

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

\*\*\*

BRIEFING BY DOE ON STATUS  
OF HIGH LEVEL WASTE PROGRAM

\*\*\*

PUBLIC MEETING

\*\*\*

Room 1F-16  
White Flint Building  
11555 Rockville Pike  
Rockville, Maryland

Tuesday, January 30, 1996

The Commission met in open session, pursuant to notice, at 10:05 a.m., the Honorable SHIRLEY A. JACKSON, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission  
KENNETH C. ROGERS, Member of the Commission

2

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

JOHN C. HOYLE, Secretary  
KAREN D. CYR, General Counsel  
DANIEL DREYFUS, Director  
Office of Civilian Radioactive Waste Management, DOE  
LAKE H. BARRETT, Deputy Director  
Office of Civilian Radioactive Waste Management, DOE

3

P R O C E E D I N G S

[10:05 a.m.]

CHAIRMAN JACKSON: Good morning, ladies and gentlemen, Dr. Dreyfus and Mr. Barrett. This morning, the Commission will be briefed by you, its representatives of the U.S. Department of Energy, on the status of the Civilian Radioactive Waste Management Program.

Back on June 9th of last year, Dr. Dreyfus and his staff briefed the Commission on the High-Level Radioactive Waste Program. Since that time, much has happened. Various pieces of legislation that could affect this country's high-level waste program have been considered in the Congress.

Budgets for both agencies, both DOE and the NRC, have been reduced, and each agency has taken a hard look and is continuing to take a hard look at its High-Level Radioactive Waste Program.

A briefing such as today's can prove to be very beneficial in times of diminishing resources. The free exchange of information can allow each agency to optimize the utilization of its resources to carry out its responsibilities effectively.

Dr. Dreyfus and Mr. Barrett, the Commission looks forward to hearing from you today on the changes that have and are taking place in DOE's High-Level Radioactive Waste

4

Program.

Commissioner Rogers, do you have anything you would like to add at this time?

COMMISSIONER ROGERS: Not at this point. Thank you.

CHAIRMAN JACKSON: If not, you may proceed, Dr. Dreyfus.

DR. DREYFUS: Chairman Jackson and Commissioner Rogers, I am pleased to have the opportunity to address the Commission on the status of the program.

As has been the custom, I would like to start by showing you a few slides of the activity at Yucca Mountain, if we can get the first one up.

The Chairman will probably recognize our tunnel at Yucca Mountain. This is a view of the first turn. The tunnel has now reached a repository formation, and that is a view of the turn from the ramp down into the drift that will extend through the repository.

The second slide is the rear of the tunnel boring machine, and in this one, you can see the laser beam that is used as a guidance system to keep the machine on its intended alignment.

Next, this is a view of the mapping gantry on the tunnel machine. That platform up above is able to be held stationary while the machine is boring, so that the

5

scientist geologist can do mapping and sampling without stopping the machine.

One of the unique features of this machine -- of course, nothing like that -- is that it's used anywhere in normal mining or tunneling operations. It's one aspect of why we needed to purchase a unique machine.

Next one. This is a view of an alpine miner. That is the business end of an alpine miner. We have resorted to using alpine miners for the alcoves, the test alcoves which are off of the main tunnel.

We had been doing those. I think when you were out there, you saw some that were done with drill-and-blast methodology, and this is a better methodology if we can make it work. It is a little less intrusive on the natural situation. It makes a much neater alcove, and we have been using this machine successfully and recently.

The next view is -- let me be sure what it is before I say it. That is the alpine miner in operation. That is the back of it and the spoil coming off of the back of the conveyer belt. That is actually drilling an alcove.

We have, I think, one more view of an alpine miner. I am not sure why it is, indeed, a different alpine miner, but when you have seen one alpine miner, you have seen them all. We will put it up there, anyway. It is a different alcove and a different miner we have been

6

operating, too.

Next one. This is testing in progress in one of the early alcoves, in Alcove Two. There are groundwater hydrology studies underway here looking at permeability changes across the Bow Ridge Fault which was the first major fault that we encountered on the way in, and those tests are in progress. Data is being gathered.

The last one, is a view of instrumentation of a bore hole in the unsaturated zone. This, in fact, happens to be a bore hole in which Nye County is conducting research and support and in a regulatory position. This is monitoring establishing a baseline on pneumatic gas flow and hydrologic conditions in the unsaturated zone. It is an issue that the County is particularly interested in, and they have been monitoring the changes in pneumatic conditions as the tunnel progresses.

That gives you some feel for the fact that there is work in progress at Yucca Mountain. There has been progress since your visit. I hope you can make another one soon. We can show you pretty near two and a half miles of tunnel at this point, and it is a different experience.

