



Department of Energy
Washington, DC 20585

[Handwritten initials]

JUN 9 1992

Mr. John Linehan
Deputy Director
Division of High-Level
Waste Management
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Linehan:

Thank you for joining me at the first Director's Forum, held in Chicago on May 7, 1992. The objective of the Forum was to obtain the input of representatives of affected governments, interested parties, and the public on the Office of Civilian Radioactive Waste Management's policy, strategy, and plans for site evaluation. We were provided with many thoughtful comments and suggestions on the site suitability evaluation process and the Early Site Suitability Evaluation report, on the Director's Forum, other public involvement questions, and the program in general. This meeting was an excellent learning experience for us, and your contributions will influence how we proceed with site evaluation and other aspects of the waste management program.

I was pleased with the numerous comments about the Forum offered by participants at the conclusion of the meeting, and the suggestions with respect to continuing this kind of dialogue. Due to the complexity of the site evaluation issues, we did not have the opportunity for a full discussion of the Director's Forum objectives and approach within the meeting time available. I am very interested in your evaluation of the first Forum meeting and your ideas on how we should proceed with the Forum in the future, and have asked Jerry Saltzman to contact you soon with some follow-up questions on this.

I look forward to continuing our dialogue through the Director's Forum and other formal and informal means. If you have questions or comments in the meantime, please contact Jerry Saltzman or Allen Benson at 202-586-2277 (FAX 202-586-7259). Once again, thank you.

Sincerely,

[Handwritten signature of John W. Bartlett]

John W. Bartlett, Director
Office of Civilian Radioactive
Waste Management

Enclosures *see help*

cc: Mr. Robert Bernero
Mr. Joe Youngblood

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**DISCUSSION NOTES
ON THE
DIRECTOR'S FORUM**

Ramada Hotel O'Hare - Chicago O'Hare International Airport

May 7, 1992

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

DIRECTOR'S FORUM

Ramada Hotel O'Hare - Chicago O'Hare International Airport
May 7, 1992

This document presents notes on comments made during the Director's Forum discussion; it is not a verbatim transcript of the proceedings, nor does it represent an analysis of the discussions. Because participants were assured that the discussion was on a "not for attribution" basis, bullets ("•") are used to identify comments by participants other than Department of Energy staff, contractors, or the discussion facilitator.

THURSDAY, MAY 7, 1992: FIRST MORNING SESSION

INTRODUCTIONS/FORUM ROLES AND RESPONSIBILITIES

DOE: I welcome you today to the first Director's Forum. I'd like to introduce our facilitator. He'll be handling the meeting from now on.

Facilitator: I'd also like to welcome you and thank you for participating in the first Director's Forum and contributing your views. A number of you took part in the strategic principles workshops. This meeting is being held to obtain your input on the early site suitability evaluation (ESSE). We have also added to the agenda the U.S. Senate Energy Committee hearing held in March on the program and its budget. Specifically at this Forum, we'll discuss the policy issues and process involved in the ESSE. This topic was selected because it is a significant current effort by DOE. Let me read a brief quote from a letter by John Bartlett that explains the significance of this effort.

"I consider the evaluations documented in the ESSE report to represent a current baseline, or benchmark, that can be used in the coming months to help focus and prioritize data acquisition activities and provide a foundation for the resolution of technical issues related to site evaluation. I have invited comments on the ESSE report and the accompanying peer review report, and on the overall site evaluation process, in order to help assure that the basis for DOE decisions on future plans and activities is sound. In addition to seeking general review and comment, I am seeking input on the ESSE report and its relationship to the overall site evaluation process at the first meeting of the Director's Forum, to be held May 7, 1992, in Chicago."

There is a prepared agenda to be found in your meeting notebooks under Tab A. I note that the agenda is flexible to allow for maximum input from participants. You see we will have presentations and open sessions for discussion. I also draw your attention to a

list of seven questions upon which DOE has indicated an interest in obtaining the group's opinions. DOE wanted to give the group an opportunity to address these and other topics of interest. I suggest we proceed through the opening remarks and the first presentation on ESSE. At the break we can consider the seven questions and the order of agenda topics. After the break, we can discuss adjustments in the agenda. One participant is leaving at 3:00, so I suggest that the presentation on the Senate hearings scheduled for then be given immediately after lunch.

Regarding meeting procedures, participants are speaking as individuals, not as representatives. Notes will be taken and a record kept, but no quotations will be directly attributed to individuals. The press is asked not to quote anyone directly. If you want a quote, ask for it during the break. The intent is for open discussion. DOE is looking for views from all parties. This is a way to express and record them.

My own involvement in these issues goes back to 1979 with the National Governors' Association (NGA) on high-level waste and low-level waste. I worked with the NGA from 1979 to 1986 on low-level waste. Recently, I facilitated the Strategic Principles Workshops. Someone suggested to me that as a "facilitator," I should roam around with a mike like a talk show host, but I have a more minimalist view: I want to maximize your discussion, keep us on schedule, and prioritize topics the way you wish. Beyond that, this is your meeting.

DOE: I want to extend a warm welcome to all of you at the table and in the audience. This is part of an effort to continue to involve you appropriately and effectively in moving the program forward. It is a first follow-on to concepts put in place in the strategic principles workshops, which laid the foundation, and the MPA workshop. The Director's Forum is trying to get you to help us with topical issues of the program.

Our first topic is ESSE and in particular the ESSE report. It is the basis for our future work in site characterization. DOE has made no use of the report to date, taken no action, made no judgment, not implemented the report. We've received it and passed it on to you. It is the basis for our going forward but now we're seeking your input on how we use or proceed from the report. We're looking for technical input if you have it but principally for your comments and thoughts on policy, management strategy, and the factors relating to implementation of the technical findings of the report.

There are 42 criteria involved in evaluating site suitability. We're making judgments on the basis of the data. The report is a compilation and interpretation of the data we have to date. Today we're getting your input on how we'll proceed in the next steps, in the physical evaluation of site characteristics. The next step is to make a determination of whether Yucca Mountain is suitable based on the data we acquire and interpretations of that data. The next action is to submit a license application for the site. Suitability is intimately linked with licensability. Our activities and plans are very influenced by the relation of suitability and licensability. All our activities and your thoughts are aimed at

that. It would do no good to do a quick and dirty analysis to be shot down later because we hadn't been sufficiently cognizant of licensability issues.

As we proceed, there will always be uncertainty on the basis of our judgments, the need for judgment calls. We have inputs—you, the Nuclear Waste Technical Review Board (NWTRB), the Nuclear Regulatory Commission (NRC). But there will always be uncertainties: for example, variability in the geology of the site. One factor we must consider is the amount of uncertainty. How much work investment, time, money should we spend to reduce uncertainty to make judgments on suitability. We'll move from that basis and do additional work related to decisions to be made. We want your input on (1) how we make decisions under uncertainty, (2) the investments required to move forward, (3) how much future action to take, and (4) how to proceed, how to involve the parties. Are there any questions or comments on that?

PRESENTATIONS ON EARLY SITE SUITABILITY EVALUATION AND THE ESSE REPORT

Facilitator: Since not, let us move to the presentations on ESSE.

DOE: We'll give three presentations, the first on the origins of ESSE, the second on what occurred during ESSE, and the third on what we're going to do next. I'll pass around three handouts giving you the what, why, where, how ESSE got started.

(Gives presentation, "Introduction to the Early Site Suitability Evaluation.")

DOE Contractor: (Gives presentation, "The Early Site Suitability Evaluation.")

- Was the selection of peer reviewers left up to you and the team or were others involved?

DOE Contractor: I asked team members who they knew who could quickly come up to speed on the program, but had no previous involvement with the program. There was no special search. Selection was left up to me, yes.

- What about your guidance to the reviewers? Were criteria laid out for a consistent interpretation or were there no criteria? Were they generic or specific? The NRC lays out the criteria to ensure consistent application of the regs. We know that when generic guidelines are applied to a specific site, issues can arise. There are things unique to the site that might not be picked up by general guidance. How did this go into the peer review?

DOE Contractor: We didn't get to that level of detail. We wrote a peer review plan. We wanted peer reviewers who were qualified and independent. We wanted them to tell us if we had collected the right information, and if we presented it in an objective,

defensible way. We wanted them to tell us if the right information was collected. Have we presented the information in an objective way? Any of our biases creeping in? Some reviewers questioned our views, especially on 960 siting guidelines, and questions arose about how to interpret them. Some didn't like our views. You'll see that in their comments. We did that on a case by case basis.

- I have a question about the closure of issues that we'll be addressing in this group. Explain your recommendations on this and how you see the system fitting into development and management. For example, on the carbon-14 issue. It might be a way of finding out where some of the problems are.

DOE Contractor: These are meaty questions. Do we have sufficient time allotted to go into them?

