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DIST.ASSELSTINE REMARKS

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OCT 17 1986

MEMORANDUM FOR: Those on attached list

FROM: Alma Hale, Project Manager  
State/Tribal Participation

SUBJECT: REMARKS BY COMMISSIONER ASSELSTINE AT THE STATE/TRIBAL  
QUARTERLY MEETING IN PORTLAND, OREGON, AUGUST 13, 1986

A copy of remarks made by Commissioner James K. Asselstine concerning the DOE implementation of the High-Level Radioactive Waste Repository Program is attached for your information. Commissioner Asselstine was the luncheon speaker at the Quarterly Meeting of the potential host States and affected Tribes held in Portland, Oregon on August 13, 1986. DOE Headquarters and Project personnel were in attendance.

*AS*

Alma Hale, Project Manager  
State/Tribal Participation

Attachment:  
As Stated

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Quarterly Meeting with Affected Indian Tribes  
and Potential Host States on the Implementation  
of the DOE High-Level Radioactive Waste Repository Program

Remarks by

Commissioner James K. Asselstine  
U.S. Nuclear Regulatory Commission

August 13, 1986

Good afternoon, ladies and gentlemen. It is a great pleasure to be here today to participate in this quarterly meeting with the affected Indian Tribes and potential host states on the nation's high-level radioactive waste repository program. I believe that this meeting is of particular significance in light of the Department of Energy's recent decision to recommend the Yucca Mountain, Nevada; Deaf Smith County, Texas; and Hanford, Washington, sites for site characterization for the first repository; the President's approval of that recommendation; and the Department's announcement that site-specific work for the second repository has been indefinitely postponed and that previously designated sites are no longer under active consideration for a second repository. As you know far better than I, these decisions have proven to be extremely controversial. They have spawned numerous lawsuits challenging the adequacy of DOE's analyses and determinations concerning the first round sites and the indefinite postponement of work on the second round sites. In addition, they have resulted in efforts in both the House of Representatives and the Senate to impose a moratorium on further site-specific work on the first round repository sites. In my view, these decisions and the ensuing controversy have brought us to a critical juncture in the high-level waste repository program. How we deal with these difficulties can have a

significant bearing on the prospects for success or failure in developing a safe and environmentally acceptable solution to the waste disposal problem. I want to share with you some of my thoughts on what might be done to resolve this current controversy and to restore a credible, objective and technically sound repository program. But before I turn to that subject, I want to discuss some of the more significant challenges that we face as we move into the licensing process for the first repository, my perceptions of how well we are meeting these challenges, and what might be done to better improve our performance. To appreciate some of these challenges, one must understand the basic features of the repository licensing process. So I will begin with a few brief comments on the broader features of that process.

The first of these broad characteristics is that the repository licensing process will be very similar to the present licensing process for nuclear power plants in this country. Thus, we envision a two-stage licensing process, with the first stage preceding an authorization to construct the repository, and the second stage preceding repository operation. We also expect that this licensing process will employ on-the-record adjudications similar to the formal licensing hearings used in the reactor licensing process. Under this approach, DOE will bear the burden of demonstrating that its application meets the applicable legal requirements, including the Commission's regulations; that its proposed site is adequate; that it has adequately considered alternate sites, and that the repository can function safely and effectively for the long periods of time contemplated by the Commission's technical regulations. Given the long periods of time that a

repository must function effectively, the many technical uncertainties and unknowns in this area, and the first-of-a-kind nature of the repository, this is not an insignificant burden. DOE's key judgments, and the technical basis for those judgments, will be exposed to careful scrutiny, and the opinions of its scientific experts will be tested by cross-examination.

As we have emphasized repeatedly in the past several years, the outcome of the formal licensing proceeding will depend heavily upon the quality of DOE's license application, including especially the data and experimental results supporting the application. Assuming a complete, high quality and well supported license application from DOE, we anticipate that the license proceeding leading to the issuance of a construction authorization could be completed in three years. On the other hand, a flawed and poorly supported application could lead to a much more extended licensing proceeding, and could eventually lead to rejection of the application. I should also note one difference between the repository licensing process and our current licensing process for nuclear power plants. Unlike the reactor process, our procedural regulations for repository licensing do not contemplate the use of a limited work authorization. Thus, construction of the repository could not begin until the successful conclusion of the construction authorization hearing.