As you observed, a lot has happened since I last spoke with you in June of last year. We are well into the new fiscal year operating under a much reduced budget that has required us to restructure our geologic disposal

7

program.

You have my prepared statement which I think is comprehensive. I don't intend to read it to you, but I would like to highlight a few pieces of it.

We are as yet without agreement between the administration and Congress on any new policy regarding the near-term management of spent fuel. Congress continues to consider legislation to initiate construction of an interim storage facility.

If that legislation is enacted, we would, of

course, be looking at another redirection of the program. So, to the best of my ability at this point, I will share with you our planning for the future of the program and our response to the current fiscal year reduction.

We made substantial progress in 1995. We had a 40-percent increase, and almost all of it went to Yucca Mountain, and almost all of it was, in fact, utilized at Yucca Mountain. We completed the year with very little carryover and with accomplishments that frequently exceeded

our targets.

We overcame the start-up problems with the tunnel boring machine, excavated more than two miles ahead of schedule and on the budget, and in fact, the ability to manage that machine better gives us some hope that we can do more in '96 with it than we have in our current baseline

8

plans.

The machine has past the point at which we will be putting the first in situ thermal tests. The thermal test alcove is being excavated with an alpine miner, and we expect to have an in situ heater test scheduled before the end of calendar year 1996.

The machine at present is about at the point where we will have the alcove that will give us the first physical access to the Ghost Dance Fault. We will drill through the fault first to take samples of the situation as it now is and eventually tunnel through the fault itself. I expect to get substantial valuable information from that.

Progress to date on the tunnel has been important because it has enhanced and confirmed our understanding of site conditions. The tunnel has given us the first opportunity to confirm that those conditions we were imputing from surface operations and from drill holes are, indeed, what exists in the repository itself.

The Office of Waste Acceptance, Storage and Transportation also made substantial progress over the last year. We entered into the environmental impact statement for the multipurpose canister. We did, in fact, complete scoping and an implementation plan.

The contract for the design and certification was issued to Westinghouse in April, as I told you it would be.

9

Unfortunately, the decisions that the Congress made in the fiscal year '96 appropriation process have made it impossible for us to continue with that program, as we were pursuing it.

The Act provided only 400 million for the program and further froze 85 million of that amount pending possible future enactment of interim storage authority. So the result is a program level of 315 million. That is just about half of the 630 we requested, and it is 40 percent below our actual fiscal year '95 level of effort.

In anticipation of a constrained budget, we did take action in September. We eliminated about 875 contracted jobs over this fiscal year in the September action, and primarily impacted Yucca Mountain.

In November when we found out about the unexpected loss of the additional 85 million, we had an action which will eliminate an additional 200 jobs, mostly in support of the Waste Acceptance Program, program management functions, support contractor functions.

We have throughout this situation -- while we were, of course, immediately constrained to manage the financial situation to avoid an overrun situation in '96, we have tried to preserve the vital program activities and to look ahead and preserve those things which we felt had continuity under a constrained budget.

10

A much reduced repository program will be required. Congress did give us some guidance in the Appropriation Act. They said that we should focus on the core scientific activities at Yucca Mountain, and they recognized that the preparation and submittal of a licensed application would likely be deferred.

What new targets that are possible and practical for us depends upon our future expectations for funding. So the administration's fiscal year 1997 budget which is not yet firm and which is still considerable flux within the Department of Energy is a very important factor in what we can aspire to do when we develop a new program outlook.

I want to make the point that the program currently is in a transitional state, managing down on the

cash flow and doing what we must do, and we are doing a lot of contingency planning in the expectation of what I hope will be a more robust program when we know what the '97 outlook is.

The administration remains committed to geologic disposal. However, given the funding that we already have in '96 and the likely scenario for future funding, the only practical approach that we see is to concentrate the repository effort in the near term on the major unresolved technical questions that we have to answer to complete the conceptual design of the repository, describe its expected

11

performance, and indeed, that is the instruction that the Congress gave us in a conference report, to concentrate on the major unresolved, unknown issues.

In order to manage the program and in order to explain and justify our continuing activity to the stakeholders, we have defined a set of deliverables that are consistent with the conference report guidance.

They consist of a package -- these are near-term deliverables -- consist of a package of more specific design work that is focussed on those critical elements of the repository and a waste package including a concept of operations which I believe will show us that the technologies do exist to build a repository in the concept we have.

Secondly is a total system performance assessment that will be based upon those design concepts and that will capture the wealth of information that we already do have from the 15 years of work that has already been done.

Third is a plan and cost estimate for the remaining work beyond that time that would be necessary to complete a docketable license with this application for this Commission.

Finally is an improved estimate of cost necessary to construct and operate the repository, again based upon this refined design concept.