Facilitator: We should finish the presentation and then move into that.

DOE: (Gives presentation, "Policy, Strategy and Plans for Site Evaluation.")

What we've tried to provide you this morning is a basis for discussion. Thank you all for coming. I look forward to your questions.

DISCUSSION ON ESSE AND THE ESSE REPORT

Facilitator: We have 40 minutes on the agenda for discussion. Again, our primary focus is on policy issues, not technical questions, and I invite you to speak on those issues and the documentation you were sent. Technical comments should be submitted in writing in order to obtain written responses. Focus attention on larger policy considerations. If people are interested in written comments on issues raised here, submit comments in writing to DOE. You'll get responses, but DOE does not intend to produce a comment-response document for this meeting.

- You'd better identify what's technical and what's policy and management. We have cross-references that are both technical and management. It can get confusing, and that would help shut down any questions. I'd like to carry through on my original question about the core team. In the report, about the core team and the peer team, I'm more interested in the core team, where the original decisions were made. I have suggestions. I'd like to hear more about the core team, what its job was, where it fits into the management and technical structures.

DOE Contractor: If I understand the question, my opinion—and I think the core team would agree—was that the core team had the task of providing DOE with our best judgments, objective assessments, of how Yucca Mountain stacks up against the 960 siting guidelines. We're just one part of the process. We tried to document what's on the record now and suggest how to proceed. Proceeding from there is what's on the table.

- I'm interested in how you view the closing of technical issues. Timing is key to the whole thing. What decisions should get made at a higher level?

DOE Contractor: My personal opinion?

- We're all supposed to give it.

Facilitator: We're going to make you give your opinion.

DOE Contractor: Closing issues should be open to the people here. We recommend that DOE lay out issues for resolution with the NRC. I personally support starting as early as possible to interact with your regulator.

The Composition of the Core Team

- One criticism raised about the core team was about getting experts in different fields and voting to reach a consensus. Each individual on the team was an expert in a given field. The question is, does the expertise of only one in an area lead the other nonexperts on the team to a consensus? Do you have suggestions about this?

DOE Contractor: This point was brought up in a couple of presentations we've made on ESSE, for example to the NWTRB and the Advisory Committee on Nuclear Waste (ACNW) of the NRC. Does a strong expert unduly influence the conclusions? Clearly they did. In some cases we had several experts, though. Unless you do a large-scale effort, with five-man teams in each area, you can't do much about this possibility. We relied on our experts, but strongly questioned them and had them reviewed by other experts. Still, it's clearly something you have to be concerned about.

- Thank you. I have some suggestions that I'll submit in writing.

Facilitator: One question for further discussion is this: what sort of questions are appropriate concerning future reports? Other questions include timing, procedures. Feel free to make comments. Other comments on the presentations?

- Were higher-level findings based on empirical or theoretical information? Computer modelling? There's been no testing at the Nevada Test Site (NTS) since the 1960s.

DOE Contractor: We used everything available: empirical data and computer modelling and judgment.

- How did you handle the issue of human interference?

DOE Contractor: Inadvertent intrusion was our focus. We didn't consider purposeful interference.

- Regarding the core and peer teams, you mentioned that most peer reviewers had no previous experience.

DOE Contractor: We tried to get expertise but avoid involvement, but a few experts we needed had been involved.

- How many members of the core team had worked on the Environmental Assessment (EA) in 1986 and were reviewing their previous work?

DOE Contractor: About half.

Public Involvement in ESSE

- It looked like about half were re-reviewing. The State has raised the issue of public involvement in ESSE. You're planning a Public Update meeting and you had a Federal Register notice, but what else do you plan?

DOE: Our only efforts have been the mailing, and the announcement of availability. We'll introduce the topic at our Project Update meetings on May 23, 24, 25. We'll report on it in our Technical Project Officer meeting, but that's just a status report.

- I have another concern about the public. Is the fact that this meeting is not being held in Nevada a conscious decision?

DOE: It was not a conscious decision. It's more of a momentum thing, something that was carried along on the momentum of the strategic principles workshops. We're following the same pattern. We wanted to meet in the center of the country. We understand that you want a meeting that affects Nevada to be held in Nevada.

- It struck me as difficult for members of the public to be able to find their way to Chicago when no meetings on ESSE were held in Nevada.

DOE: We're trying to get interested parties to get into discussions about it. Discussions, not meetings. We rely on Public Update meetings to involve the public; those meetings are focused on them. That's not the same kind of input.

- It certainly provides an opportunity for input.

DOE: We'll consider this in the future. A forum on an issue that affects Nevada should be held in Nevada.

DOE: There are ways. We look to update meetings—we ask people beforehand what topics to address. At the update meetings, we could gauge public interest and that could generate an additional workshop. We're always glad to take and respond to comments.

Terminology in the ESSE Report

● I have some Q and As for the DOE contractor. I found your presentation easier to follow than this phonebook-sized report on our table. Going to your viewgraph on definitions, I want to ask about how the core team used 10 CFR Part 960. In the left column, under disqualifying conditions—are those the words from 960?

DOE Contractor: Very close.

● The monosyllabics on the right. The core team developed those words?

DOE Contractor: 960 was written using legalistic terms, double negatives. We reworded it in a way that we as a group could use it and communicate with each other.

● After you took the legalisms and reduced them to the phrases on the left, why did you feel the need to reduce the stuff further?

DOE Contractor: Some of that comes from 960; "lower" was referred to as "lower." The guidelines give you levels of findings: 1, 2, 3, 4. The rest is a jargon we developed. We did this in the EA.

● I ask because words become extraordinarily important in highly controversial settings. DOE's casual wrap-up of the viewgraphs implied something this isn't—this is not a siting decision. You are nowhere near a siting decision, which is clearly defined by law. My understanding is that this is a management process. You are responding to a management request. Be careful with the use of terms like unsuitable versus suitable or higher versus lower. People can draw unwarranted conclusions about the purpose of this work. Keep in mind that you're providing managerial input. Scrub the document to avoid the appearance that it's something else.

DOE Contractor: Yes, we tried to be careful. In no way were we making findings. We had no authority or responsibility to make findings. We tried to keep clear that we're just giving recommendations as to whether conclusions could be supported.

● But the care that went into the Executive Summary can be undone by loose usage of terminology.

Facilitator: I agree that the implications of terms used in the report are very important. Are there other things to be avoided?

DOE Contractor: We didn't step away from the language of the EA.

● This document doesn't rise to the level of the EA, which was statutorily required and an—I'm not sure of the right word—adjudicable document.

- Would you identify a method for choosing experts for the closure/postclosure performance process?

DOE Contractor: Our specific criteria? We tried to have an expert to cover each of the 960 subject areas of individual factors.

The Composition and Objectivity of the Core Team

- I have a question on the way stuff relates to the core group. When information comes in, who actually decides what information is higher level, what is lower level, and what is unsuitable?

DOE Contractor: We tried to be a consensus-making core team. If all who voted supported the conclusion, we asked experts not on the core team to peer review. We tried to expand the number of people who could challenge us on a conclusion.

- Did members of the core team get the data or was it provided to them?

DOE Contractor: People on the core team are participants in the Yucca Mountain program. Probably 50% of the core team is on the program or involved as collectors of data and information.

- Did anything come up as unsuitable? What are the ramifications of that?

DOE Contractor: As a team, we said we didn't see anything that would weaken the conclusions of the EA. You had to have at least that lower level of confidence. We didn't see any unsuitable conditions.

- So nothing has ever been recommended as unsuitable? What would the ramifications be if something were unsuitable?

DOE Contractor: If we as a core team found evidence of unsuitability, we would make a recommendation to DOE, depending on the severity of the confidence level, the certainty of information. I assume they'd have to disqualify the site. It's a heavy burden, and we took it very seriously.

- Who assisted the core team in reaching consensus?

DOE Contractor: Core team members were DOE program participants. A consultant to SAIC, worked with me to help make sure that consensus-building was done properly.

- Were there any outside folks assisting in making that decision, who weren't DOE consultants?

DOE Contractor: We drew on many sources, including some sources published by the State-supported contractors, for example at the University of Nevada at Reno. We considered any information we thought relevant. All core team members were DOE contractors and participants.

- Regarding the findings of unsuitability, did the core team and the peer reviewers reach conclusions concerning the guidelines? For example, carbon-14 and the ability of the site to meet the standard? I want to follow up on the carbon-14 question.

DOE Contractor: Yes, the carbon-14 and the whole gaseous release issue was addressed by the core team. The core team recommended that work continue on the question of whether the standard is appropriate. We need more information on the site. Carbon-14 release is one of most serious potential disqualifiers. We don't have enough information to be sure what kind of retardation we'd get. That would be a critical site unsuitability condition, difficult to mend. We didn't think it's a significant problem but we recognize the discussion is continuing.

