray areas where it's clear that something needs to be done, but it's not clear who has responsibility for doing it.

SPEAKER: Yes, I think that's true. Thank you.

MR. WYMER: Are there any other questions or

comments from that end of the business? Go ahead.

SPEAKER: I was just going to say that I don't think so.

MR. WYMER: Okay.

SPEAKER: I think we're finished here.

MR. WYMER: Thank you very much. Let us know if you have any additional comments from either the Committee or the Staff.

MR. LARSON: You said that you were going to write responses to each of the comments you got. You're going to do each individually, or you're going to combine them all? I know there has been some discussion on the way the Staff handles these.

MR. PARROT: My plan was to combine as many of the comments as I can, summarize them as much as possible.

MR. LARSON: Then you wouldn't specifically address the comments DOE or NYSEC or the West Valley Coalition or anything, as an individual?

MR. PARROT: No.

MR. LARSON: Okay. I guess from what you said that you did not want any comments, or it's almost impossible for the Committee to give you any comments now, since you wouldn't give them the final document until August, I guess, but is there an intention to come in and explain it to them later on?

It isn't in our schedule, I don't think, Rich.

MR. WYMER: It would be nice to have something about the criteria, which we have not already had.

MR. LARSON: That's a logistics question for the Committee.

CHAIRMAN GARRICK: And the question is, how do we get involved in such a way that we can help you? We need to see the criteria, and I guess that's the thing that you're talking about making available simultaneously to the Commission and to us?

MR. PARROT: Yes. The criteria -- I mean, the criteria will be the criteria of the license termination rule. Now, what's going to be described or explained in this next document to the Commission is how that's going to be applied at the site, given the unique features of this site.

MR. WYMER: So it would be premature of us to comment on the comments before we see the criteria on which the comments will be made.

CHAIRMAN GARRICK: We haven't heard anything about what the West Valley -- how the West Valley people view the criteria; in other words, what are some of the trouble spots, if any.

MR. PARROT: Well, I can give you what I understand what, if they have a problem with it, what they

are. DOE mentioned in their comments that specifically this NRC-licensed disposal area will not be able to meet the license termination rule.

And the question is, where does that leave them if there's a part of the site that can't meet the license termination rule? You know, a number of questions come up:

Does that mean that DOE can't leave the site?

MR. WYMER: You're talking about that five-acre lot?

MR. PARROT: Yes. Does that mean -- DOE has got some questions about institutional control or permanent license, perhaps, if that's what's needed.

MR. HORNBERGER: That's something then totally different from the license termination.

MR. PARROT: Yes.

MR. HORNBERGER: That's not covered in the license termination rule.

MR. PARROT: Right. You know, we're not --

CHAIRMAN GARRICK: This is on a much gander scale.

MR. PARROT: It may impact DOE's ability to meet the requirements of the Act.

MR. HORNBERGER: But presumably then is this the main conflict here as to whether it makes sense to have a policy before you have the EIS, or wait for the EIS and then develop the policy? Is this the sticking point?

MR. PARROT: Yes, that is -- maybe I could go back to one of my slides here. Page 3.

SPEAKER: Jack?

MR. PARROT: Yes?

SPEAKER: I was just going to suggest that you might want to provide the Advisory Committee with a copy of our comments. It kind of describes that whole issue in pretty good detail.

MR. WYMER: That's an excellent idea.

SPEAKER: I think the question surrounds if the criteria actually apply to the whole site, the whole site. You know, we're supposed to look at this as one picture that includes the NDA and the SDA, and the license termination rule includes those.

And those units must be considered in the performance assessment that looks at the whole site. So it's just not clear how it all might work out.

So our thinking was that, you know, if the criteria were prescribed as draft criteria and incorporated into the final Environmental Impact Statement, then you could get a picture of truly how the criteria might apply to this site, specifically, and to the preferred alternative.

And then NRC could finalize their criteria, after which time, DOE and NYSERDA could issue their records of decision.

SPEAKER: I think the other part of the issue is that you've got to look into -- and you can do this by, as you suggested, looking at the policy statement or the prior staff requirements, and also the comments from the various commenters.

There is the issue of having -- being sure that there is the same set of criteria. NRC is tasked with establishing decommissioning criteria under the Act, whereas the state, as the licensee, would be held to the criteria of the license termination rule, since this site was licensed by a Part 50 license.

So it's very important that whatever happens, whatever the criteria are that are established by the Commission, that those criteria are the same for the Department was well as for the state.

Nobody wants to have a situation where a facility is decommissioned under the Act, and yet has to be cleaned up again.

The NDA creates some challenges for that. The SDA, as Jack as said, is regulated by the state, and will have to be managed in the future, probably under a state license.