12

These deliverables when completed, I think, will give us a better understanding of the repository design and of its performance than we now have and a much better appreciation of work that is necessary to complete the license application and, indeed, the repository itself.

We believe we can complete that package of deliverables in 1998 and have, indeed, committed with the administration to do so.

We have named it, for want of a better name, a viability assessment. I will be free to say that one criterion of the name is that it not have term of art significance in the law of regulations because, obviously, this package doesn't.

CHAIRMAN JACKSON: Would you repeat that statement, please?

DR. DREYFUS: I say the reason we have characterized -- we have to characterize what is basically a package of deliverables that the Congress asked for some way, and it was important to not characterize it with a term of art that is in the statute or in the regulations because it does not, in fact -- it is not concurrent, coincident, with any particular one of the findings or formal actions that are described in the Act.

It is a management target. The deliverables that contribute to it will clarify the most uncertain aspects of

13

geological disposal of Yucca Mountain. If the judgment is positive, then obviously, the work that is done will also contribute to the requirements for a formal secretarial recommendation to the President, and subsequently, those will contribute also to a license application to the Commission, but the assessment will not be sufficient for, nor will it prejudice, these subsequent formal actions by the Department.

Some of those deliverables are necessary and are, indeed, mentioned in the statute as part of the necessary work to make a formal recommendation to the President, but they are not everything.

For example, they do not include an environmental impact statement which is necessary both for the license application and for the presidential recommendation.

In order to complete the deliverables, we have to document our understanding of site conditions, incorporating the data we already have collected and the new information coming very largely from the exploratory studies facility.

We have to have sufficient understanding of the critical factors affecting waste containment and isolation strategy to know whether the geological disposal is, indeed, technically feasible.

We will need to address the cross-cutting design issues such as the use of backfill, criticality control, and thermal loading.

14

We think we can complete the deliverables by '98 because we can rely on an enormous amount of information already collected on site conditions, progress we have already made on the advanced conceptual design for the repository and the waste package, and the understanding that we gain from our latest total system performance assessment.

Now, although our focus in the near term is not on the submittal of a license application, we recognize that we must keep you and your staff informed and engaged and preserve the integrity of the work that we are doing, so that it can be used in a licensing process.

We expect that your staff will provide us with feedback, and if a significant technical issue is not adequately addressed, and failure to do so would affect our ability to continue toward licensing, that we will have the necessary interchanges to deal with that.

We expect to develop a revised program plan over the next few months. It has got to be consistent with the 1997 budget presentation to the Congress, and therefore, it cannot proceed ahead of the President's '97 budget, but we will try to have it follow that as rapidly as possible, and it will describe our reconfigured program, and we, of course, will keep you fully and continually advised as we develop that.

15

Although the Congress has recognized repository licensing activities would be likely to be deferred under the reduced program, in our view, the long-range goal of a successful license application remains central to our mission, and we believe the program should include a plan and a target date for the submittal of a license application.

It is apparent from recent developments that any such plan is going to have to recognize some limits on funding because I think they are likely to persist.

I believe it is possible to move directly and efficiently from this viability assessment to the other work necessary for a license application if, indeed, we find that it is a viable venture.

The objective should be to design a repository that is compatible with the geologic setting, to develop a safety case to support a proposal to construct that repository, and the licensing process should focus on examining that safety case to determine if public health and safety and the environment are adequately protected.

The rigors of trying to get to this funding level, while preserving the vital aspects of our work, have led us to reevaluate what needs yet to be done based on 15 years of experience, and I believe it is possible and probably necessary to revisit the regulatory framework for geologic

16

disposal, and more importantly, the related expectations that have given rise to earlier work plans.

I believe that the cost of submittal of a license application can be significantly reduced if the focus of the licensing review is on the safety case for a specific repository design and its predicted performance, less than on a comprehensive evaluation of the site.

If this were the case, I think we could aspire to reestablish a target date for license application, not long after 2000, and at the kind of funding that the Congress might be willing to support.

This may be the only way the program can command the resources to retain the geological disposal as a national strategy.

Now, we have done a lot of planning. We intend to explore this approach. We are considering the revision of our own regulations which would be necessary to clarify our intentions with regard to our future program. It would provide a forum in which the discussion of what, indeed, is the remaining necessary work could be done, and we will, of course, keep you informed as we proceed with that process.

Briefly, with regard to the near-term management of spent nuclear fuel, in the absence of an agreement between the administration and Congress, we don't have new

policy direction regarding our role, and we have no access

17

to the 85 million that has been set aside for work on an interim storage facility.

Our contract to develop the multipurpose canister system was structured in three phases with three successive decisions. The first phase of the contract, system design, and preparation of a safety analysis report will be completed as scheduled by April of this year.