- Was the core team instructed to assess the adequacy of the EPA standards?

DOE Contractor: No.

DOE Endorsement of the ESSE Report

- One more question and then I'll let this go. Relating to the letters that we exchanged—answers you made on the issue of DOE endorsement of ESSE and DOE position paper on erosion to the NRC—this report documentation was used to support your position. (Displays outline of DOE topical report to NRC. Document was copied and made available to participants.) This conflicts with your proclaimed lack of endorsement of the report. Might you clarify the use of ESSE?

DOE: I've been listening with great interest to this dialogue. Let me draw an analogy between the point of origin in the big-bang theory of the universe and the ESSE report. The report is an analog of that point. We hold the ESSE report at elbow length, not arm's length—the core team consists of members of the DOE community. The report is the origin: it comes out of DOE. Its preparers have been part of the program for a long time, so we need to keep it at elbow's length. I've heard some concerns about bias from members of the core team who worked with the program. The next step in the evolution of the program is to get a team of independent experts to review the initial offering. Right now we make no judgments on it.

As we move to create the larger structure of the universe that evolves from this report, we have to make technical, management, and statutory judgments. It looks strongly that DOE can move toward the resolution of some issues on the basis of available data, make management decisions to resolve some issues and present them in a larger arena for

review by the NRC, the NWTRB, and the State of Nevada. They can evaluate our management and judgment of the technical information provided to us. Broadly, we have the evolution of a structure. We will review ESSE and make specific decisions about what site characterization actions to take to reduce uncertainty. Also, there are other areas, the opinions of the ESSE team, to move to issue resolution. We'll consider them. We want to move forward, but by what means? For example, we could submit topical reports on specific issues to the NRC for review. We have in the ESSE report the tiny speck that started the evolution into a larger structure and the interactions of the galaxy of our actions in this iterative process of making decisions.

- I may have gotten lost in a black hole. I conclude that ESSE does represent the official DOE view.

DOE: It most emphatically does not. We said, assess the site, and use peer review. All we've done is initiate a basis for future action. In the future, we'll interpret it. We could accept or reject the judgment of reviewers. We'll go from there. Actions, judgments will come from this. We may accept a judgment, but may reject another judgment to go for something else.

- Is that issue by issue as you agree, or not, with conclusions?

DOE: That's one option we'd like to put on the table for you to consider. There are alternatives. We could parse it by issue. But the various technical issues interact, so there are other ways to consider them. How might the decision process and the issue resolution process proceed? What options do you see? Which do you prefer?

- I'm still not clear. Your official position on erosion cites the ESSE report.
- In what form is this citation? How did they tell the NRC? By letter, by report?
- It's in a topical report on erosion rates submitted to the NRC on April 27th, which says we support the conclusion that it's not present. Has the process gone forward?

DOE: It has not gone forward yet. We haven't submitted a topical report to the NRC. This is rather premature.

Facilitator: We're scheduled to take a break. Our opening discussion touched on most of the topics. During the break, look at the suggested questions and the agenda and consider which questions you'd like to discuss. Remember we'll also have an opportunity for public comment.

SECOND MORNING SESSION

Issue Closure and Licensing

Facilitator: Any comments pending from the previous session?

- Regarding the "Big Bang theory" discussion, some point in time fixes the whole process.
- There has been a lot of talk and confusion about "closure" and "resolution." This could give people the impression that site characterization and licensing happen at the same time. Is issue closure part of licensing? This is troubling, if issues are being resolved or closed up in the absence of the EPA standard. As far as the siting guidelines go, there are problems with double negatives. For example, qualifying condition 2 in the rock-characteristics guideline says "repository construction, operation, and closure will not cause undue hazard to personnel."

DOE: The decisions are about resource allocation. Regarding licensing and closure, nothing is closed from the licensing perspective until the end of the licensing process. But it may be possible for management to decide that enough information about an issue is available and no further resource allocation is needed. From the resource allocation viewpoint, the issue could be resolved. We would look at the issue again when we get to the licensing stage.

- Do you discuss with NRC—that it complies with licensing?

DOE: Not necessarily licensing, but technical experts might say that we have enough data for issue resolution.

- Issue closure is part of licensing. Regarding issue closure, I don't understand the relationship between ESSE, the Site Characterization Plan, and the semiannual progress reports. If a higher-level finding can be made, the ESSE report says that the issue is not expected to be changed by new information. Yet the SCP lays out the studies that need to be done, and there are study plans. What do you mean by closure, by suitability and licensability, and how do the two processes come together? Do you review the SCP and study plans based on ESSE?

Facilitator: (Proposes a grouping of the questions attached to the agenda into three clusters. The group is unresponsive to this.)

- The "close issue" question is key—what does it mean? What is meant by "proceeding to close the issue"? There may be five or six different processes that could be used to close at different times.

- We're all asking what "closure" means.
- We all have our own ideas.

Facilitator: (Tries again to focus discussion on some specific issues.)

- Does DOE have any more formal presentations?

DOE: At the risk of muddying the waters on licensing question and terminology, let me try this explanation. Ultimately, DOE must produce two major documents. The first is an evaluation of site suitability, which is the basis for recommending the site to the President; this is the first major product. The second is the license application, if in fact the site is found suitable, the President concurs, and the process with the State and Congress proceeds favorably. If all that pertains, DOE submits a license to the NRC. The body of information in the two documents is very similar; in producing the site evaluation, DOE must be cognizant of licensing application, or the site will get shot down later. Once the license application gets to the NRC, the NRC goes into a formal process, and statutory findings are made. The NRC goes into a formal evaluation and makes judgments. Until then, nothing is closed. No issues are "closed" in a statutory sense until then.

The basis for our current activities is the SCP, which is mandated by the Nuclear Waste Policy Act and the agreement by DOE and the NRC on the scope of work to be undertaken. But the SCP does not say how much of each kind of work is needed. We have a lot of information in some areas and none in others. We have a billion dollars worth of data. The ESSE report is an interim assessment of what the data available so far tell us, and that becomes the basis for management decisions on how to proceed with further work on each area included in the SCP. An example is erosion: there may be a management decision that no new data are needed. The objective is to complete the information data base needed for suitability judgement.

In the near term, with ESSE as the basis, we need to resolve where and how much further effort is needed to gather information to support the site evaluation report and the license application. Thus we have management decisions and actions leading to a DOE site suitability finding and then go to the statutory process for resolving issues. Ultimately we will need for each area sufficient information for the site-suitability report and the license application and to defend the sufficiency of that information and the judgments in those documents. Does this explanation help?

- To some extent it helps, but it went into areas regarding licensing that may or may not be on the table. You can resolve issues with NRC at an early stage through rulemaking. The NRC is inviting petitions for rulemaking. If you feel you have enough information, you may decide to push with rulemaking.

DOE: Amen! We are moving in that direction. But how do we structure this? Do we want 42 different rulemakings?

- There are two types of issues. One is generic issues, not specific to the Yucca Mountain site, which could be addressed through rulemaking. An example is the design-basis accident. This is the type of issue that the NRC would like to address in a rulemaking. We do not anticipate resolving site-specific issues like volcanism through rulemaking. Earlier, in 1986, we looked at the possibility of rulemaking, and issues were considered. If you go to rulemaking, you must very clearly define the issue, eliminating much uncertainty. We are trying to focus on regulatory changes. Also, the earlier experience has been that, while a number of issues are possible targets, the difficulty lies in whether the individual issues can be broken off from the overall system. We haven't looked at this since 1986 (U.S. Nuclear Regulatory Commission, Approaches to Licensing a Geological Repository for High-Level Waste, 86-323, Washington, D.C., 1986).

Another item: you talk about DOE management decisionmaking based on ESSE. What step if any comes between the ESSE report and those management decisions? Do you have a process for deciding about site characteristics? Is there a step left out in the ESSE report?

DOE: I'm very mindful of the points just addressed. We are working to establish a process to address this. The issues in the siting guidelines and in 10 CFR Part 60 are not in practice either technically or interpretatively separable. How separable are these issues? How can you separate them in order to get NRC reviews? Seismic issues, for example, are very pervasive throughout the system. Regarding management decisionmaking, we are developing a management process to proceed toward issue resolution: the "engine of evolution." It consists of data acquisition, data interpretation, and management evaluation to revise the program if necessary. It is an iterative "convergence" process looking ahead at issue resolution. We have started this management process toward closure.

- I'm very interested in interactions between the State and DOE and the NRC's dealings with the State. The NRC in many ways kept aloof from the State and its problems. There needs to be a hands-on involvement—a joint involvement by the State, the NRC, DOE, even the public. I urge NRC to think about credibility. Why is the Center for Nuclear Waste Regulatory Analysis located in Texas? It belongs in Nevada. The jurisdiction lies in Nevada, not in Washington.

