

August 1, 1977

SECY-77-406

COMMISSIONER ACTION

For: The Commissioners

From: Clifford V. Smith, Jr., Director
Office of Nuclear Materials Safety and Safeguards

Thru: *for* Executive Director for Operations *W. J. Duda*

Subject: LICENSING OF ERDA HIGH-LEVEL WASTE REPOSITORIES

Purpose: To inform the Commissioners of the transmittal to ERDA of a letter enclosing a tentative staff position regarding procedures for licensing of ERDA HLW repositories.

Discussion: A letter has been received from ERDA requesting official guidance at this time from NRC as to administrative procedures for repository licensing.

A Commission paper presenting alternatives for a Commission policy decision on repository licensing procedures is in preparation and will be before the Commission in the near future.

Meanwhile, to enable us to respond to ERDA's request for prompt guidance in a meaningful time frame, the attached response describing procedures identified as a tentative staff position has been prepared.

Coordination: The action was concurred in by the office of the Executive Legal Director.

Clifford V. Smith, Jr.
Clifford V. Smith, Jr., Director
Office of Nuclear Materials Safety
and Safeguards

Attachments:

1. Response to ERDA
2. Letter from R. D. Thorne, ERDA

Contact:

Edward Regnier, NMSS

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SECY NOTE:

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Friday, August 12, 1977.

Commission staff office comments, if any, should be submitted to the Commissioners NLT August 10, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

D R A F T

Mr. Robert D. Thorne
Acting Assistant Administrator
for Nuclear Energy
U.S. Energy Research and Development
Administration
Washington, D.C. 20555

Dear Mr. Thorne:

We are pleased to reply to your May 4, 1977 letter requesting specific guidance concerning NRC administrative requirements and procedures for licensing of long-term high-level radioactive waste repositories. We agree there is a need to establish and demonstrate a safe means for disposing of nuclear waste and will make every effort to provide you with the earliest possible regulatory guidance, prompt reviews and timely licensing decisions.

Although we do not have formal regulatory procedures in place designed for the specific purpose of licensing a repository, I am enclosing a tentative staff position regarding procedures and estimated review times (see enclosures) which can be used by ERDA for preliminary planning purposes. These procedures have not yet been submitted to the Commission for approval and thus are subject to modification. They have also been prepared without final information regarding ERDA's specific waste repository design and the amounts and types of wastes which will be stored.

You have indicated an interest in seeking NRC licensing approval of the Waste Isolation Pilot Plant (WIPP) in New Mexico. Our present thinking is that the administrative and procedural requirements for licensing the WIPP facility would be similar to those for the OWI Terminal Waste Storage Program.

If the WIPP is to become a licensed facility for high-level wastes, consistent with the views expressed in the enclosure, I feel it is important that preparation for licensing be initiated promptly. If license application were made after construction of the repository, there is some risk that retrofitting may be required to meet licensing requirements, or even that irreversible steps taken during construction could preclude future licensing. If, on the other hand, a license application were made at some future time but prior to construction, a substantial delay of construction could result while we proceed with a review comparable to the early phases in the enclosures. I feel that to minimize risk of not approving the application and to minimize the delay which would arise, the earliest possible start of formal NRC review is necessary.

Attachment 1

Mr. Robert D. Thorne

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With regard to detailed guidance, our regulations development program is currently geared to meet the need of the OWI Terminal Waste Storage Program. This schedule may not be timely for development of the WIPP which is ahead of the OWI program. However, we will make every effort to provide you with timely guidance appropriate to your program needs.

We appreciate your need for more definitive guidance about regulatory requirements and are giving high priority to developing such guidance. If you have additional questions or wish to discuss this matter further, please let me know.

Our staff will keep you informed of technical developments. We appreciate the continued briefing by your staff on progress at ERDA.

Sincerely,

Clifford V. Smith, Jr., Director
Office of Nuclear Material Safety
and Safeguards

Enclosures:

1. NRC Staff Working Document--
Proposed Procedure for Licensing
a High-Level Waste Repository
2. Proposed Schedule for NRC
Guidance to ERDA and Estimated
Time for Each Step of the
Review Process

NRC STAFF TENTATIVE POSITION

PROPOSED PROCEDURE FOR LICENSING AN ERDA HIGH-LEVEL WASTE REPOSITORY

The proposed repository review procedures may be divided, for discussion purposes, into three phases: preliminary site review, repository development and repository operation. The procedures have been developed using the present procedures for review of large fuel cycle materials licenses, such as fuel fabrication plants and uranium mills, as a point of departure.