When I met with you last June, I indicated we anticipated proceeding with phase two certification and prototype testing. That will not be possible, and we will not proceed with phase two.

The GA-4/9 legal weight truck casks were also being developed in our program. Certification process is underway. Safety analysis reports were submitted to the Commission in July and August of '94. We are going to be unable to provide additional funds for that process. Private industry may choose to pursue the certification.

We will continue to work on credit for burnup at least through the partial credit for actinide burnup stages, and we aspire to remain in the burnup credit process because we believe it is central to so much of the system, whether or not the transportation and storage is done in private practice or with a bigger role for us, and in any event, for the repository. So we do intend to, as our funding permits, continue with burnup credit activities, and we will

18

certainly continue with the partial burnup activity.

Of course, if the administration and the Congress come to agreement on policy direction regarding interim storage, the program is prepared to aggressively act on that direction.

We are looking at the issues of interim storage licensing. We are looking at the issues of achieving the capability for a very large-scale transportation venture, campaign in the United States, and we believe we know how to proceed once we are given the appropriate directions to proceed.

I am grateful that the working relationship between our staffs has been strengthened. We have had a lot of hearings and a lot of interaction over 1995. I believe there were 30 meetings, staff meetings in 1995.

There will be fewer in '96 simply because of lack of resources. However, we are becoming more inventive at that. We intend to do a lot of video conferencing. We intend to remain engaged, and I think both of our staffs understand the necessity to figure out more economical ways to do that without sacrificing the relationship we now have.

I hope we can draw upon that experience to maintain progress on the work we are doing and, of course, to be able to respond to any new developments that may occur.

19

At that point, I will stop and take your questions.

CHAIRMAN JACKSON: Thank you.

Let me go back to a couple of things. You mentioned in your written submission as well as your remarks today that you thought that there needed to be changes in the regulatory framework, and I would like you to speak with a little more specificity about that and what you have in mind.

DR. DREYFUS: Well, from our point of view, the program has been evolutionary, and a good deal of the descriptive work on what ought to be done in order to have a complete site characterization venture was written, as you know, culminating in about 1987.

It also was done under a statutory regimen that contemplated comparison among multiple sites, a future selection of the preferential site, and a quite different outlook than we now have.

So, informed by 15 years of site-specific information as to what is important and not important at Yucca Mountain and what the true problems might be and, of course, informed by the notion that we are not, in fact, comparing sites, but simply characterizing a site for a particular repository, we ought to be able to do a better job of describing what is important and what needs to be

20

done from here on out.

It is pretty clear that our own regulation, 960, is not held in high regard. I think that there have been

expressions, including draft legislation in Congress to abolish it. It is time for it to be rewritten.

There also is always the notion that a program plan, as you change a program plan, is evolutionary, but somewhere along the way, it is appropriate to again restate what is the job and what needs to be done.

I believe there are factors in the historical literature that are no longer as significant as they might have been. There are things that we now know we can bound and dispense with, that we now know are not central to the safety case at Yucca Mountain, and I believe that we can describe a program that is a good deal less elaborate than the one that is described historically.

To what extent that affects the regulatory framework, I don't know, and until we get the description written down, until we can say to you this is what we plan to do, it would be hard for anyone to say whether that, in fact, is different from the expectations in your regulations. It is different from the expectations in our regulations. I can stipulate that at the moment.

So what we would propose to do is to look at a program that we think will support a safety case for a

21

repository at Yucca Mountain, describe it, and then have the dialogue as to whether that, indeed, there are regulatory requirements that lay outside that plant. If there are, well, then there should be.

We are not further than that. We are doing the planning to structure the program we think we need. We have had discussions on what the key technical issues are, that kind of thing which moves in the right direction, but I don't think we have made any commitments as of yet.

CHAIRMAN JACKSON: Under the new viability assessment, to use the revised terminology or the terminology in this particular case, are NRC and DOE looking at the same technical issues?

DR. DREYFUS: Well, the list of technical issues that I have seen that have been discussed as technical issues, I think there is a disagreement as to the significance of a couple of them which is, I think, still being discussed, and then, of course, we are talking in a very high level of abstraction.

When we start to subdivide those, I would expect to find a larger degree of disagreement, but that, after all, is what we need to do. We need to know what the Commission thinks are the issues that have to be resolved in the licensing.

CHAIRMAN JACKSON: Let me see if I am paraphrase

22

or summarize what I think I heard you say. In doing this approach of what you call supporting the safety case, there seems to be three elements. One was a rewrite, a revision, or withdrawal -- that's my term -- of 10 CFR 960, the siting guidelines piece. Is that correct?

DR. DREYFUS: A restatement. Now, I don't know whether that's what the format would be, but a restatement of our proposed approach to completing the job.