- The issue of closure is of great concern. One DOE person says it means decisions about data gathering—good management sense. I like the interpretation of "management closure", but the term "closure" still makes a lot of people uncomfortable. You need new and better terminology. Maybe you can come up with a better term; I don't have one. Another troublesome issue: if you "shelve" an issue, you need a mechanism for pulling the issue off the shelf if new data come along, to ensure that shelved issues are not lost.

DOE: Thanks, your comment confirms that we are using "closure" for two different things: end of effort or "management closure", on one hand, and statutory closure. Maybe we should use a term like "stop work" for the former, implying that resolution comes later.

- That would help me, but we still need a mechanism.

DOE: There is a mechanism, though it's not specific. When we stop work, then, to build documentation, we send it to the NRC and the world at large for comment—not seeking to close an issue but to have a vehicle for dialog. This gives the NRC a chance to respond, to agree or not. That's the mechanism for pulling an issue off the shelf.

- I think the question about a mechanism was, could there be a mechanism for looking at data each time a milestone is passed and going back to identify whether anything has changed? Too frequently you hear "that was resolved", instead of, "there may be new information out there".

- That is part of it. It may be addressed when we talk about future ESSEs.

- To say that something has been "resolved" is not what we're looking at.

- People see a lot of muddling. We are dealing with knowns and unknowns. Resolve that in-house and then put out a document that separates the knowns and shows why. From the citizens' view, ESSE should be an in-house document. A lot of it should be strictly between the contractor and DOE. DOE should take the recommendations, do its own evaluations, separate the knowns and the unknowns, and publish a new document, with public input.

There is a problem in trying to keep up with technical issues. You need to get your messages straight. For example, at one meeting I was told geology is the primary containment measure. At a subsequent meeting, this was contradicted: "the cask is the primary containment measure."

Facilitator: Document does have recommendations. The group seems to have reluctance about making various levels of findings. If you come to closure, how do you accommodate new information—those are issues DOE needs decisions on.

Definition of Convergence

- I want the Director to define "convergence"—without reference to the Big Bang!

DOE: Convergence is to produce a defensible site recommendation report and ultimately a defensible license application. To take all the things under consideration. (Shows slide.)

- Confusion persists. The ESSE document is good. However, the report doesn't say "recommended findings," it says "findings." ESSE uses words like "suitability finding." We're supposed to know that this is a finding by the core team. But most people won't know that. Finding by whom? Convergence by whom? By DOE, not necessarily by the State. It doesn't make explicit that the findings are those of the group that produced the report. Ability to agree on convergence happens when stuff is put out for formal review, in a rulemaking or licensing process. ESSE by no means indicates that anything has been resolved. A missing groundrule for these meetings is, by showing this at a very early stage, it doesn't commit this group in any way.

DOE: Including the Department!

- Don't you use "convergence" in a different way, to imply that everyone agrees?
- To carry it further, we're not "converging" in the Director's Forum or other meetings. DOE says that "we consulted with the State or affected governments," with the implication that everyone agreed or approved. The Section 175 report was not blessed by the affected governments. Nobody is converging on anything.
- With apologies to the DOE contractor, I see that the word "recommendation" does appear, but these recommendations are recommendations for further action.

DOE: ESSE is merely a basis for future action. We may accept and implement some recommendations, but there has been no action yet.

- You attempt to have it both ways. You have said that the ESSE report confirms that site is better than you thought.

DOE: I don't think so.

- What would happen with new information? In the nuclear industry, issues are reopened when new information comes along; for example, new seismic data shut down the Humboldt Bay plant. If there is a parallel, then DOE is always at risk that every issue will be challenged by new information.

Issue Resolution

- There is a parallel. New data will reopen issues. "Resolution" is always with the qualification "at this point in time."
- Generally, watch more carefully about the choice of words in documents.

- If DOE decides to stop work on an issue, where does this leave the affected parties if we don't agree? Suppose we don't agree—we don't have the resources to generate data ourselves. Are we left hanging out there when we don't agree about stopping work?

Facilitator: I think it's a given that DOE needs input for the process.

DOE: This gets into process, and we're seeking input on that today. At some point we will make a decision to stop work and convey it through some document, probably through a topical report, and seek broad comment. We will make the decision known publicly, give the basis for it, wait for comment, then change the decision if needed.

- What happens if you and the NRC don't agree on stopping work?

DOE: Extensive discussions. If we decide not to listen to NRC opinion, we run the risk that the issue will have to be resolved during licensing at greater cost and even the risk that the license application will be rejected.

- Do you mean a topical report as the NRC uses the term?

DOE: I don't mean "capital T", "capital R" topical reports at this point—we're still working on what the products will be.

- This is precisely the question that one participant was asking. There is a special relationship between the NRC and DOE. The NRC has no authority to stop work. Again, the only time you close an issue before licensing is through rulemaking.

DOE: In addition to the "topical report" option, we also have the semiannual progress reports. I'm looking for guidance on the best mechanism.

- Your first progress reports were way behind the actual work, though you did have other priorities. Are you up to date on the semiannual reports now?

DOE: We're trying to speed up. The concurrence process holds things up. Our current goal is to have them out within the subsequent 5 months.

- DOE fails to recognize that major resource decisions are made by Congress. I am concerned that the ESSE report will convey to the Congress that some areas need no further funding, and the Congress is very interested in cutting costs. I am concerned that with the ESSE report on the streets, the message is out. The Congress in reaction may take money out of budget. There is a need for concern about such potential consequences. Let's say that the ESSE says that volcanism is not an issue, the Congress may take \$50 million out of the budget. The ESSE process is too fast, the people too inexperienced, to go to the streets and send a powerful message on resources. How can you clarify exactly what ESSE is to the people making decisions?

Facilitator: This is a good point to break. It will be a good lead in to the topics we'll address this afternoon. We'll start off with remarks on the recent Senate hearings and then resume the discussion.

Any public comments? (None.) The discussion so far suggests we may need a glossary of terms.

FIRST AFTERNOON SESSION

U.S. SENATE ENERGY COMMITTEE HEARING

Facilitator: We'll get started. The first item on the agenda is remarks on the Senate energy committee hearing. Then we'll have time for discussion. The presentation will complement the discussion to take place. Then we can return to other topics.

DOE: I regret that you have to listen to me some more, but I know you want to know about this. I want to get into the background of the hearing: (1) what was going on in DOE prior to the hearing and (2) what was going on in Congress prior to the hearing.

First, within DOE. On December 31st, action was taken on a program-significant event by the Energy Secretary's Acquisition Advisory Board (ESAAB). ESAAB is made up of principal officers of DOE; its responsibility is to independently assess the viability of major projects and to provide construction and cost estimates. Its purpose is to make the Secretary confident that the foundation for the request for a project, for example the supercollider, is sound; it reviews proposed plans for projects. ESAAB can draw on independent teams, such as the ICE (independent cost estimate) team, for advice.

At the turn of the year, ESAAB reviewed the Yucca Mountain project and advised the Secretary that plans for Yucca Mountain are sound in that they make sense and that their cost estimates are sound. The cost estimate is \$6.3 billion—serious money—which includes \$1 billion already spent and \$1 billion for Nevada oversight. ESAAB found our plans soundly conceived and soundly estimated in terms of aggregate estimated costs. As a result, the program can proceed within DOE.

I had personal concerns with these circumstances. The program is soundly conceived and estimated, but we need to examine alternative ways to do it. We started to look at alternatives for progress within the program along the lines of our contingency planning discussions in the strategic principles workshop.

Our major concerns were four. First, high cost. Second, high potential for cost escalation. Third, this is a brand new enterprise to execute and manage. Unlike utilities' costs of licensing a reactor, we don't have established ways of getting a license. That led

to the concept of the engine of evolution; all of this must be brought together, managed effectively in convergence. We have to invent it—it's tied to the concept of the engine of evolution. We held a February workshop on effective management of the program. We are developing a process of data acquisition and evaluation, and we are making decisions on how to proceed, how to use information in design, a site evaluation report, the license application, performance assessment. Fourth, the program is constructed conservatively, is costly, and is oriented to a low-risk approach once in licensing review. It involves a one-stop license processing. This hurt our ability to produce tangible results. Because the NRC is very thorough, the program is front-loaded in costs and back-loaded in results. There are major milestones, but nothing happens for a long time until licensing, no results are produced for a long time. We must balance pace and investments with results. These are the concerns I had, looking at alternative strategies for program implementation and execution, risks versus results. I had these going into the March 31 hearing.

