

REGULATORY PERSPECTIVES AND
INTERACTION WITH THE OCRWM PROGRAM

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ABSTRACT

NRC is currently engaged in a prelicensing consultation and guidance process with the OCRWM program. This process, which is open to States, Tribes and the public, is directed at establishing what specific information will be needed to determine compliance with NRC regulations at a date early enough to allow DOE adequate time to obtain this information for a license application. The consultation and guidance process takes on a variety of forms. These include: review of important DOE planning and decision documents such as the environmental assessments and site characterization plans. Open technical meetings and other interactions are being conducted on an ongoing basis under an interagency agreement between NRC and DOE. Also, NRC is developing and issuing staff technical positions on selected key issues. The status of this process will be discussed.

This paper will discuss the NRC high-level waste repository licensing program focusing on the ongoing, prelicensing consultations between the NRC staff and the Department of Energy. As will be described, this consultation process is open to the public, to states and tribes. Its aim is to identify potential licensing issues as early as possible, and to settle on -- very specifically -- what information will be needed in the license application to address these issues.

Before discussing these interactions, it is perhaps best to briefly review the nature of the formal licensing process that they precede.

THE LICENSING PROCESS

Licensing of the repository will occur in several steps. Approvals will be needed before DOE initiates construction, prior to the actual receipt and emplacement of waste and, finally, before permanent closure of the repository. The process at each step is a highly rigorous and public one. A description of the first step, construction authorization, will illustrate. First, the NRC staff will review DOE's license application, looking not only at the summary assessments presented in the application, but at the supporting data and details on how it was collected in order to establish what reliance can be placed upon this data. The staff will conduct independent assessments of repository performance using this data to determine compliance with technical criteria in our regulations. The staff will make recommendations on whether, and under what conditions, a license should be issued. These recommendations will then be scrutinized in an adjudicatory hearing before a licensing board impaneled by the Commission, and finally reviewed by the Commission itself. The staff -- as well as the DOE which will have the burden of proof in these proceedings -- will undergo cross-examination by well prepared technically astute parties on both sides of the licensing question. Experience has clearly shown that expert opinion alone -- without well-validated data and documented analyses -- will not survive this scrutiny. To complete these licensing reviews and hearings on the schedules specified by

the Nuclear Waste Policy Act will require a license application that is both complete and of demonstrably high quality.

It should be obvious that it would be extremely costly and disruptive to this important national program if NRC were to review information gathered by DOE for the first time when the license application is submitted and then find significant fault with it. The lead times associated with many of the required site investigations and repository design activities are very long. For example, it will take at least several years to complete construction of, and testing in, underground facilities to resolve essential questions about rock characteristics and hydrology at any site. Therefore, consultation between NRC and DOE on contents of the license application must start early in the planning of DOE's program. And given the exploratory nature of these site investigations -- each step depending upon the results of previous steps -- these consultations must also be continuous.

INTERACTIONS WITH DOE

Interaction with the DOE is occurring in a variety of ways. The principal ones are those called for by the Nuclear Waste Policy Act -- NRC review of the Mission Plan, Site Characterization Plans and environmental assessments. The SCPs, in particular, are important as they are to be essentially a full scoping of the license application. They are to identify all the potential licensing questions at a site and layout detailed plans for resolving them. Through NRC's analyses of these plans, specific guidance will be given to DOE. Review of the draft environmental assessments issued by DOE has just been completed and a detailed set of comments provided to them. These comments are aimed at helping DOE assure that questions and uncertainties that exist at each site are presented fully so that current site screening decisions are well-informed and so that later site characterization work is sure to be complete.

Other interactions with DOE supplement the staff reviews of documents such as the site characterization plan and environmental assessments. DOE and NRC staffs are conducting numerous technical meetings to review and discuss the enormous volume of data that has been, and will continue to be, generated on the sites being investigated. Over fifty major technical meetings have been conducted over the past several years. These meetings are necessary if NRC staff is to be in a position of identifying issues early and to reach agreement on what further studies will be needed to resolve them in a timely manner. NRC has stationed representatives at each of the DOE repository projects to facilitate NRC access to and review of DOE site activities. These interactions are conducted in accordance with principles established in a formal interagency procedural agreement.