And the NDA may also have that issue. There are some materials in the NDA, for example, spent nuclear fuel in a DOE facility, that raise some very unique challenges

for this site.

MR. WYMER: West Valley, when you fax us your prepared comments, can you also fax us a list of people sitting there in the audience with you, attendees?

SPEAKER: Certainly.

MR. WYMER: Thank you.

MR. PARROT: I was just going to say that based on the comments, what this issue seems to boil down to is -- and, admittedly, it's somewhat ambiguous in the draft policy statement -- is when exactly are the criteria prescribed?

Let me put this in terms of a licensee: Do we prescribe their decommissioning criteria with the promulgation of the license termination rule, or is it prescribed when they send in their decommissioning plan and we review and approve that? Then is there decommissioning criteria prescribed?

When is it prescribed? I'm not saying I know the answer yet, but --

MR. WYMER: We don't have a rhetorical answer.

Are there any other --

MR. LEVENSON: I have one comment. You said you would like the ACNW --

MR. WYMER: Microphone. We can't get you.

MR. LEVENSON: Your last slide says you would like the ACNW to review this policy statement in parallel with

the Commission. The schedule you have shows it going to the Commission on August 1st. The ACNW does not have a meeting in August. The September agenda is pretty full.

What did you have in mind about this?

MR. PARROT: Actually, the plan is to get to the Commission by the end of August, and I think our thinking was that any comments that you had on it would be given to the Commission because they will be reviewing it at the same time.

MR. WYMER: Sure, so we can do it a little later. Well, are there any other questions, comments, gratuitous remarks?

If not, why, thank you very much. This is certainly and interesting --

SPEAKER: I'm sorry, I'd like to make one more --

SPEAKER: I'm sorry, Ray from the Citizens Task Force wanted to make one additional comment.

SPEAKER: Let me just add one last point: There has been some discussion of whether the issuance or prescription of the criteria should precede or follow the EIS that is being prepared by DOE and NYSERDA with NRC as a cooperative agency on that.

I think part of the thinking on that is erroneous. My concern is this; that DOE certainly, and, I think, to some extent, NRC staff, view this EIS that's now in progress

as something that NRC can rely on to support its decisionmaking with regard to criteria.

There are some substantial questions about that. They mostly revolve around the question of whether, on the one hand, the legal requirements have been met to comply with the NEPA requirements on scoping, the proper degree of involvement for an agency that really has decisions to make, as opposed to exert advice to offer.

And on the other hand, there are the problems with relying on West Valley EIS is that the West Valley EIS does not really go into the major issues that NRC would have to consider, namely, the durability of institutional controls.

That is a very tough question. As you probably know, 10 CFR 61, the LTR, and various other NRC policies have had to try to look at that question of the long-term durability of institutional controls. For a site like this, we're talking about thousands of years into the future.

The ongoing West Valley EIS looks at what happens if institutional controls remain in place, and takes at least a quick look at what happens if they fail.

But the important ethical and social questions of how much dependence should be put on institutional controls, that sort of serious discussion is absent from this EIS. That's the sort of thing that NRC has traditionally grappled with with regard to institutional controls.

So I question the idea that NRC will be that much further ahead from a NEPA standpoint in waiting for answers from the West Valley EIS. I don't think it provides the sort of thing that NRC needs to make its decision, and I don't think NRC has ever been involved as a full-fledged party to this EIS.

Thank you.

MR. WYMER: Thank you very much.

CHAIRMAN GARRICK: It might be appropriate to ask what has been the NRC's involvement, if any, in the EIS. Has there been any kind of an exchange process?

MR. PARROT: The NRC became a cooperating agency in the EIS in 1991. The draft EIS was issued in '96, and it discussed four or five alternatives, but it did not have a preferred alternative.

And NRC didn't have decommissioning criteria, but we reviewed it anyway. I think we looked at it against the criteria in Part 61. That was the best we could do at the time.

And then since then, they've been working on different sections of the updated EIS, and we've looked at parts of those that have to do with more of the performance of the site.

MR. WYMER: It's my understanding that as far as responsibility for the EIS is concerned, it's DOE and New

York State.

MR. PARROT: Yes, they're the lead agencies, yes.

MR. WYMER: They have the responsibility?

MR. PARROT: Yes.

MR. WYMER: Okay, well, thank you, Jack. We'll let you off the hot spot now. We want to thank the participants from West Valley, and we look forward to receiving the various pieces of information that you've said you would send to us.

We'll continue to look at this issue.

SPEAKER: Thank you very much for allowing us to participate by video conference as well. It was very informational.

SPEAKER: Thank you.

MR. WYMER: I don't know, but the agenda says we have a roundtable discussion of possible elements of an ACNW report.