Second, Congress. Senator Johnston is the chair of the Energy Committee on Energy and Natural Resources and of the Energy and Water Development Subcommittee of the Appropriations Committee. In that hearing he was wearing his Appropriations hat, which is really what got him on the cost business, where he was strongly concerned on the cost aspect. The Senate just acted on a budget reduction, one of his principal concerns. For two hours, we dialogued with the senators on the program. Their key concern was cost. Something's got to be done. There was no resolution at the hearing, but there was a comprehensive airing of why costs keep increasing. In my opinion, the initial estimates of program cost in 1982 came at a time when none of us had any idea of what is involved. We were on a learning curve on requirements and the costing of those requirements. The Senate doesn't like those costs and the potential for escalation. The Senate hearing confirmed our prior concerns and made us scurry harder to find alternatives, change our approach to satisfy their and our concerns. Among the things we're considering are what we might gain and what we must retain—the fundamental thing is safety assurance, opportunities for NRC reviews to insure soundness of operations. Operationally, what will it cost to retain safety assurance?

Your participation in the Strategic Principles workshops made a valuable contribution to the Mission Plan Amendment. In December, we will issue a Mission Implementation Plan (MIP) on how we expect to execute the program. We're working on schedule and scope, and will present this in the MIP, but because of the Senate, we're working more thoroughly and sooner, because of legislative opportunities and the appropriations process. We'll go back to the Senate by way of 37 specific questions that resulted from the hearing. We're still in the process of producing our answers. Those answers will provide a basis for any action the Senate chooses to take. They revolve around our strategy for executing the program and the costs of that strategy.

One question we're addressing is how much work in this array of site characterization activities is required to produce the evidence that you need to determine site suitability

and to submit a license application? Currently, we have a bottom-up, comprehensive approach. Can we do a little less without compromising the safety floor? As a management approach, we'll look into the possibility of cutting back the site characterization program. But you must also recognize the higher risks of higher costs and perhaps failure in the licensing process later. It's one strategic option, but it doesn't change the process, including one-stop licensing, but it makes it riskier. It does change the risk-investment balance.

There are other possibilities. Keeping in mind the safety floor, could we change the weight, frequency, or substance of safety reviews? As one participant pointed out, you could close issues in advance of license application through rulemaking, but you would have rated-safety reviews instead of one-stop licensing. We're looking at the possibility of exercising that kind of strategic approach to the safety approval/evaluation process and closure, at the possibility of phasing and doing different things than presently conceived at each stop. For example, we're looking at the key issue of evaluation of safety of disposal. Now, we gather lots of data and make judgments about the disposal. We extrapolate how the system will behave in the future. The basis of the NRC's findings is all judgment and data base. We'll emplace waste in 20 years. Another possibility is, on a test basis early in the process, to put spent fuel in a limited arrangement to get data. We don't know if it can be done. We don't know if it'd be advantageous. We have no ideas of what the risks and the costs of the alternatives would be, but we are looking at them, pointing toward some results, basically for the Mission Implementation Plan. We expect results for the MIP and Congress on an expedited basis. We'll give feedback and consideration of options by means of our answers. We'll go back to Congress with the answers for their questions. We're looking very broadly at these concepts, blue-sky. We have no findings yet. There's the broad picture of how the hearing fits in with things.

- Intriguing. Would emplacement put you in a test program subject to EPA standards?

DOE: That's an excellent question. The standard has yet to be established and the regulatory framework is not in place yet. Could we do it in that kind of situation?

Budgets, Resources, and Alternative strategies

Facilitator: Prior to this meeting, policy and perceptual distinctions were offered. I ask the group for a reaction.

- To follow up on the 1993 funding, I understand that the NWTRB said you need \$600-700 million to make serious progress. What's happened with your FY 1993 budget request? If the money isn't there, will you have serious problems?

DOE: I can tell you only where the proposal is. \$6.3 billion is the estimated aggregate cost. ESAAB says its sound. The Secretary plans a license application in 2001, operation in 2010. It's the aggregated cost of where we are today. The appropriation

required to meet that goal is a \$1 billion budget request annually. But it would be political suicide to go in with that request. Johnston is working on a \$8.3 billion cut in the budget. A \$1 billion request would fly in the face of political reality. Without that money, the program has to slip. Some potentialities might be accommodated. Tomorrow we might find the tomb of the Aztec princess, for example. Alternatively, we can keep inching toward the reduction of uncertainty. Can't tell. A cut might be accommodated because we can't schedule the discovery of suitability. It's the rate of work and the effectiveness of the management process. We requested—remember that there's a 24-step budget process just within the Administration—\$392 million for FY 1993, and about \$243 million of that is for Yucca Mountain, to enable us to proceed with our present plans. At this stage, there are things we must do, go underground, get data, buy tunnel-boring equipment. We must have the block of money to proceed. It remains to be seen what judgments Congress will give us.

- Would the Nuclear Waste Fund be on-line or off-line?

DOE: One idea gaining credence and support in Congress is to take the program off-budget, to take the program out of all of DOE's zero-sum tradeoffs among all its programs. OCRWM is supported by dedicated monies from the Nuclear Waste Fund, which set up funding for services rendered. We're in a situation where the Act set up a contract that is intercepted by the budgeting process. It's not subject to surveillance if it's off-budget; this would give the program more credibility. Then Congress can make a judgment. It may be considered for FY 1993. I hope it does happen. It lets Congress get the money without emasculating another part of the Federal budget.

Test Emplacement of Waste

- Political considerations, not scientific considerations, narrowed the site selection process to Yucca Mountain. You admitted this morning in talking about the evolution of the universe that ESSE, the core team, are just a starting point and that ESSE still has a lot of unresolved questions. It sounds to me like you're suggesting that we move forward and make a leap of faith based on political and not scientific considerations. That we do this in a recession and send waste there now before the core team, or the public, can react.

DOE: Absolutely not! Three major site suitability issues that still have to be evaluated are hydrologic gradients, fast paths, and seismic activity. We must address these and all other issues. A fundamental question is how much evidence do you have to have to decide a management question? In the risk arena, you need scientific credibility and credibility in the regulatory arena. We could find in fact a fair degree of uniformity—with the uncertainty relatively small—and go into stop-work. We could find data all over the place and a lot of work left to reach conclusions on the technical parameters. We could be killed in the technical risk arenas if the work is not done, if we don't respect technical issues. The idea of putting waste into the ground to test safety could be a means of

improving our data base in the long haul rather than relying on our inferential data base. I don't know if we can do it or not. We're just considering whether it's useful.

- It does appear that you're taking account of political considerations and speeding things up. You've admitted that you have a starting point with your response to Senate questions.

DOE: We started down that path before the hearing. We're as concerned as the Senate is. Obviously it occurs in the political arena, but the fundamental question is what the nation is going to invest in safely disposing of waste. We certainly have to do it.

Program Costs

- Your first alternative is looking at cost versus risk. Much data in there is marginal data. It's an opportunity to reduce costs without affecting safety. Are you able to do these sophisticated analyses and calculations with reasonable assurance? Is it going well?

DOE: You need a tool to estimate the cost of proceeding, to estimate the effect of work and cost on uncertainty for particular parameters.

- We don't have a computer program to do that.

DOE: We have a prototype tool to do that. That's the function of performance assessment. There are two kinds of performance assessment. One is a model predicting repository performance based on standards, design, etc. The second is performance assessment in support of management of the program, supporting management, not safety assurance, which assesses the value of additional data to reduce uncertainty. We need it to operate the engine of evolution. A tool developed by EPRI is being evaluated for this use.

- Did I understand you to say you'll generate, for example, two, four, six, eight alternatives, and that you'll present a list of selected alternatives to the Senate and make recommendations?

DOE: The Senate operates on a more global level than that. I hope they get a broad background on program issues—safety, options, what issues are associated with cost, etc. How the Senate will go beyond that remains to be seen; I have no idea. Our Q and As will help fill that in a little more. It goes back to my confirmation hearing, when they said, "We want to see progress." They are concerned. The Senate is saying it wants to see progress. That's a political question; they do come together. We don't know what Congress will do. They probably don't know. We'll give them a basis for proceeding, however they interpret it. They understand the critical issues and the tradeoffs.

Test Emplacement of Waste

● Let me react to a proposal that I've just been made aware of. I encourage DOE to take a hard look at the WIPP experience in attempting to emplace waste early. In the long run, will you enhance or constrain activities? The next time you get ready to propose something like this, thoroughly consider the justification and need for this proposal. You admitted that there are a lot of uncertainties. It undermines public confidence and doesn't win acceptance. It is a very controversial proposal, and you'll get controversial reactions to it. It's unfortunate because it will undermine public confidence. This won't help you. For me, speaking as an individual, I say: good luck.

DOE: Let me emphasize beyond anything else that we are not compromising safety. We can only think of possible options, any reduction in site work. Anything beyond that would take legislative action. I say to you, all of you, that the time has come to look at alternatives. We are the point man in the DOE. We have a responsibility to identify the things to be done, the options for the agents of society, Congress, the NRC, the EPA. But action is not ours to take.