Also, to assure that DOE has timely guidance on licensing needs, the NRC is issuing staff technical positions on selected key topics. Technical positions on such matters as testing in exploratory shafts and underground facilities, sealing of shafts and boreholes upon final repository closure, quality assurance, and implementation of NRC groundwater travel time requirements are in the process of being issued.

Consultations between the NRC staff and DOE during the prelicensing phase will not close out issues in the sense that agreements reached will not legally bind the board which will preside over licensing proceedings. For this reason, additional rulemaking on selected important issues will be initiated as information collected in ongoing investigations permits. By rulemaking, issues which are considered to be technically resolved can be formally closed out before actual licensing proceedings begin. Through this mechanism, which offers opportunity for full participation by all interested and affected parties, it may be possible to settle early some of the more contentious issues which may otherwise cause excessive delay in the licensing hearing process.

QUESTIONS ON NRC/DOE INTERACTION

Several questions that are frequently raised about the prelicensing stage will now be reviewed. One question is: how will NRC staff keep its independence with the amount of close interaction that is taking place with DOE? In addition to the sensitivity that the staff has for maintaining independence of view, the openness of the process and the care with which technical interactions are being documented helps assure that this independence is maintained. All NRC staff positions and guidance documents are noticed in the Federal Register to obtain public comment, and all documentation is available in public document rooms. By the procedural agreement with DOE, all technical meetings are open to the public. Affected states and Indian tribes are invited to be participants. To make it easy for the public to keep track of the process, there is a toll free phone recording which provides information on all meetings.

Another question frequently asked is: what is being done to avoid repeating the kind of problems which have been experienced in recent reactor plant licensing? The waste management staff of the NRC has followed closely the study of the lessons learned from this experience. One of the major problems identified in a recent report to Congress

on these lessons involved the lack of adequate quality assurance programs. It is clear that, without rigorous quality assurance programs which provide the needed pedigree for information presented in the license application, such information will be of limited or no use. Documentation on methods and procedures used in collecting data -- sufficient to permit independent verification of data quality and reliability in the licensing proceeding -- will be required. There has been guidance issued on this subject and a series of meetings with DOE project organizations have recently been completed in an attempt to settle as soon as possible what specifically will be needed in repository quality assurance programs. One of the more challenging issues is how information gathered by DOE during the site screening stage and collected from outside sources can be qualified for licensing use.

While a geologic repository is distinctly different from a reactor or other nuclear facilities licensed by NRC. The nature of site investigations are, in particular, different in nature from activities subject to QA in connection with other facilities. Nevertheless, the fundamental principles of quality assurance -- careful planning, checking and documentation of technical work to name a few -- still apply. The NRC staff has had a special sense of urgency about working with DOE to assure QA programs are fully implemented as soon as possible. Success of the repository program is critically dependent upon doing this. There would be no good excuse if the mistakes of recent reactor licensing experience were to be repeated.

Another question, from some who are familiar with the technical reviews performed to date, is: why is NRC digging into so much detail at the early stage of the program? Without doing this, there is high probability that important details will snag the program when it is well underway and when it will be most costly and disruptive to do so. It might seem to some that NRC is going too far in reviews to be worrying about how boreholes are being drilled, rather than focusing just on the big picture -- the broad strategy for hydrologic testing and geologic investigations. However, details such as whether a borehole is drilled with mud or with air can significantly affect the usefulness of the tests in such holes. The NRC staff is attempting from the outset, to be very aggressive and thorough in its reviews to be sure that all potential issues are identified at the outset.

CONCLUSION

In conclusion, a rigorous regulatory program is essential for the necessary public acceptance of the repository program. The adjudicatory licensing process provides the mechanism for all interested and affected parties -- States, Tribes, interest groups, other Federal agencies, the technical community and private individuals -- to be directly involved in the decision making process. Not only must DOE be technically and scientifically correct, they must also be able to demonstrate this correctness in an open forum. The NRC licensing process with its adjudicatory hearings provides such a forum.

While the licensing process is demanding, if its requirements are fully understood from the beginning and accounted for in planning and early implementation of the program, there is a basis to expect that it can be completed in a reasonably orderly and predictable manner.