CHAIRMAN GARRICK: One of the things here that is very important is to, of course, apply the NRC's license termination rule as the decommissioning criteria. That suggests that there was considerable study, was there not, of the applicability of the rule to West Valley?

Obviously, you want your regulations to be generic, to be general, but I'm sort of reminded a little bit of Yucca Mountain where we have a high-level waste

regulation, and we decided it was not applicable because of the uniqueness of Yucca Mountain.

Do we have a similar situation here?

MR. WYMER: The problem, John, is that there is not "a" West Valley; there are West Valleys.

CHAIRMAN GARRICK: I know, I know. Well, I'm talking about the complexity of the site, that's right. Are we trying to force-fit something here that just was not a part of the criteria that went into the development of the license termination rule in the first place?

What kind of a problem do we have?

MR. NELSON: Well, I'll try. This is Bob Nelson, Decommissioning Branch, NMSS.

I'll try to answer that. I think it's safe to say that when the license termination rule was formulated, we did not envision within the EIS that supported that rule, this type of site, if you include all the elements at the West Valley Project, including the NDA, in that.

And so -- but when the decision was made, at least to propose using the license termination criteria rule at the site, a lot of the logic elements that went into the formulation of the license termination rule were still there.

For example, what is the appropriate does limit for an unrestricted release? At what point should you

require institutional controls?

Those types of questions seem to be rather generic, and would be somewhat independent of, in my mind, anyway, of the specifics at the site.

At what point do you require durable institutional controls, so what should those institutional controls consist of? Those types of questions, to me, anyway, are generic and seem to apply to this site.

Why should you develop, for example, a different unrestricted release criteria for West Valley?

Why should you change the upper limit for institutional controls? There doesn't seem to be any compelling reason to do that.

So, I think that the decision was that we had a framework for decommissioning; there really didn't seem to be a compelling reason to significantly alter that framework, at least at the time the draft policy was formulated.

So, in short, that's basically the logic and the thinking. Was there an extensive detailed analysis done? I don't think that would be correct to say that that's what it was.

I think it was looking at the framework, and did the framework appear to bound the elements at West Valley, and the preliminary answer was yes.

MR. WYMER: Are there any other comments? Questions?

I don't know what the possible elements would be of a report, but we will have to think about that.

The issue is so complex, and there are so many gray areas. For example, you have some of the problems here that DOE has on its site with respect to closing out tanks. That's sort of a novel area for the NRC to be getting into and discussing what are you -- they've not closed out those tanks, and those are clearly within the West Valley Demonstration Project Act, because they're part of the high-level waste associated with the reprocessing, with the vitrification, and getting the high-level waste off the site.

And so there is the whole idea of can you fill the tanks with a friable grout, as is being proposed, say, at Savannah River? Can you have incidental waste left on the site? What are incidental wastes?

And so there are a lot of new issues here that certainly were not contemplated in the license termination rule.

CHAIRMAN GARRICK: It reminds me a little bit of at Hanford you have a 460 square mile site, and it looks as though the opportunities for decontamination are pretty good, except for the 200 area.

MR. WYMER: Yes, that's very similar.

CHAIRMAN GARRICK: Those are the high-level waste tanks. And so here you have 3300-plus acres, of which five acres are high level waste?

MR. WYMER: No, it's an NRC-licensed waste disposal area, mainly for the stuff that came out of the reprocessing activities.

CHAIRMAN GARRICK: But it's basically the equivalent of a high-level waste tank?

MR. WYMER: No, it's related to reprocessing, but it's not the equivalent of the tanks, no.

CHAIRMAN GARRICK: Oh, okay.

MR. WYMER: That's my understanding that it's not, certainly. And then there is the other state licensed 15-acre site, which is totally separate. But of the 3345 acres, I suspect that a lot of those are buffer and can eventually be turned over totally green field and shrink the site down substantially over time.

CHAIRMAN GARRICK: Well, that was the point I was going to make. The opportunity for Hanford is maybe to go to complete green field is one thing, but to go from 460 square miles maybe down to 20 square miles is very reachable.

So what the equivalent of that here is from 3300 acres down to maybe 20 acres. I don't know what the amount

is.

MR. WYMER: But if the thrust of our report is to comment on the decommissioning criteria, then clearly we need some information about the criteria, and we need the West Valley input with respect to their view on the criteria. So it means we're not done with this topic with respect to even formal --

MR. LARSON: I don't see how you could write a letter on the final policy statement and the comments, which is what the Staff has asked you to do, until you see them.

CHAIRMAN GARRICK: Well, one of the things that would be helpful has already been suggested. That would be for us to see the comments.

MR. WYMER: Then we could work backwards and figure out what the criteria were.

CHAIRMAN GARRICK: Then when we get the comments and we get the criteria, we can put it together.