● Mentioning test emplacement built my confidence, as long as it is an R & D program and not a regular program, a test program separate from the rest of the program. I'd know that you have current, in-situ rock property data. You didn't mention how long this emplacement would be.

● Remember the Climax test mine experiment. Why couldn't data from that be used to bypass current testing?

DOE: It's a possibility. Why not?

● I'm confused about the processes you're concerned with. It's 300 years for the heat pulse and 1000 years before water attacks the waste package. How do you propose doing tests within our lifetime, or even the lifetimes of our grandchildren, to give us any more confidence than what's in our computer models? What's to gain in empirical data? Actual performance of the waste package in the rock won't give you much.

DOE: Do you really gain anything significant in data? Could you defer decisions to close the repository, for example for 50 years? Extrapolate judgments on open questions? Related to that, all key items in field performance to be evaluated start to develop in the first 50 years—kinetic, thermohydrologic, chemical effects. There is a possibility of benefit from actual service data.

● I have a different opinion on the idea that one participant brought up. In view of the makeup of the Forum, its purpose, it's a good idea to introduce here. If we want to be part of this thing, as long as we in the Forum understand it is one of many options, it's a healthy thing for issues like this to be discussed.

- My personal opinion is that it's a bad idea. For one, you just want to get in there and get things moving. Two, you told us in a meeting a few months ago that Nevada hadn't slowed anything down. But Watkins told ANEC that preemption legislation is needed because Nevada has obstructed the program, that Nevada's rights should be preempted. Resolve that contradiction. What's your view?

Facilitator: That's a little beyond the scope of this Forum.

- It is related to Congress and something Johnston said he'd like to get passed. A lot of people from Nevada are here.

DOE: I'm on record in many venues, including Congressional hearings, that it has impacted the rate of progress and on appropriations. I'm sorry if you carried away a misconception from the earlier meeting. It does fit this agenda, and is very timely, with recent events. ESSE provides a foundation for how to proceed. Things might be affected in the strategic approach. The strategy relates both to marching forward on ESSE and other activities relating to other strategic alternatives affecting those activities in terms of phase, sequence, and scope.

Facilitator: Let me remind people that this is an opportunity to offer comments and counsel to DOE. The Department's stance in the past has been to be a listener. I urge you to get your opinions on the record.

- About the idea of waste emplacement testing, years back there was a proposal to bring in waste and test dry casks in Nevada. It was refused, the idea died after negotiations between DOE and Nevada, and the waste went back to Idaho. The fear was that they were really trying to set up a de facto MRS. When you talk about this testing, it puts you in the same type of light. DOE's image is not conducive to public trust whether emplacement is technically feasible or not. The real question is on proving testing for 10,000 years.

Comments on ESSE and Yucca Mountain

- I have comments on ESSE, particularly on the process. The whole process is important, fundamental, and timely. Having a group of contractors and DOE personnel is also appropriate. It should be under DOE's control. It was an excellent job. I argue with the basis of the report. I felt that 10 CFR 960 was not the right basis for evaluations. It's ambiguous, which led to results that are also ambiguous. Selection of peers is always difficult and controversial, but you did a good job here; three conclusions were changed. The process will always be controversial. It's awkward to bring a team up to speed. I think here the question of time is a very significant one. The National Academy of Sciences and other groups have prestige, but they take a long time. NRC reviews can take a year or more. This was done quickly. This group pointedly mentioned a number of ways the process could be improved. The team has made

suggestions. I'm not sure what "qualified" means. It was not defined. One participant offered up excellent comments for improvement.

- It appears the Yucca Mountain site has been politically targeted. My tribe is downstream. We have not had an opportunity to participate as we do not have affected status. In reality, we're within the transportation route and would be affected if there were an accident. It's obvious to me that somewhere in the future waste will be emplaced by whatever means. We want to have assistance to be able to participate in transportation and other aspects of the program.

- We've mushed into another session. We've moved from the Senate hearing back to ESSE. Where are we in this meeting?

Facilitator: I suggested certain topics for the agenda and didn't get much enthusiasm. I thought we'd have some discussion on John Bartlett's remarks. Clearly there is a correlation between the DOE remarks and the questions raised this morning. I'd like to conclude those comments in the next 15 minutes, have the public comment period, then focus on the rest of the session. Comments on ESSE are not out of order, if that's your subliminal question. If anything, the issue of resource allocation is even more urgent. With input from the group, I want to get back to that.

- We'll talk now about broader issues raised.

Test emplacement of waste

- I'd like a clarification of where this test emplacement would be. At the Nevada Test Site?

- It should be an R & D program under the EPA, not a de facto MRS. Small, just enough to get data. It would have to be within a test program. The main concern is with the data that's most pertinent.

- My gut reaction is that the low-power license model you cite is that in that model too there are procedures, many steps to a license. Yucca Mountain is a site that hasn't applied to the NRC yet. The processes are not analogous.

DOE: One concept of interest is earlier than 2010 emplacement. I haven't talked about precursors. You must look at the entire process of assuring site safety. The next action is potentially to emplace; what do you do when and still maintain safety.

- My concerns are with the work we're losing at the Nevada Test Site. The best testing facility, the best place to study in the world is there. I submit to you that we're not taking advantage of that. They want to retrain us, but that's not realistic. How can you retrain our experienced people? We need the jobs.

● With respect to early emplacement, part 60 does not preclude emplacement for test purposes. In our Site Characterization Analysis (SCA), we question how DOE will get waste package data without putting canisters in there. You might have something simulating spent fuel, but not actually spent fuel. The alternative needs to focus on technical merit. The regulations contemplate all basic questions answered to the point where the NRC is confident: once a construction authorization has been issued, there will be a confirmatory testing. What is the benefit of 10-15 years of additional data? As to early emplacement, any benefit of getting data ten years earlier— is it going to buy you anything? Concerning low-power reactors, I agree with the bottom line. Basic questions are answered before licenses are granted by the NRC. No major issues are unresolved. I also have a question for the Director. Has the T & E (testing and evaluation) facility option from the 1982 NWSA been looked at?

DOE: That's one of the possibilities. But the technical merits, advantages need to be examined.

Facilitator: Presumably political questions as well. During the 1981-1982 debate on the T & E facility, there were political implications and there remains major political sensitivity. The political momentum is influencing the license process.

● On the same topic of alternatives, in the discussion on values, options, closure, there's a need for considering costs and other kinds of things going into the siting decision. It strikes me that you have to compare this to something else, the next best alternative. A siting guidelines paragraph in the ESSE report says you did not consider the costs of alternative technologies because the NWSA had made the point moot. But "other factors" include cost. But as compared to what? Your \$6.3 billion is a lot, but may be reasonable. I encourage you in considering ESSE, your own process, and Congressional considerations, to consider whether \$6.3 billion might be the most reasonably priced alternative. Get perspectives from Congress. ESSE is too constrained. Widen your perspective.

● There's an enthusiasm to find the site looking good, being good. We'd not be here if the site was crummy. Much hinges on that, the MRS, the nuclear energy option. Nevada is asking, "What are the fallback options?" I suspect that when people read the newspaper article, they see early emplacement as a fall-forward. There's no fallback. Therefore, we need the repository. Emplacement is a fall-forward, not a fallback. You're looking to have a suitable site. You're tightening the fence around the idea that the site can't be unsuitable.

Facilitator: This goes to the question of when and if DOE makes a higher-level finding. What are the implications?

● Our perspective of moving forward on early emplacement—and we're waiting to see the actual proposal—is that the people held accountable for the \$6.3 billion are not DOE

people, but me. I'm held responsible for it. The utilities demanded, along with the State of Nevada, something like the ESSE be done long before the Director was in the program. What we're learning, as the Director said so eloquently, is that the program as ESAAB approved it is frontloaded with costs and backloaded with results. Bills are mounting. Public utility commissions are asking utilities about the progress made for the money put in. How do you get earlier results, so that you've got confidence next year that the money spent on Yucca Mountain is spent in a useful way. You're asking ratepayers to foot the bill long before they see tangible results. I approve of the Director's trying to respond to that.

Facilitator: There will be an opportunity for comment from the public after the break.

SECOND AFTERNOON SESSION

The ESSE Report

Facilitator: There's an opportunity here for public comment. Any comments? (None.)

(Proposes that discussion proceed in half-hour segments organized around specific clusters of questions.)

Let's turn to the ESSE document. Would like comments from the group. Where should DOE go next? What other factors should be considered? At what point should the interested parties be involved?