CHAIRMAN JACKSON: The second -- okay. And I had program plan changes. I mean, that is more broad than just

-- DR. DREYFUS: Program changes are definitely a part of the outlook, yes.

CHAIRMAN JACKSON: Third, the increased use of bounding.

DR. DREYFUS: In those areas, because we know better what our waste isolation strategy is and what our site is, in those areas, it appears now to be amenable with that sort of bounding, and in peripheral areas, it should be easier than in the central areas.

CHAIRMAN JACKSON: Let's focus on the second piece a little bit more in fleshing out what program plan changes you envision as being the most significant ones, that are different than what has been the case heretofore.

DR. DREYFUS: Well, that's the area, in fact, in

23

which until we write it down, we can't be very specific. I really am not in the position today to say we are dropping a specific item of work, and I aspire to have a document that says what we will do within the next couple of months. We are looking at that now.

CHAIRMAN JACKSON: Okay. So you are saying that your feeling is that there have to be changes, but today, you are not prepared to say what those changes should be.

DR. DREYFUS: That is right.

CHAIRMAN JACKSON: I note that DOE intends to terminate work on the licensing support system. Yet, you state that you have an aspiration to be able to reinstate a license application date soon after the year 2000.

The question is, in looking at your revised program, are you going to be addressing -- or how can you ensure that there is the availability of a licensing support system or the kind of documentary information and data that would be needed in a licensing process in enough time before the submission of license application?

DR. DREYFUS: Well, the LSS is caught in this transitional thing that I mentioned. The first thing is '96 budget. In the '96 budget, as you recall, we had just reached the stage of having an accommodation and agreement among the user group and others, advisory bodies, as to what it ought to be and how it ought to be managed or coming to

.  
24

the point of knowing what we were doing.

We had funded it rather healthily in the '96 request. So the first thing is that in the '96 budget we got, we simply can't afford what we were going to do in '96, and in the original response to the '96 budget, we said, whoops, licensing has now gone out over the horizon, and that was, of course, the way it looked to us at the outset.

In some fiscal '97 scenarios, that is still the case. I mean, I'm being a little optimistic, but the '97 budget will permit us to be more forthcoming.

So the first thing you see in '96 is that looking at the constrained '96 budget and the expectation of much deferred licensing, we deferred the LSS and would do nothing with it now.

We are, in fact, struggling to hold our own systems together in the '96 budget. It is, indeed, a tough thing to manage to because not only is it a 40 percent reduction, but it is a 40 percent reduction and a bunch of termination costs that don't pay for new work.

So, when you look at what is available for new work in '96, it is a lot less than 60 percent of what we spent last year. So we just have a tough time this year.

Now, what we do in '97, I think, depends on what we can come up with. If we put a licensing date back in this program based on whatever the administration tells us

.  
25

we can plan against, then yes, definitely, we have got to get the LSS back into a time frame that will be adequate to support that licensing date, and we are very cognizant of that, and there are a lot of things that have to go -- if we put a licensing date in that is reasonably close to the year 2000, there are a lot of things that have to get back into the program in '97 when we get the money, and we are aware of that.

So we are not going to try to do it without record backup by any stretch.

CHAIRMAN JACKSON: No, no, no. I mean, I am assuming that we all understand --

DR. DREYFUS: We all understand.

CHAIRMAN JACKSON: -- that that has to be there.

DR. DREYFUS: We will look very hard at the timelines and be sure that we are not --

CHAIRMAN JACKSON: Well, there is also the issue of putting Humpty Dumpty back together again.

DR. DREYFUS: That's right.

CHAIRMAN JACKSON: So my real statement to you as opposed to a question, which is what I usually do, is that since you are talking about a change to program, as you are doing that, that you have at least in the background the fact that a licensing support system or something of that nature has to exist --

.  
26

DR. DREYFUS: Yes.

CHAIRMAN JACKSON: -- and that it can't go out of your thinking as you are developing --

DR. DREYFUS: It has not.

CHAIRMAN JACKSON: -- a new program in response to constrained resources.

Let me ask you this particular question. Since the waste isolation strategy is noted for providing the basis for organizing and explaining the rationale for the more limited testing program, when will the completed waste isolation strategy be made available to the NRC?

DR. DREYFUS: We are working a draft. The contractor's initial work is completed, and we are in the

process of the review of that draft.

Have you got a date on when we will meet?

MR. BARRETT: Let me ask Dr. Brocoum if he would want to venture.

DR. BROCOUM: A couple of months, we are informed. It is in the final stages of review in our quality assurance program now.

CHAIRMAN JACKSON: Let me ask you this question. You also seem to be taking an approach that, in a certain sense, will address the question of what can go right and, you know, we're the regulators, and the question is will this testing strategy permit you to realistically assess and

27

quantify factors that might detract from overall system performance, as well as those that enhance.