Preliminary Site Review

It would be highly desirable for ERDA to consult with NRC Staff in the early stages of its site selection activity. This would enable the NRC Staff to point out those aspects of a particular facility type or location which in its judgement would require special attention, and help to define the kinds of information that might be needed for the Commission to make licensing decisions. Informal consultation between a prospective license applicant and NRC Staff is entirely consistent with the practice already employed in the case of nuclear power reactors. It is especially appropriate where the party concerned is another government agency.

The interaction between NRC Staff and ERDA would likely be consultative. That is, NRC would provide advice, but there would be no findings or formal adjudicatory action by the Commission. ERDA would remain at liberty to come forward with any proposal that it considered to conform with Commission requirements, and the Commission would be free, as the evidence might later warrant, to approve or disapprove the proposal. However, a docket would be established in Washington, D. C. and local public document rooms where all review correspondence could be placed and meetings between NRC

Staff and ERDA would be open to public attendance as in the case of commercial license applications.

Repository Development

The licensing procedures would begin formally with the filing of an application for a license by ERDA prior to commencement of construction.

Upon docketing, notice of the application would be published. A hearing would be held if requested by an interested person or if the Commission decided to hold a hearing on its own initiative. The proceeding could be divided into several stages, covering sequential phases of the work and entailing different determinations tailored to the activities authorized to be conducted. This would depend on the project schedule and the amount of information that is available.

Whether or not the proceedings are divided into separate stages, the environmental impacts associated with the project would need to be reviewed in advance of construction. Thus, at the outset, probably prior to the sinking of any main shaft, an environmental impact statement would need to be prepared. The NRC's usual practice is to prepare its own environmental impact statement on the licensing action based, in part, on an environmental report prepared by the license applicant. If this practice were followed, the Commission could take into account ERDA's own environmental analysis (submitted in the form of the environmental report), especially with respect to matters of energy policy entrusted to it by law, as well as any determinations which state and local agencies may have made, but the ultimate responsibility for the statement would rest upon the Commission.

Alternatively, with CEQ approval, some form of lead agency arrangement might be entered into with ERDA whereby ERDA, rather than NRC, might be responsible for actual preparation of the statement. Under this alternative some special procedures would need to be developed regarding the precise role of ERDA's statement in the NRC review process. In any event the initial NRC review at this stage would take into account, to the extent practicable on the basis of available information, considerations set forth in the Atomic Energy Act relating to the health and safety of the public.

Any review at this stage would likely encompass a variety of matters including, most importantly, site suitability. Conceptual design features of the repository, and plans for supervising construction and collecting data required for later stages of review, might also be reviewed. Site suitability would be examined both in the sense that the site itself would be examined for unsuitability for a geologic repository on environmental or safety grounds and in the sense that alternative sites would be examined from an environmental or safety point of view.

Following the review and any hearing that may be held, the Commission could authorize construction to commence. Some formal NRC finding would need to be made at this point, perhaps along the lines of a determination that, based upon the available information and review to date, there is reasonable assurance that the proposed site is a suitable location for a geologic repository of the general type and size proposed from the standpoint of radiological health and safety and environmental considerations.

Because the information will necessarily be limited at the time the Commission initially reviews the application, it could elect to restrict any authorization to a portion of the entire construction effort. In that case, further proceedings related to remaining unresolved issues would likely be required before the subsequent steps could be undertaken.

Repository Operation

ERDA would need to have a license from the Commission before it may possess high-level radioactive waste for long-term storage at a geologic repository. A license would only be issued upon a definitive review of health, safety, and as appropriate, environmental issues in the light of (1) geologic, hydrologic, and other site evaluation data obtained during repository development; (2) reports of engineers and inspectors with respect to the structure systems, and components and of the facility as a whole; (3) results of research and development programs carried out to resolve any questions identified when prior authorizations were given; (4) plans for initial and routine operations; and (5) plans for identifying and responding to any unanticipated releases of radioactive materials from the repository. The scope of this later review would depend on the amount of information available and the definitiveness of the NRC review at the earlier stage.