- Regarding institutional concerns, have issues raised in the past been addressed by OCRWM? The mission plan amendment was good—issues raised were addressed. But the Section 175 report was not. For example, 7 comments on risk-perception impacts were addressed by DOE in a single paragraph. Was that enough? When should people come into play? I'm not clear about the document—what does it service? Also, why is this a Quality Assurance (QA) document? If a document is subject to QA, outside input is limited because changes need to be processed through QA. This is an embryonic policy document, one that walks a thin line between technical issues and policy, and it should have public review and comment.
- I don't see the report as a policy document. It's a status report, it's not a major policy document or a licensing document. The document had a QA check, but it can be commented upon. DOE puts out documents without considering public perception. DOE should have advised the public what the document is: a snapshot in time about site suitability. It's not a decision or licensing document, just a status report at this point. It says where we need more data gathering.

● I agree with earlier comments. The disclaimer disclaims DOE support. The report should note that it was commissioned by DOE, rather than saying that DOE is not responsible. If you stated that you commissioned the report, you could use it. The report should have said more clearly, "Commissioned by DOE—it's something we wanted, and here is what we plan to do with it."

● I think DOE probably said in some document that this document would be coming along. This is the most impenetrable program going. You start reading a program document and forget everything by the end. There should be some simple plan that lays out these steps and their purpose. DOE should put out such simple documents or plans early on. They will be criticized as too brief, but DOE needs to go that extra step. If your goal is to use this process to get input and to build public confidence, you need this extra step. The program needs to be debureaucratized so that ordinary folks who don't spend whole careers reading these reports can figure out what's going on. Another option was to go a different way: not publish the ESSE report. DOE didn't have to do this kind of meeting, but fortunately the Director and the Secretary decided to do this openly. This openness does leave them open to the criticism of being too complicated.

● We can handle complicated issues. This organization has no power, though it's useful as a sounding board. Think about giving more power to groups like this. The technical validity of ESSE will not be decided by this group. But this group can decide as a policy matter whether the ESSE should be accepted. DOE needs to empower this forum with some kind of structure and some kind of authority. (I agree that the amount of reading is ridiculous.)

● I agree with a previous comment—we have heard about the ESSE, but there is too much paper, too much information, too many documents. I was surprised when this document popped up—not that we didn't know, but it's hard to keep up. We need something like a management overview flow chart to help people orient themselves—even people in the program—so these things don't submarine up from the depths. Four to six inches of mail for a one-person office is a pain.

● I was another confused person. I wasn't expecting the report. Even though it's noble to release the ESSE report for discussion, it should have been done earlier. There is a lot of old and incorrect information in the socioeconomic section. We could have helped if we had met with DOE earlier. The same goes for the confusion about terms (closure, etc.). The Secretary of Energy's Advisory Board (SEAB) Task Force was concerned about trust, about the lack of credibility. They see the importance of involving the public early on. And I agree with one of the participants that this group should be empowered.

The Purpose of the Forum

- **The Forum is a means to bring issues to the public. I see it as a method for accepting this document.**
- **Is this the right time to deal with this issue? As a veteran of this group, I've been trying to explain to newcomers about this meeting. There is no definition for this meeting, very little agenda, we wandered from topic to topic. The strategic principle workshops were similar. This is not a standing organization with any kind of status. "Accepting" the ESSE document would require consensus, which is unlikely. This group couldn't agree on the color of a cup of coffee. One reason we're talking is that we don't need to reach agreement. It is a chance to hear others' viewpoints. Still, this late in the day I don't know the purpose of this meeting.**
- **I think DOE would be interested in involvement. You know that you have to lay out before God and the public everything you do. The problem of involving the public is the perception that the public has no involvement, that there are other groups in backrooms influencing decisions. How do you move a competent technical report to a public report that is accessible and is not political? That is the challenge. That's why I suggest that it could be done here or some other way.**
- **We're talking past each other on that. You say that the public needs confidence in the process. I say that these goals were met when this group met together. This is not a group of interests that come together easily; these are people who have been involved in litigations. There is a lot of confusion about this group: is it a standing group, what is the purpose of this meeting? We had some structure in the strategic principles workshops. It's not clear how this group is supposed to work, what are the questions we're supposed to pursue.**
- **I don't see this as a public meeting. It's not clear what this document is supposed to be, how it fits in the picture. How does this document fit with the Mission Plan Amendment? Should we look at the SCP? Those are action documents— documents that result in some action. It's hard to see what action comes from the ESSE.**
- **I'm also confused about the purpose. I looked at the draft Mission Plan Amendment to see what the purpose of the forum is. The draft MPA talks about public trust and confidence. It says: "We will establish a Director's forum for representatives of affected governments, interested parties, and members of the public. The forum will meet on a regular basis to exchange information and individual views on upcoming program decisions, policy alternatives, and the effectiveness of our institutional efforts.... The involvement of the forum in predecisional efforts will strengthen our ability to integrate technical, institutional, and managerial concerns about major program issues. The forum will be especially useful in helping us determine actions that can help build public trust and confidence." From the statement in the draft MPA, I assumed this would be an**

organization that is created and will stay in place, even though its composition will change. That would be important to us on a wide range of issues—the MRS facility, the MPA, predecisional input from external parties. DOE said that in the future, if there are Nevada issues, the group could meet in Nevada. DOE also said that, if the public shows interest in the ESSE, they will have a public meeting. Why not this one? Even if public doesn't show great interest, it's no reason not to hold the meeting in Nevada. A public meeting should be held where the public could come. A group like this is needed. It needs to get pre-decisional; maybe we should have met on ESSE a year ago.

- This has been a demonstration of openness by the Director and his staff. I applaud that, because there is risk in openness, you subject yourself to criticism. All parties at the meeting have their own agenda. It would have been easier not to hold the meeting, which was not required.

The document may be too technical for me and some others to understand. But I second a previous comment: it has value as a management tool. I don't view it as a final document, I view it as a management tool used to inform, to guide management. It's not perfect, but you won't get full consensus anyway.

Regarding whether the group should be formalized—that's OK if it's an advisory group, but I caution against adding another decisionmaking body.

- The group has to remain an advisory group. A greater role contradicts law. But I definitely think that the group is useful.

Facilitator: We seem to have a procedural problem. Some are raising questions about the forum, others are talking about the document. There seems to be agreement that the ESSE is a management tool, but there will be decisions based on this. Today is an opportunity for parties to offer comment about other kinds of input DOE should consider in making decisions. I suggest we focus the next hour or so on the ESSE document, then wrap up with comments on Forum future activities.

State Involvement in ESSE

- The executive summary said that the core team and peer reviewers were charged with considering all available information—the environmental assessment and all subsequent information. Looking at the references listed in the report, I failed to identify significant contributions from work done by the State of Nevada. To what extent did the core team and peers have access to Nevada work?

DOE Contractor: We reviewed anything we thought contributed to our understanding. We offered the actual references to the peer reviewers. There are eight to ten citations of State materials.

- That's encouraging, but I sense that's not a large percentage of State work. If you look at the references, you see no references labeled "work sponsored by NWPO." My sense was that the NWPO work was virtually ignored, millions of dollars of work virtually ignored.

- As someone who deals with NWPO work, I agree. The loop is closed. Also, the State could have suggested peer reviewers. This raises public confidence issues, the process was not as open as it should have been.

- Any coordination in information exchange? Is there some place where information from all sources is available? This could save taxpayer money.

- All State-produced documents are available at several centers.

- Is the information from all sources fully and easily retrievable in an integrated manner? There could be a required literature search.

DOE: That was not a grant requirement. Our own information base is all on one system.

DOE Contractor: I did call several people employed by the State, but they did not think that their involvement was appropriate.

Peer Review

- Was any attempt made to contact the State office to ask about peer reviewers?

DOE Contractor: No.

- If studies like ESSE are to be a management tool and are to be used in the budget process, the evaluation process is taking too long to be useful. The same is true of the work done by Golder. The purpose of peer review is to give key decisionmakers more confidence on major issues—they know they are using information as good as it can get. It also serves the purpose of giving the public, and others, more confidence. The problem is, it takes time. To be a useful tool, the evaluation must move quickly. We have suggested creating a dedicated group to do on-going analyses. Then you need to figure out how to do peer review without killing schedules. I'm concerned that if we proceed like this in the future, we won't be able to do more than two of the ESSE-type studies before the license application.

Facilitator: Some questions have been raised about the ESSE report being used to make higher-level findings. I encourage further discussion on such questions.

- Regarding peer review, the report took two years, while the peer review took two months. So peer review is not the problem.

DOE Contractor: Actually, the writing took only about 3 months.

- When was the core team charged?

DOE Contractor: In January 1990.

Purpose of the Forum

Facilitator: What should DOE do next? Any questions? (None.) What about higher level findings?

- Does this group meet the requirement of consultation with the State? As a member of the legislature, I don't consider this as consultation. Does this meet your requirements? What is your agenda? We don't want another stratum.

DOE: The group is not intended to meet any specific requirement. The MPA description is valid.