MR. LEVENSON: I think what Howard said is a key point. In August, we are going to get the draft policy statement with the comments and replies to comments, and there's only a little we can do before see that documentation.

The other thing, as has been mentioned, this is a very complex site with some highly fractured lines of responsibility, and most of the members of this Committee

have their own opinions on many topics, but for a Committee letter, we have to limit ourselves to those things that are NRC responsibilities.

CHAIRMAN GARRICK: Right, right. But the comments on the NRC criteria would be very relevant.

MR. WYMER: Maybe we ought to close it out for now and revisit this after we've had a chance to review some of the information that will be sent to us.

Thank you very much. We'll close out this topic. Thank you for your participation from West Valley.

CHAIRMAN GARRICK: Thank you. Well, we've got two choices. We can jump into the next topic, if the people are here.

We'll take a break now, and then by the time the break is over, the viewgraphs may be ready.

[Whereupon, at 2:30 p.m., the recorded portion of the meeting was concluded.]

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

NAME OF PROCEEDING: 120TH ADVISORY COMMITTEE ON NUCLEAR WASTE (ACNW)

CASE NUMBER:

PLACE OF PROCEEDING: Rockville, MD

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Mike Paulus

Official Reporter

Ann Riley & Associates, Ltd.

TECHNICAL REPORT ON LOW-LEVEL WASTE PERFORMANCE ASSESSMENT

RESOLUTION OF PUBLIC COMMENTS

PRESENTATION BEFORE THE ACNW

JUNE 13, 2000

MARK THAGGARD, SR. SYSTEMS PERFORMANCE ANALYST
NMSS/DWM

301-415-6718
mxt3@nrc.gov

PRESENTATION OUTLINE

- Purpose
- Background
  - History of BTP Development
  - Attributes of LLW PA Presented in the Draft BTP
  - Regulatory Positions in the Draft BTP
- Key Public Comments and Proposed Responses
- Proposed Revisions to the Document
- Summary

PURPOSE

To get feedback from the Committee, prior to finalizing the NUREG, on the proposed resolution of public comments.

BACKGROUND

HISTORY OF DEVELOPMENT

- Late 80's/early 90's significant activities in LLW area
  - States were attempting to meet milestones of the LLRW Policy Amendment Act of 1985
  - NRC formulated a PA strategy
  - SNL developed a PA methodology (NUREG/CR-5453)
  - 6/14/91 SRM directed staff to develop a plan for enhancing staff PA capabilites in LLW
  - SECY-92-060 called for the development of PA guidance

BACKGROUND

HISTORY OF DEVELOPMENT (CONT.)

- Early/mid 90's staff developed a preliminary draft of the BTP
  - Coordinated effort between NMSS and RES (PAWG)
  - Developed in parallel with a test case
  - Public workshop, ACNW briefing, interaction with national and international groups
- SECY-96-103 sought Commission approval to seek public comments on the draft BTP
- In a 8/7/96 SRM to SECY-96-103, Commission directed staff to seek public comments

BACKGROUND

HISTORY OF DEVELOPMENT (CONT.)

- May 29, 1997 FRN sought public comments
- Completion of the BTP has been slowed because of the cut back in the NRC's LLW program
- Completion of the BTP is an output measure in the NRC's Performance Plan for FY-00
- Staff plans to finalize and publish as a NUREG and not as a BTP