This is, again, when you are talking about a safety assessment.

DR. DREYFUS: Well, we certainly intend to totally elucidate the safety case we make, and if there is a factor that has significant impact, yes, we will have to deal with it. We will deal with it either by demonstrating -- or it does not have significant impact, or describing and designing for it, one of the two.

CHAIRMAN JACKSON: At this point, can you say how you feel a private initiative by industry on the multipurpose canister development might interface or be integrated into DOE's overall waste package design and development activities?

You alluded to it in a generalized way.

DR. DREYFUS: There are a couple of things that are reasonably sure. The Congress sequestered the money we would have used to pursue our own in-house technology development program, and as I read it, it said you will get that money when you get a bill, and when I read those bills, they say don't do canister work. So I see no eventuality in which I get the money and the permission to do the canister work.

On that basis, we have -- looking forward to the

28

notion that there has to be the evolution and development of a suite of canister technologies in this country if we are going to move 3,000 tons of spent fuel a year -- we have to get that done through the private sector.

Now, since the canister program -- since we announced our intention to stop the canister program, there have been indications that industry intends to move into it. There is a good deal of appreciation that there needs to be a more comprehensive, more standardized storage and transportation technology out there.

I think people are beginning to realize that in the absence of that, we could create a situation in which dry storage is so varied and so site-specific, both economically and technically, it could create quite a management problem when the time comes to go and get it and move it, and I think that is appreciated in the private sector.

Now, the question is you are talking about \$100 million worth of investment, one way or another, to get these canisters built, and there is clearly a very large market and a very large economic incentive some day. The problem is nobody knows which day, and so capital funding for the development of these technologies has got to have some notion of when it is going to be returned.

I think there is going to be a lot of activity. I

29

think there is going to be -- there will be private ventures approaching the Commission for the certification of more comprehensive technologies capable of taking more of the fuel and probably at least due purpose, if not at least possible multipurpose.

We are getting a lot of inquiries about specifications for storage and that sort of thing. So I think yes, it is going to happen. What I am less sure about is the timeline when somebody actually puts money on the table and comes before you with a certification application. That is a little hard to predict.

It will happen. We will when the time comes. We are told we have a timeline. If we are given the job, we will go out and look for transportation services, and those who profess to supply them will have to have access to technologies. That will create an incentive, and it will happen. Whether it will happen prior to that incentive is a question of how industry is guessing about the imminence.

CHAIRMAN JACKSON: I have some additional questions, but I will defer them, and I would like to give Commissioner Rogers a chance to raise some issues.

COMMISSIONER ROGERS: Thank you.

Just on this canister question, it does trouble me, though, that there might be the possibility that the canister program, a private canister program might start to

30

move quite rapidly for some reason, and the design submitted to NRC might be entirely licensable according to our requirements, but not necessarily fully compatible with what the repository design might anticipate.

It would seem very desirable that you ought to be able to provide some guidelines from your point of view on what those requirements on canisters, if they are going to be placed in a repository themselves, some part of an MPC system, that that is laid down early on, as early as you can.

Even though you are not funding it and you are not supporting that work, it seems as if your ultimate design is going to have to take into account what those things are going to look like and what their characteristics are going to be.

We might be able to very well license something that really doesn't quite fit the final design of the repository because it is entirely safe for other purposes, but maybe not entirely suitable for your ultimate repository design.

It seems that it is very important to try to make sure that there isn't a disconnect there. As you cut off your support for the financial support, it doesn't seem to me that you really can cut loose entirely from design considerations of those canisters for your purpose, and I

31

would just welcome any comments you might have on that.

DR. DREYFUS: Well, as we have said in previous appearances here, the ability of the canister to be utilized in the waste package has always been something that had to be decided when you got to that point, and we were seeking from the Commission an expression that our design in no way a priori prohibited the use of it in a waste package rather than a certification at this point that it would be okay, and I think we had a mutual understanding that was impossible to do at the moment.

Now, yes, we will facilitate to the best that we can the development of a multipurpose canister. We will tell the industry what we can tell them about what specifications would be required.

It is not clear to me that the different scenarios of the future inherently make a multipurpose canister the economic bet, and therefore, we're going to see, and now that we're going to do it through the marketplace, very clearly, whatever the economic bet is, is what will come forward. In other words, if we are going to have a scenario extensive interim storage, that gives you one kind of economics. If you don't, it gives you another. It is going to be a little more a question of the economic outlook, I think the shorter-term economic outlook, that being the way the marketplace works. We will do the best we can.

32

COMMISSIONER ROGERS: It is a worry that that by itself might dictate something that in the long run may give a problem with a repository.