License Amendment (As Needed)

The NRC Staff understands that ERDA's plans will include provisions for retrievability of stored materials during initial phases of repository operations. If special restrictions such as retrievability or a limit

on amounts of wastes have been imposed in the initial license to store materials, an amendment to the repository license will be required prior to committing waste to irretrievable disposal or prior to the receipt of additional waste. The required review procedures and findings would likely be similar to those described above for initial licensing, except that any additional information obtained during the retrievable storage phase or during operation with limited inventory would need to be taken into account.

ERDA would likely be required to conduct appropriate monitoring programs and keep records and submit routine and special reports, in accordance with Commission regulations and orders. All operations, including monitoring of potential radionuclide migration, would be subject to such continuing NRC inspection activities as may be found to be appropriate.

NEPA COORDINATION

ERDA and the Commission have a mutual responsibility under NEPA to consider the environmental impacts associated with the development of geologic repositories for high-level radioactive wastes. Designing procedures that will enable each agency to address the issues which are properly before it, without unnecessary duplication, requires sensitive analysis.

The NRC Staff believes it would be appropriate for NRC and ERDA to consult with the Council on Environmental Quality (CEQ) to develop an acceptable lead agency arrangement for preparation of the necessary NEPA analyses in support of NRC licensing actions.

Enclosure 2

PROPOSED SCHEDULE FOR NRC GUIDANCE TO ERDA AND ESTIMATED TIME*
FOR EACH STEP OF THE REVIEW PROCESS

Guidance to ERDA on Site Suitability Criteria - Nov. '77

Recommended Content of the Site Description - Dec. '77

Preliminary Site Review Time, NRC - 6 months

Guidance to ERDA on Repository Design Performance Criteria - March '78

Guidance to ERDA on Contents of Application for a Repository
License - May '78

Repository Development Review Time, NRC - 22 months

Guidance on Requirements for Application Updating Submittal for
License Approval before Operating - July '82

Repository License Review Time, NRC - 15 months

*For each step at which there is opportunity for public hearing, six months has been allowed for the hearing process. Protracted hearings could significantly extend the time needed to complete the review.



UNITED STATES
ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
WASHINGTON, D.C. 20545

MAY 4 1977

Mr. Clifford V. Smith
Acting Director
Office of Nuclear Materials and
Safeguards
Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Smith:

As part of ERDA's responsibility to provide for the long-term disposal of high-level wastes, we are also required to obtain licensing approval from the Nuclear Regulatory Commission. As you are aware, we have previously committed to the initial operation of two repositories by 1985 and we still believe that this objective must be met to demonstrate a permanent solution to waste management in order to retain public acceptance of nuclear power generation.

We are currently in the early stages of conceptual design of repositories which will have the capability to accept either solidified high-level waste or unprocessed spent fuel elements from light water reactors. It is essential, however, at this time that we design in detail the project management and schedule requirements necessary to get a facility on-line by 1985.

Although ERDA and NRC staffs have engaged in preliminary discussions of possible licensing requirements, it is essential that we now have some official guidance from NRC as to what your administrative requirements of us will be and what deadlines for submission of required documentation will have to be in order to meet our 1985 operating date.

While the main thrust of this request refers to the civilian waste repositories, we are also considering the possibility of seeking NRC licensing approval of the Waste Isolation Pilot Plant (WIPP) in New Mexico. Since we currently contemplate construction of this facility beginning in 1979, it is essential to our planning process to learn what licensing requirements we might face at the earliest possible time.

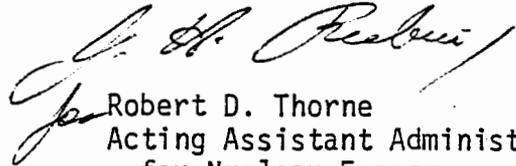
Attachment 2

Mr. Clifford V. Smith

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We appreciate the fact that you presently have studies underway to define the licensing process, however, I hope you will be able to give us some specific guidance in this area at your earliest possible convenience.

Sincerely,



Robert D. Thorne
Acting Assistant Administrator
for Nuclear Energy

cc: H. E. Roser, Mgr., ALOO
R. J. Hart, Mgr., ORO
C. D. Zerby, Dir., OWI, OR