BACKGROUND

CONCERNS WITH EARLY APPROACHES TO PA

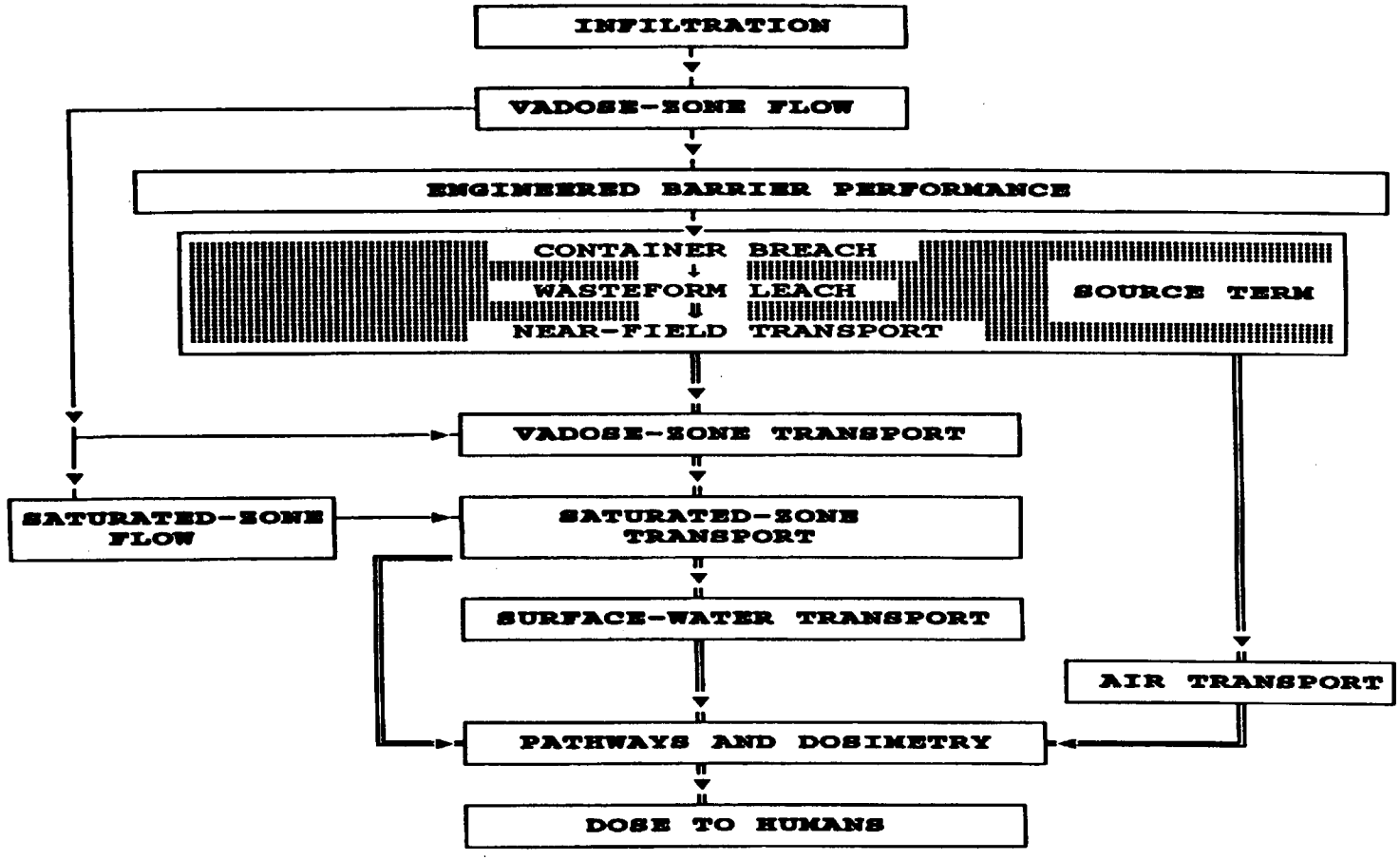
- PA conducted as a separate analysis - not necessarily integrated with site characterization or design
- Site characterization activities largely focused on ground water
- Generally little consideration of uncertainty or sensitivity