The second basic characteristic of the repository licensing process is the timing of the formal license proceeding. The Commission has divided the licensing process into two separate, but related parts. The formal

proceeding will not begin until DOE submits its application for a construction authorization. Under the current schedule, DOE anticipates that this would be in the early 1990's. Prior to this formal phase of the licensing process, the Commission has intentionally left the process very informal. During this informal phase, we will monitor, review and comment on the work being done by DOE in preparing its application. It is worth noting that during this informal phase, DOE will be doing most of the work, including site selection and characterization, choice of waste form and packaging, and technical research -- which will ultimately determine the success or failure of its license application.

This early, informal portion of the process is really a two-edged sword. On the one hand, it provides the broadest possible opportunity for the free exchange of comments, concerns and suggestions by our staff, DOE and interested parties such as the potential host states, affected Indian tribes and members of the public. If vigorously pursued, this informal approach can work effectively to identify most, if not all, of the key technical concerns which must be decided in the formal licensing phase. This can lead to a more complete, high quality application which anticipates and addresses the issues of greatest concern. On the other hand, the more informal approach limits our ability to require DOE to address the issues of real concern early on. If DOE fails to heed the early warnings, the consequences may not be readily apparent until it is too late.

With that introduction, I want to turn to a discussion of the potential pitfalls which face us in the repository licensing process. I see four potential pitfalls which could have a significant impact on the timing and outcome of the licensing proceeding for the repository. Not surprisingly, the first and foremost of these in my mind is the possibility that DOE will not submit an essentially complete, high quality application for a good site, which is supported by the information needed to address the key technical issues in the licensing hearing. I have already described the potential consequences should this occur, and I won't belabor the point. Suffice it to say that I view this as the single most important element in determining the success or failure of the repository program.

The second pitfall I see is the failure to resolve differences among the various federal agencies with responsibilities for the repository program. The most obvious example here is the complimentary, and to some extent overlapping responsibilities of NRC and EPA. Another example is the preparation of environmental impact statements (EIS) by the Department of Energy and the NRC for the proposed repository, including the difficult issue of NRC adoption of DOE's EIS.

The third pitfall I see is the possibility that there will be sharp divisions within the scientific community on the key technical issues in the repository licensing proceeding. Such divisions will make it very difficult to reach a timely licensing decision, and will very likely lead to a protracted hearing.

The final pitfall I see is the emergence of strong and concerted opposition to DOE's application by the potential host state, affected Indian tribes and the public. Even if the site proposed by DOE survives the Congressional review procedures established by the Nuclear Waste Policy Act, concerted state, tribal and public opposition to the project in the licensing process could well lead to a protracted and difficult hearing.

What can be done to avoid these pitfalls, or at least to minimize their potential impact on the repository licensing process? In my view, several things can and should be done now to address these potential problem areas.

With respect to the NRC and EPA regulatory responsibilities, I believe that problem is largely behind us. EPA issued its final environmental standards for high-level waste disposal last year, and the NRC has proposed amendments to our technical regulations to ensure that they conform to the EPA standards. These conforming changes include a set of performance and assurance criteria which are designed to ensure that the EPA standards are met. These performance criteria were agreed to by the NRC and EPA staffs, and have been issued for public comment. I believe that the public comment period will close within the next several days, and the Commission should be able to complete action on this item in the near future.

With respect to the DOE and NRC EIS responsibilities, Section 114(f) of the Nuclear Waste Policy Act provides that the NRC, for licensing purposes, shall adopt DOE's EIS for the repository application "to the extent practicable." The Commission is now considering a set of options

identified by the NRC staff which would define how and when the NRC would make its decision on adopting all or part of the DOE EIS, and which would describe the impact of that decision on the opportunity to litigate environmental issues in the repository licensing proceeding. The legislative history of this provision of the Act is somewhat limited, and the Commission's decision on this issue could have a significant impact on the opportunity to raise environmental issues in the licensing hearing. Apart from these two instances, we should look out for other potential trouble spots where the jurisdictions of two or more agencies may overlap.

As for reducing the potential for concerted state, tribal or public opposition during the license hearing, DOE simply has to learn to work more closely with the affected states and Indian tribes. I was troubled by the fact that DOE was unwilling or unable to do more to address the concerns of the potential host states and affected Indian tribes on the repository site selection guidelines. And I saw problems in the reactions of the affected states and tribes to DOE's draft environmental assessments for the first round repository sites. The state and tribe concerns do not appear to be satisfied by the final environmental assessments. What is disturbing is DOE's apparent inability to address at least some of the state concerns about the adequacy of DOE's site selection process and criteria, and the adequacy of the information on which those decisions were made. I view these concerns on the part of the states and affected Indian tribes as being of a quite different character than the more general view that "we don't want it here." DOE must find a formula for at least considering, and

hopefully addressing, these more technical and programmatic concerns by the affected states and tribes.