DR. DREYFUS: We have been approached, and we are going to do the best we can to provide guidance, so that should vendors wish to try to accommodate the waste package, they will have the best shot at it. That is all we had is a shot at it. So we will do the best we can.

I understand the problem, and I am concerned about it.

COMMISSIONER ROGERS: Let me just say, in general, I think your approach really is very impressive. You are dealing with a very tough problem with your budget cuts, but it seems to me that the approach that you are taking on this viability assessment makes an awful lot of sense.

It might even be the way that the whole thing might have gotten started a long time ago if one could have seen how to proceed in a clearer light.

So I personally find it a very interesting approach. However, I do have some problems in that I think that once you have come to the -- and I think the Chairman sort of touched on this. The viability assessment, it seems to me, is really taking into account all of the positive

aspects of the site, your design, and so on and so forth, and seeing when you put them altogether, do you wind up with

33

something that seems to make some sense and that it looks like a totally -- at that point could look like a totally viable approach.

It may be not so different from actually some work that has been done in the past on this. I don't know. However, there will be serious questions raised at that time on all sorts of possibilities, and I think your statement that it ought to be easy to move from the viability assessment to license application is one I am not sure I can agree with because it seems to me that is really where the problems are going to start to surface.

The viability assessment may look very good from your point of view. You may have a total design. You may have all the elements in place that might seem to make very good sense to you and all fit together. However, there will be questions raised, and some very tough questions may very well come up at that point, and that is not -- then they are going to have to be dealt with, and they will involve technical matters.

I think that unless there is some legislation that says all of such things must be ignored, that the process is going to be a complicated one from then on. I think what you are doing right now makes a great deal of sense. It looks like a very sensible engineering approach to trying to come to a solution here.

34

However, that is different, as you know, from achieving a license, and licensing is not just simply a collection of engineering judgments. It is much more than that.

I just feel uncomfortable about the idea that one can move quickly from a rosy viability assessment that looks pretty good to a successful licensing application without a good deal more work of some sort. It may even just be legal. I don't know, but there will be technical issues as well, I am sure.

So I am concerned about the documentation. It comes back to the LSS question, in a sense, not from the standpoint of total access by everybody that might have a right to access the LSS and so on and so forth, a very big comprehensive system, but rather, some ongoing means for documenting, and if I can use the word -- I don't like it -- memorializing decisions that are made along the way with respect to how much data has already been collected and how much data might be necessary in the long run.

It is going to be years down the road before one has to return to what was the basis for stopping at that particular point in the collection of some data, and I think that documentation there is extremely important and some way of preserving it.

To me, this is one of the features of the LSS that

35

has always justified its existence. So that, I know you have said you are not going to forget about the data, but I do think that it is very important that every kind of decision -- tentative decision because we have said many, many times, no decisions from the Commission's point of view are final until all decisions final, but nevertheless, from your point of view that when you proceed to a certain point in your viability assessment, you say that is as far as we have the funds to go, and we think it is far enough, and then you move on to something, that that is well documented and well recorded, so that 10 years from now when you have to resurrect it, it is not a hard thing to do.

So that seems to me that that aspect of the LSS cannot be simply turned off, and you know you have to deal with it whether you call it LSS or you call it something else entirely. It is of no great moment to me, but the notion that the preservation of decisions with respect to the collection of data are extremely vital for the future.

I am not going to have to be dealing with it. Maybe none of us in this room will ever have to be dealing with it, but somebody will have to, and at that point, you don't want to run into a stone wall.

So that, I just guess that while I like very much your approach and I admire the progress you have been making and how you are approaching the financial problems, I don't

36

think that it really is intellectually defensible to say that one can defer licensing considerations. Licensing

considerations are what you are into right now, every day, in a sense.

You may ultimately decide not to even apply for a license, but if you do, then what you do right now is a vital part of licensing in the long run.

So it is a question of degree, of course, but I do think that it is very important to give vital consideration to the quality assurance question which relates to the documentation. That is always going to be the one in the long run that will be vital in a licensing decision or a challenge to a licensing decision, and one cannot forget the vital nature of that not necessarily right now and maybe not in coming to your viability assessment, but ultimately in dealing with the finalization of a license application.

So I just commend your work very much. I know you have been struggling under enormous difficulties, and I think you have got a very clear sense of how to proceed here, but I do just come back to this point that the documentation and quality assurance questions are just as important in the long run as anything else that you do, and somehow you have to find a way to see that they are not lost; that there is no disconnect as you proceed along because a gap, a vital gap in information and records could

37

be fatal in the final analysis.

Thank you.

CHAIRMAN JACKSON: Thank you.

I have kind of one follow-on, and in a certain sense, one could argue in the same vein of not losing Humpty Dumpty here.