BACKGROUND

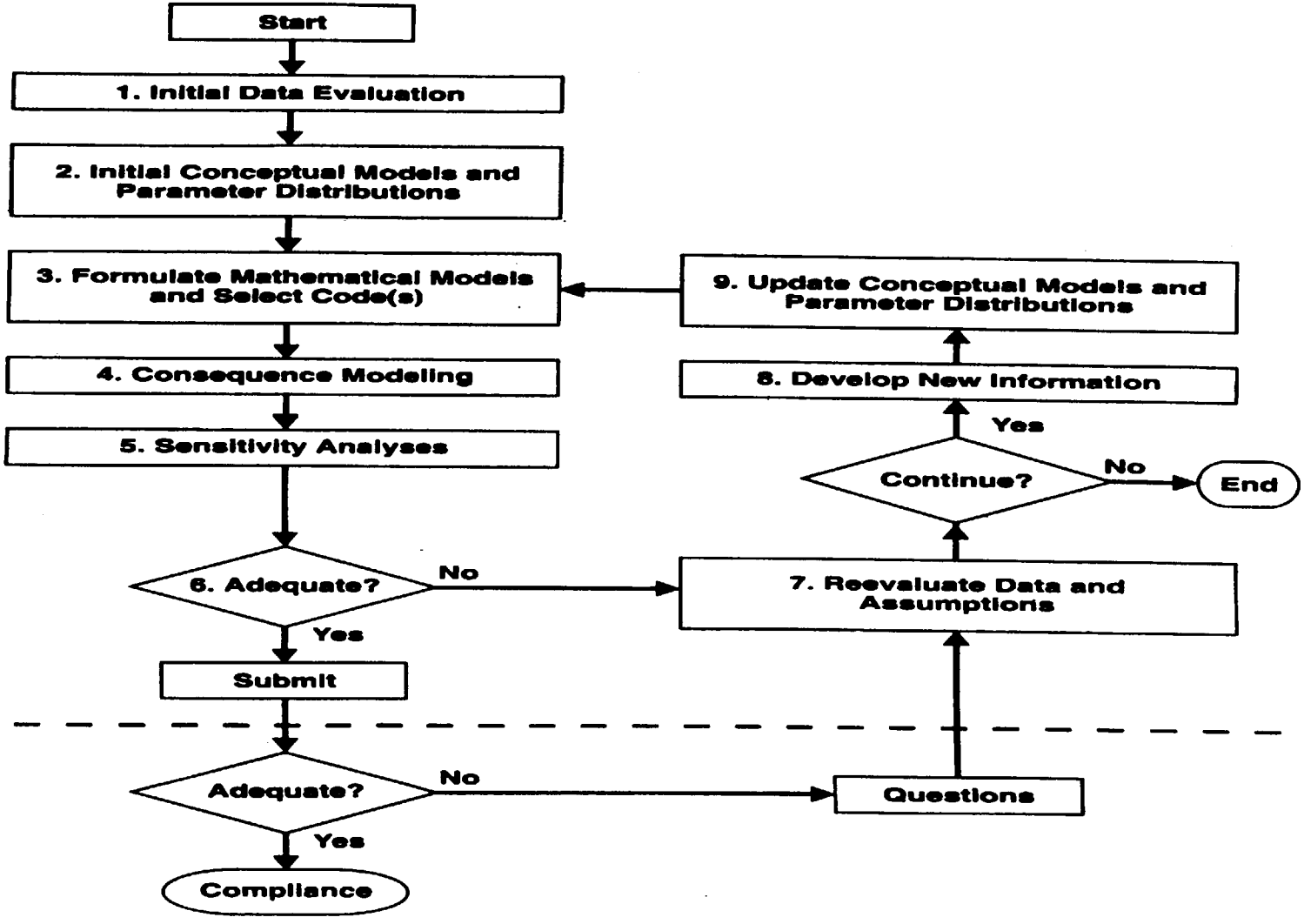
ATTRIBUTES OF LLW PA

- Analyses of long-term performance (post-closure) to demonstrate compliance with 10 CFR 61.41
- Structured after PA Methodology
- Iterative process
- Integrates site characterization and engineering design with the PA
- Incorporates a formal treatment of uncertainty

PERFORMANCE ASSESSMENT METHODOLOGY



INTERATIVE PROCESS



BACKGROUND

KEY REGULATORY POSITIONS

- Timeframe for LLW PA
  - §61.41 does not specify a time of compliance for meeting the performance objective
  - Draft BTP position: 1) 10,000-year compliance period and 2) qualitative evaluation beyond 10,000 years
- Consideration of future site conditions, processes, and events
  - What assumptions should be made about long-term dynamic or transient site conditions?
  - Draft BTP position: use a "reference geosphere" and "reference biosphere" based upon current conditions

BACKGROUND

KEY REGULATORY POSITIONS (CONT.)

- Performance of Engineered Barriers
  - How long should engineered barriers be assumed to be effective in isolating the waste?
  - Draft BTP Position: Assume that beyond 500 yrs, barriers are degraded; structural stability and chemical buffering can be considered for longer periods

BACKGROUND

KEY REGULATORY POSITIONS (CONT.)

- Treatment of Sensitivity and Uncertainty
  - Deterministic vs Probabilistic analysis?
  - Compliance metric for probabilistic analysis?
  - Draft BTP position:
    - Bounding estimate for deterministic analyses
    - For probabilistic analysis: mean of the distribution ≤ the performance objective and the 95th percentile of the distribution ≤ 1 mSv.

PUBLIC COMMENTS

OVERVIEW

- More than 175 comments were received from 17 different organizations
  - Agreement States (MA, SC, IL, NE, TX)
  - Non-Agreement States (PA and NJ)
  - Federal Agencies (DOE and EPA)
  - Others
- On balance favorable reaction
  - Document fulfills a need
  - Document well written
  - Document reinforces on-going efforts
  - Document provides helpful, useful, and logical guidance

PUBLIC COMMENTS

OVERVIEW (CONT.)

- Key comments focused on:
  - Four regulatory positions
  - Dose methodology
  - ALARA
  - Institutional controls
  - Ground-water protection
- Key revision
  - Staff positions in the Draft BTP are being withdrawn
  - NUREG is being published, in place of the BTP, and reflects views of PAWG

PUBLIC COMMENTS

TIME OF COMPLIANCE

- Comments:
  - A shorter time should be used (e.g., 500 years)
  - A 10,000-year compliance period is appropriate
  - PA calculations should be to peak dose
- Responses:
  - A 10,000-year compliance period will generally include the period of time when the waste is most hazardous
  - It is sufficiently long to allow an evaluation of natural site conditions
  - It is consistent with other regulations

TIME OF COMPLIANCE (CONT.)