One approach that has proven helpful, in my view, is the use of more informal meetings to keep the states and tribes informed of what is going on and to solicit their views. Our staff did this before the NRC submitted its comments to DOE on the draft environment assessments for the first round sites, and we routinely open our technical discussions with DOE to outside participation. However, for such informal, preliminary exchanges of ideas to be truly beneficial, the states and tribes must be allowed to be active participants and not just observers. I have been concerned by reports that participation by state and tribe representatives may have been limited in some technical meetings, and I have raised this point with DOE. When I raised this issue, DOE agreed that state and tribe representatives should be active participants, and not just observers. Although DOE is expanding its use of this type of informal exchange, I believe there is considerable room for further improvement.

As for assuring a high quality application and avoiding sharp divisions within the scientific community, there are several steps that DOE should take. First, DOE must learn to take a critical and pessimistic approach to site investigation. A key element in this approach is to recognize that there are potential problem areas with each site, and to identify those problems early in the site investigation process. In the past, DOE has tended to view the sites under investigation very optimistically, and to ignore or discount potential problem areas. We cannot afford to repeat

that mistake. Once the potential problem areas have been identified, DOE must embark on an early program to do the testing, and to gather the data needed to understand the nature of the problem and to assess the acceptability or unacceptability of the site.

The NRC staff's comments to DOE on the draft environmental assessments for the first round repository sites indicated that DOE was still taking an overly optimistic view with respect to the problem areas at these sites. The staff found several instances in which DOE had not considered some available, but potentially negative, information about these sites, or in which DOE had not given recognition to the uncertainties involved in our present state of knowledge about the sites. In some instances, our staff reached much more pessimistic conclusions about the potential problem areas at these sites than did DOE, based upon the same information considered by DOE.

If it is to avoid potentially disastrous consequences down the road, DOE must increase its efforts to identify, understand and address the most significant technical issues for each site, and begin building a consensus within the technical community on each of these items. A key element in building a consensus is the ability by DOE to explain its methodology and to present the information needed to defend its analysis and conclusions. Here, again, the draft environment assessments for the first rounds showed the need for improvement in DOE's efforts. As our staff pointed out in its comments, DOE did little to explain its methodology for doing site comparisons in the draft environmental assessments. Moreover, the draft

assessments contained only limited identification of site-specific problem areas, and limited site-specific information. For example, a review of the post-closure guidelines portions of several of the draft environmental assessments gave the impression that much of DOE's analysis on the key issue or repository performance was little more than boilerplate language that would apply to every site under consideration. What DOE must be able to do to meet the requirements of the licensing process is to describe how that information, and its methodology for site comparisons, are used to reach reliable results. Without that, developing a consensus within the scientific community on the key technical issues will be difficult, if not impossible.

I should note that our staff is now in the process of reviewing DOE's final environmental assessments for the first round sites, and is scheduled to report to the Commission on the results of that review next month. How well DOE addressed our concerns, and those of the potential host states and affected Indian tribes, will be a good indicator of the prospects for the ultimate success of the repository program. Although our review is still ongoing, it appears to me, particularly given the strong reactions of the states and tribes, that there may still be some serious open questions regarding the adequacy of the final assessments, including their treatment of the site-specific problems, the level of available information on some of those problems, and the adequacy of DOE's site comparison and site selection methodology.

I should also emphasize that the need for a forward-looking program to identify and resolve the key technical issues in repository development and licensing is not the exclusive province of DOE. We must pursue the same goal in our pre-licensing review. Our staff has undertaken a number of initiatives to enable the NRC to identify and address key issues early on in order to make the litigation of issues in the formal licensing hearing go more smoothly and be meaningful. These initiatives include: the development of a licensing support system to manage the extensive information base that will be developed during the licensing process; the possible use of rulemaking to resolve generic issues early in the process; the use of partial initial decisions in the licensing hearings; and the development of an issue management and tracking system for key licensing issues. If these initiatives are to work, we will need the support and acceptance of the potential host states and affected Indian tribes. I believe that our staff is working with you to obtain your advice and suggestions on the usefulness and acceptability of these or other possible efforts to make the licensing process operate more effectively and efficiently.

DOE must also apply a rigorous and effective quality assurance program to its site investigation and research activities. This is crucial to DOE's ability to demonstrate the validity of its findings and analyses in the repository licensing hearing. As many of you probably know, quality assurance has become a major source of uncertainty in the licensing process for some nuclear power plants, and where quality assurance breakdowns have occurred, questions concerning the adequacy of plant design and

construction have proven very costly and difficult to resolve. Clearly, this is an area where we cannot afford to repeat past mistakes.