How do you intend to handle the issue, the fact that the Nuclear Waste Policy Act, as amended, requires that in the recommendation of the Secretary to the President vis-a-vis Yucca Mountain suitability, that there is a requirement for an environmental impact statement, but all work based on budget constraints on that is disappearing? So if, in fact, this site is found to be viable in 1998, how do you intend to address -- how do you intend to have that issue addressed?

DR. DREYFUS: Yes. That goes back to, I think, the note I made that you say I said it was easy to move from the viability assessment of the license. I meant that in a sense that the viability assessment is a subset of what we need for the -- further, both the presidential recommendation and the licensing, not that it was easy in a workload sense because the amount of work necessary between that viability assessment and a license application is a critical question of whether we ever get there or not or how long it takes.

38

What again is transitional is that our current baseline work plan at Yucca Mountain does not contemplate moving to licensing on the timeline. It contemplates reduced funding, getting the funding under control, getting the expenditures under control, preserving vital functions, and doing the viability assessment.

In that mind set, which is the mind set we entered '96 in when we were not sure at all how hard it would be to get hold of the financial side of it, we were not considering getting back on a licensing track in any short period of time. So a lot of this stuff the moves out.

Not documentation. I fully agree that you do not stop preserving the integrity of the data you have got, and you have got to archive and you have got to have retrieval capability and you have to maintain quality assurance, but the rest of it, the workload stuff, the EIS, LSS, loading and all of that stuff was viewed as "we will do that later, if...."

Now, as we went through this process, we got a little more hopeful that we could hang on to more of the program. We had a very good year in '95. '95, a whole lot of stuff came to fruition that had before been scattered data.

The performance assessment was very, very significant, and the tunnel itself confirmed a great deal of

39

what before was just hypotheocy.

So '95 was a very big year, and when we started looking at it, we said maybe there is more done than we thought. Maybe we can, in fact, aspire to licensing in the near term.

The key is you have got to have a budget level that permits you to do things like the LSS and the EIS. If

we get it, then what we would do with the EIS is we would restart the EIS sufficiently to make that timeline work. Whatever the date of the presidential recommendation is, we have got to back off it the appropriate length of time for an EIS, and we have to restart it.

We did the scoping, and we suspended it. For all practical purposes, what it basically means is that if we get a budget that will permit it, we would restart that in the '97 time frame in order to have it ready in time for a formal recommendation.

We would also have to complete a design. A design that we are looking at for the viability assessment is concentrating on those aspects of the design that are critical to performance assessment. In order to have a design for an application, it has to be comprehensively up to the same level of sophistication, and that would require that we restart some of that work.

So there is a lot that has to be restarted.

40

CHAIRMAN JACKSON: Well, I think you have laid out your own challenge here. I mean, obviously, you know that from our perspective the kinds of safety assessments, performance assessment tied to safety that would be necessary for licensing is a particular focus of ours, but what I would say to you is that in laying out these -- what I'll call them, the three bullets that I discern constitute the basis of your viability assessment approach at this moment -- you talked about the increased use of bounding, and I would just say to you that in order both to be in a position to submit a license application that is complete, one can't lose sight of issues having to do with the documentary record, and then in terms of what the Nuclear Waste Policy Act, as amended, requires in terms of environmental impact statement.

So all I would say to you is that if you take these and related issues in terms of how you do and work out your revised program, that you should take them as part of increased use of bounding, so that you are not creating something that when one is back on to a licensing track that one ends up having to redo a lot of material; that in designing your viability assessment to respond to budgetary constraints and what you have to take back to the Congress, that you understand that it is happening within a certain phase space that you also have to respond to down the line.

41

So it is pay me now or pay me later, but you know you have to pay.

DR. DREYFUS: Yes, indeed.

CHAIRMAN JACKSON: Unless Commissioner Rogers has any other questions or comments, Dr. Dreyfus and Mr. Barrett, I would like to thank you and your staff for taking the time to come to brief the Commission on this very important topic.

The information and the exchange that we have had today will be of great assistance to us in developing and modifying our own high-level waste program here at NRC. We have our own constraints and decision-making.

Clearly, this whole area is undergoing significant change whose endpoint none of us can quite see at this point, but I believe that in times of reduced resources, it is more than ever important.

I didn't really question you about this, but you talked about changes in interactions with the NRC, and I am, of course, curious as to what those changes are, but the lines of communication have to be kept open, and I think this kind of inherent programmatic bounding that we have talked about has to be kept clearly in mind.

Again, I thank you for an excellent briefing. Unless you have any further comments you would like to make, we stand adjourned.

42

DR. DREYFUS: No.

Thank you very much.

CHAIRMAN JACKSON: Thank you.

[Whereupon, at 11:10 a.m., the briefing was concluded.]