PAWG POSITION

- Time of compliance should provide the technical basis for distinguishing between good sites and bad sites
  - The goal of the PA analysis is not to predict the future but to test the robustness of the facility against a reasonable range of possibilities
  - Ensures consideration of multiple barriers consistent with the NRC defense in depth policy (i.e., ensures that emphasis is not shifted from selecting a good site to developing engineering "fixes"
- The time of compliance should not arbitrarily limit information to decision makers (NAS -"Technical Bases for Yucca Mountain Standards")

TIME OF COMPLIANCE (CONT.)

OTHER CONSIDERATIONS

- PA calculations are generally more reliable for estimating dose than estimating time of occurrence of dose (i.e., complex analyses may be needed to demonstrate compliance that rely on delaying releases)
- Limited support for shorter compliance periods (e.g., 1000 years) in comments solicited by EPA on a 10,000-year compliance period in EPA's LLW Pre-Proposal Draft Standard
- A 10,000-year timeframe was used by several states in their assessment (e.g., CA, NE, and TX)
- Analyses in the draft EIS for Part 61 were carried out to 10,000 years.

PUBLIC COMMENTS

ENGINEERED BARRIER PERFORMANCE

- General comments:
  - The assumed 500-year performance life is arbitrary and without technical justification
  - It will discourage research to improve barrier performance
- Responses:
  - 500 years is generally sufficient to allow decay of short-lived radionuclides
  - Performance periods greater than 500 years can be assumed, but must be justified
  - Reiteriating the need for justifying the performance period should encourage research into barrier performance

PUBLIC COMMENTS

FUTURE SITE CONDITIONS, PROCESSES, AND EVENTS

- General Comments:
  - Uncertainties in human activities should be considered
  - Use of the "Critical Group" concept is not justified
- Responses:
  - Consideration of future human activities is highly speculative with no scientific or technical answer
  - Use of the "reference biosphere" and "critical group" concept is consistent with international opinion and practice

PUBLIC COMMENTS

TREATMENT OF UNCERTAINTY

- General comments:
  - Use of the mean is not justified
  - Use of the mean is appropriate, but may be difficult to communicate to the public
  - Use of probabilistic analysis is an invitation to failure in the current socio-political climate
- Responses:
  - The position taken has both policy and technical considerations
  - Use of the mean provides the best estimate of the system performance
  - The approach in the NUREG is intended to provide a clear understanding of the sources of the uncertainty which should build confidence in the results
  - The proposed approach in the NUREG is consistent with approaches used in other NRC regulatory programs

PUBLIC COMMENTS

DOSE METHODOLOGY

- General Comment:

The Draft BTP recommends using a conventional TEDE calculation while the standard explicitly calls for the use of the older ICRP 2 Methodology

- Response:

As a matter of policy, the Commission considers 0.25 mSv/yr TEDE to be an appropriate dose limit to compare with the range of potential doses represented by the older whole body dose limits

PUBLIC COMMENTS

ALARA

- General Comment:

BTP should provide guidance on how to comply with the ALARA requirements of §61.41

- Response:

The NUREG will include a discussion on how to address ALARA requirements by looking at the costs and benefits of various designs

PUBLIC COMMENTS

INSTITUTIONAL CONTROLS

- General Comment:

Institutional controls should be maintained at disposal sites for as long as the waste remains hazardous

- Response:

Although Part 61 conservatively limits reliance on institutional controls to 100 years, in most cases they will likely be maintained indefinitely

PUBLIC COMMENTS

GROUND-WATER PROTECTION

- General Comment:

Meeting §61.41 will not ensure that EPA's MCLs will be met

- Responses:
  - The comment is beyond the scope of the document
  - Current regulations provide adequate protection
  - MCLs were not developed specifically for ground-water protection
  - MCLs are based on an out-dated modeling approach

PUBLIC COMMENTS

OTHER

- Test case should be published as an example
  - The test case was presented as part of a two-day public workshop
  - The NRC has limited resources
- BTP should advocate the use of peer reviews
  - The NUREG will encourage the use of peer reviews and expert elicitation
- BTP should address criticality
  - Potential for criticality is extremely remote
  - Appropriate measures are expected to be taken during facility operation
  - Additional guidance is being developed