- So DOE's official position is that this is not consultation. What about cooperation?

DOE: This is not consultation and cooperation in a formal sense. Participants are not speaking on behalf of governments, and not for consensus. You need to bear with us for coming to you early in the process. You have to take with this that not everything is worked out.

DOE: Our Technical Project Officer meetings have discussed ESSE. They are informal C&C meetings. In the update meeting next week, we'll have a poster session on ESSE. I did not clearly explain this earlier. If we get a lot of interest in poster session, we will consider doing more, holding a meeting on ESSE. These are informal C&C meetings.

- If this group is a sounding board, ideas must be "virgin." The early emplacement idea is already in the newspapers. If you're thinking about new ideas, come to groups before the ideas are out in the public arena. If we read about them before you tell us, our views have already been affected. Catch issues truly in infancy, not way downstream in the thought process.

- I think this is an important document and an important subject. The site looks pretty good, more than I would have guessed. The report is hard to read not because it's badly written, but because the topic is difficult. One thing that is important in ESSE is the tabulation of important issues. Another idea to consider is to appoint a science manager, which is parallel to a recommendation made by the National Academy of Sciences.

- The public really needs access to information, be it ESSE or early emplacement; it's good to maintain openness with the public. The public has a right to know what the studies are saying. It's good to bring information to the public. I don't think the documents are impenetrable; they are tedious, but not impenetrable. I encourage you to maintain openness.

Facilitator: Should people in this group have been involved at an earlier stage of ESSE or of subsequent similar efforts? Should this group be involved in some sort of scoping meeting?

- Again, I hope this group won't always be seen as reacting to things already done. I envisioned that we would get together, DOE would propose some key issues, the group would counter with ideas of its own, and together we would scope out an agenda for the next year or so.

- I see this as a kind of focus group to review a range of ideas proposed by DOE. The group is not appropriate for reviewing documents after the fact.

- I concur. But the group also needs to have opportunity to lay out issues they think important and to get DOE's attention. I like the chance to have certain times of the year to have the Director's attention to address issues the group is concerned with.

- I'm not sure our organization should be part of the group. I don't know what you want to do with this, who pays for it.

- Need to decide what "it" is.

- Do I get to help decide?

- Some of us disagreed with the MPA description of the group. DOE called around to ask for opinions about proceeding with the forum, and then we got the invitation letter. If you want to create a standing body, you have to do some things differently. You might have to do the group under Federal Advisory Committee Act (FACA).

Facilitator: We decided not to do the strategic principles under FACA, to avoid constituting a standing body, but that was a temporary project.

- Are we here for the Director, or is the meeting for us? Who is the show for? To serve the Director, or for us to hear things? We were given a viewgraph presentation, which suggests a presentation to us, but then we're asked for input. There are more supporters here than adversaries—can this group give a broad range of opinion? Depends on what you are expecting from the group. Take closure, for example. I know some who would agree and others who would emphatically disagree. Maybe this was not clearly enough defined in the beginning.

CONCLUDING COMMENTS

Facilitator: Now let's give the participants a chance for concluding comments, then maybe some thoughts on future meetings, agendas, topic for the next meeting.

- I feel communication is so critically important to the whole process. I hope this is for both the Director and the participants. It could resolve a lot of problems.
- It's a good idea to have a sounding board like this. This is good.
- I am an advocate of public participation, and I encourage continuation of the dialogue. You need to address the comment on who participates and under what conditions, if any.
- I understand the NRC will be 30 days late on its ESSE comments. Will DOE allow a similar delay to others?
- I second the comments on the importance of dialogue. I'm also concerned with the amount of paper we are being inundated with—ESSE, semiannual reports, annotated outline for the license application. I think there's a purpose for these documents and relationship between them. Until this is clarified, I am not sure that the program will move ahead, or focus on the difficult issues.
- The dialogue is good, but there is a contradiction between this process and preempting Nevada's authority.
- The Nuclear Waste Technical Review Board has been very effective with technical issues. This group can pick up some things proposed for the NWTRB. It has been suggested that they should broaden their focus from technical issues, but this body could do that. DOE should clarify what you want to do with the group, or the group should. Regarding agenda, it was informal or loose, but the facilitator repeatedly tried to focus on questions, tried to steer meeting, but we avoided taking direction.
- We were handed an agenda, and were asked not to talk about technical issues, but the presentation dealt with technical issues. One key issue is carbon 14. That issue was ignored, even though it may prove very costly for society. That would have been an appropriate issue to address. What we had was kind of a shotgun approach.
- The key players are here, and I like this as a citizen. Should consider a charter for an ad hoc or standing committee. Get the group together earlier to define objectives, rather than after the contract is let. Get public input before the report is written. I'd like to see the meetings be open. The obvious missing person is the public. Also, hold meetings in Las Vegas. Continue with the committee as an advisory committee, but let it be

involved before the contractors write the report. Get in early and take the brunt of the arguments up front, and maybe you'll save some money in the long run.

- ESSE is a good document, and it should be repeated in about 18 months. Early emplacement is a bad idea. The Forum is good; it should remain advisory rather than decisionmaking. The program should be taken off the budget.

- I'm new to this, here to pick up information for the council. The meeting was very informative.

- Should findings be formalized? No. Issues should remain open. When should the next ESSE be done? It should be done when project milestones come up. I agree that the process must be fairly rapid, but that doesn't preclude peer review. The State and affected units of local government might have enriched peer review; transportation peer review was weak because of the absence of their involvement.

- I appreciate being included. I didn't bring much, but hopefully took something from the experience.

- I compliment the Director on having the group. The forum was useful, communication is good. We would have benefitted from earlier input. Two-day meetings might be better: one day for policy, one day for technical issues. The group should take up the challenge of suggesting topics. Please continue the Forum.

- My compliments to the ESSE authors. Jean Younker deserves a lot of credit. This type of effort will lead to program success. I don't think formal findings are a good idea. They become an end in themselves. That will be done later, at one time only, but DOE should begin closing out issues. There may be a difference between issue closure for the site recommendation report and for licensing. The NRC must be ready to accept petitions for rulemaking on site-specific issues; Commissioner Rogers and Chairman Selin said so. This is for future planning.

I opposed the concept of the Forum when it first came up and still think that there is a lot to be said for a less formal arrangement. But if DOE and others want it, we will continue to participate. DOE must decide what the Forum is, what the rules are, and then run it that way. The public can come if it wants, but Nevada is not the only place for these meetings. If this group is to help the Director decide on various issues, then many issues will be outside Nevadan interest.

- I gave my technical comments to the DOE contractor. My main concern, having seen many DOE studies, lots of money, is the challenge of how to use these studies most effectively to determine what is most important—most important to public health and safety.

- **Meet in Nevada.** This is not a public forum. The meetings should be in an easily accessible place. If the meeting is for 9 hours, meet noon to 9:00 with a dinner break, so the public can attend. I have no criticism with the ESSE job, but was it the right job? How about more on bad news about Yucca Mountain? There are folks in Nevada who would love to talk with the Director about conditions at the site that are not so rosy as the ESSE suggests.

- **The invitation letter implies there will be more meetings.** This has been a good beginning, a good learning process for me. I can't know if it was of value to the Director. Who should attend future meetings probably should be left open depending on topic. Whether it's the same group or another group, the idea of the Forum is a good idea. The dialogue should continue.

- **Meetings should be held in Nevada, and the public should be given a chance to speak.** There is very little trust and confidence in Nevada. I learned a lot.

CLOSING REMARKS

DOE: I always learn a lot at these meetings. Thanks for being here, and for the integrity of your comments. This is the first; I hope we will do better in the future. The strategic principles workshops aimed at public participation in the development of strategic principles for the program. The Director's Forum is aimed at providing participation in the strategic aspects of program implementation. We are still trying to decide when and where to involve the Forum. This was the "basis for action" phase. It could have been held earlier, at initiation, or later, at the "plan for action" phase. The phase we're at now is the basis for action. Out of it will come program plans—from your input, public comment, our own evaluations. These will include budget allocations, etc.

The Forum should always be informal. I heard some suggestions that the group should be involved at the initiation stage. These meetings are very costly in terms of time and resources. The initial phase for the ESSE was September 1990. We could have done the whole ESSE process without participation. I elected to follow a process for thorough development and peer review.

Let us know after this session at what stage you prefer to have the Forum become involved with issues: (1) initiation, (2) basis for action, (3) plans for action. I want to make the process useful and effective. This is always a very good learning experience for us, thanks.

Facilitator: Because of the topic, we didn't have much time to discuss the Forum itself. The Director has asked you to write in, and we may follow up with a questionnaire on this. Thanks.

FINAL

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CHICAGO, ILLINOIS
MAY 7, 1992**

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Ramada Hotel O'Hare • Chicago, Illinois

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