Certainly, the steps toward developing a repository, such as site characterization, are in some respects quite different than the steps for a reactor. Moreover, the greatest technical challenges in the repository area may well be in assuring quality information in the site investigation and repository design phases, rather than in the construction phase. However, there are also similarities. Just as in the reactor area, repository development will be subject to a high degree of public concern and scrutiny. Quality assurance will inevitably be a component in the Commission's licensing decision and could well be at issue in a formal licensing hearing. Moreover, the consequences of a significant quality assurance breakdown in the repository program would be disastrous. At the same time, the sound management practices that can lead to successful quality assurance in the case of a reactor are equally applicable to repository development.

An effective quality assurance program is an essential component of a successful repository program, in the areas of information acquisition, site investigation and design, and subsequently in repository construction and operation. Quality is a line management responsibility. It cannot be delegated to a separate group of quality control inspectors; nor can it be delegated to the NRC. A quality assurance organization is an essential monitoring tool, but it is not a substitute for day-to-day involvement by management in all phases of the project. It is not too soon to put these

lessons that we have recently learned in the reactor area to work in the repository program. I am pleased that in recent meetings with the Commission and the NRC staff, DOE has recognized the importance of quality assurance and has committed to having fully qualified QA programs in place before the issuance of site characterization plans. However, I believe that the recent stop work orders affecting work on the Nevada and Washington sites indicates that DOE is still experiencing difficulty in developing and implementing an acceptable QA program.

I now want to turn for a few moments to the current state of affairs in the repository program as a result of the recent decisions on the first and second round repository sites. Put simply, it seems to me that the repository program is in disarray and that the prospects for success are in serious jeopardy. I remain convinced that the Nuclear Waste Policy Act provided a workable framework for developing a safe and environmentally acceptable system of repositories, but I fear that these recent decisions, as well as the manner in which DOE has elected to implement certain features of the law, are undermining that framework and sowing the seeds for possible failure down the road.

The decision to postpone indefinitely site-specific work on a second repository threatens to upset the delicate regional balance that was struck in the 1982 Act. As a result, the debate in Congress is becoming increasingly polarized. Representatives of the western states are making repeated efforts to impose a moratorium, either for a specified period of time or indefinitely, on site-specific work on the first repository. This

east-west debate is fueled at least in part by concerns that political considerations may be prevailing over technical judgments in making siting decisions in the repository program.

DOE continues to adhere to a schedule for the first repository which is looking increasingly unrealistic and which raises legitimate concerns that DOE may be unable to do a thorough job of site characterization and to develop a complete and adequate license application. There appear to remain legitimate concerns about DOE's site comparison and selection methodology and the adequacy of information used to make its site selection decisions. Underlying these concerns is a continuing dissatisfaction with DOE's site selection guidelines. Finally, there are strong and legitimate concerns about DOE's working relationship with the potential host states and the affected Indian tribes.

All of this has resulted in a substantial number of lawsuits and an erosion of confidence in DOE's ability to make sound and objective technical decisions, and to ensure that the repository program is guided by conservative and prudent decisions on the technical merits. If left uncorrected, these difficulties can substantially delay the repository program and lead to bitter and extensive litigation both in the courts and eventually in NRC's licensing proceeding. Any sense of cooperation and mutual trust between the federal government, and the states, tribes and the public will likely be lost. Given the complexity of the repository development process and the role of the states and tribes as full participants in that process, this is a potentially disabling blow.

What can be done about this situation? In my view, a pause for some specified period for all site-specific work is warranted. That pause should be for the purpose of allowing a detailed review of several key issues, including:

1. The definition of a realistic, workable, and technically conservative schedule for developing the needed repositories;
2. The need for, and timing of, more than one repository, including consideration of the geographical distribution and repository capacity limitation questions.
3. The adequacy of DOE's site selection guidelines, its site comparison and selection methodology, and the level of site-specific information needed to make informed and reasonable site selection decisions; and
4. The availability and benefits of alternative methods for managing the repository development program.

The review of these issues should be conducted either by the Congress or by some independent group reporting to the Congress. If the review is conducted by an independent group, their recommendations and any resulting changes should be considered and acted upon by the Congress. In my judgment, such an approach provides one effective means for addressing the many serious concerns which now exist regarding the repository program.

There may be other alternative approaches as well. But I believe the key point is that some effective means must be found, and found soon, for restoring the credibility and effectiveness of the program if we are to avoid still another failure in this country's efforts to achieve a safe and reliable solution to the high-level waste disposal problem. Thank you.

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