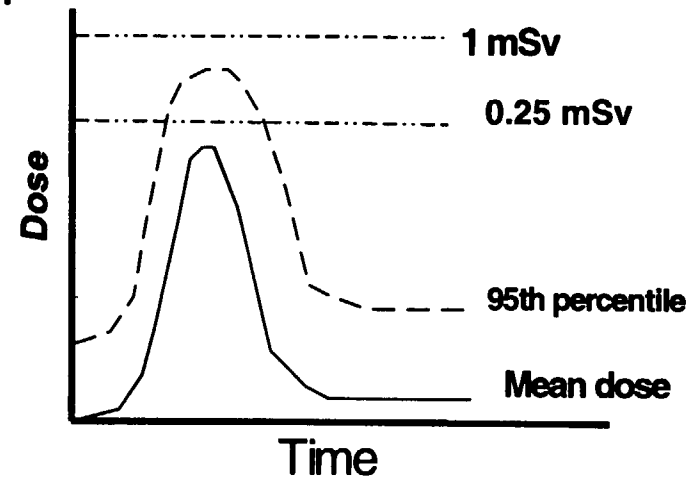
PROPOSED REVISIONS TO THE DOCUMENT

- Resolution of comments (included as an Appendix)
- Commission's Policy Statement on the Use of PRA Methods in Nuclear Regulatory Activities (included as an Appendix)
- Bibliography on Engineered and Natural Barriers
- Revised approach on the treatment of uncertainty
- Discussion on the Commission's position on the use of TEDE
- Information on demonstrating ALARA
- Recommendations on the use of peer reviews and expert elicitation
- Additional clarification provided in some areas
- Expanded glossary
- NUREG reflect views of PAWG

REVISED APPROACH ON TREATMENT OF UNCERTAINTY

- Previous approach: mean of the distribution should be less than 25 mrem; 95th percentile of the distribution should be less than 100 mrem.
- New approach: peak of the mean dose as a function of time should be less than 25 mrem; plot of the upper 95th percentile of doses as a function of time should be less than 100 mrem.
- Generally, consistent with approach used in HLW and decommissioning.
- Better representation of risk to an individual; therefore, more in line with the agency's risk-informed regulatory philosophy.

Proposed Approach



$$\text{Mean}(t) = \frac{\sum_{k=1}^{N} \text{Dose}_k}{N}$$

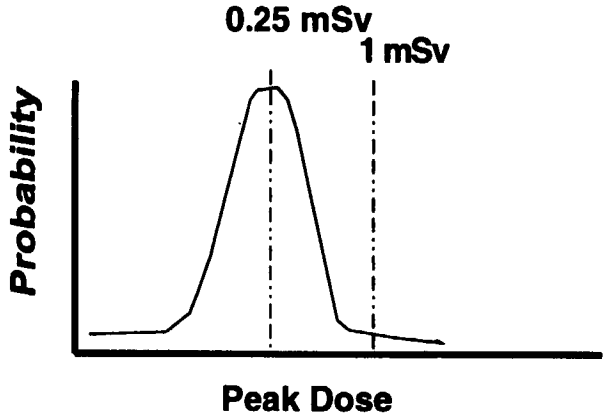
where:

Mean(t) ≡ mean dose at time t

$\text{Dose}_k(t)$ ≡ dose for run k, at time t

N ≡ total number runs

Previous Approach



$$\text{Mean} = \frac{\sum_{k=1}^{N} \text{Peak}(k)}{N}$$

where:

Mean ≡ mean peak dose

Peak(k) ≡ peak dose for run k

N ≡ number of runs

SUMMARY

- On balance the comments on the document were favorable
- Positions taken in the document remain largely unchanged; however, reflect views of PAWG
- Position on the treatment of uncertainty revised to be consistent with approach used in other program areas
- Responses provided for all comments
- Some additional information provided

United States
Nuclear Regulatory Commission

NRC's Draft Policy Statement on Decommissioning Criteria for the West Valley Demonstration Project and West Valley Site

Jack D. Parrott
Office of Nuclear Material Safety and Safeguards
Division of Waste Management

ACNW Meeting
June 13, 2000

NRC's Decommissioning Criteria for West Valley

- Issued December 3, 1999
- Apply the NRC's License Termination Rule
- Public Meeting held at West Valley January 5, 2000
- Comment period closed April 1, 2000

The Draft Policy Statement

3 Components

- Apply the NRC's LTR as the decommissioning criteria
- DOE/NYSERDA proposes a preferred alternative/develops EIS to support
- NRC verifies specific criteria meets the LTR, and prescribes its use after considering the impacts in the EIS

Summary of Comments

- DOE
- State of New York
- EPA
- Others

Schedule for completion of Policy Statement

- Submit responses to comments and any revisions to the policy statement to the Commission (8/00)
- Receive input from the Commission (10/00)
- Revise Policy Statement as needed and publish in the Federal Register (12/00)

Other NRC West Valley Activities

- NYSDEC Cooperation Agreement
- Commission Paper on Stakeholder Interactions
- Reviewing Remote Handled Waste Facility PSAR
- Upcoming review of EIS technical sections
- Upcoming review of EIS preferred alternative

Future Interactions with ACNW on West Valley

Staff will provide ACNW with the draft response to comments and final policy statement at the time of transmittal to the Commission for parallel review