



Department of Energy

Washington, DC 20585

AUG 11 1994

Mr. Joseph J. Holonich, Chief
High-Level Waste and Uranium
Recovery Project Branch
Division of Waste Management
Office of Nuclear Material
Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Holonich:

At the July 26, 1994, Bi-monthly Management meeting, the U.S. Department of Energy committed to provide the U.S. Nuclear Regulatory Commission with a copy of the written public comments from the Site Suitability Workshop that was held on May 21, 1994 in Las Vegas, Nevada. Enclosed is a copy of the comments from the workshop. If you have any questions, please contact Chris Einberg of my staff at (202) 586-8869.

Sincerely,

Christopher A. Kouts, Acting Director
Regulatory Integration Division
Office of Civilian Radioactive
Waste Management

Enclosure:
As stated

- cc: w/enclosure:
- R. Nelson, YMPO
- R. Loux, State of Nevada
- W. Offutt, Nye County, NV
- T. J. Hickey, Nevada Legislative Committee
- D. Bechtel, Las Vegas, NV
- Eureka County, NV
- Lander County, Battle Mountain, NV
- P. Niedzielski-Eichner, Nye County, NV
- L. Bradshaw, Nye County, NV
- C. Schank, Churchill County, NV
- F. Mariani, White Pine County, NV
- V. Poe, Mineral County, NV
- J. Pitts, Lincoln County, NV
- J. Hayes, Esmeralda County, NV
- B. Mettam, Inyo County, CA

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**AGENCY FOR NUCLEAR PROJECTS
NUCLEAR WASTE PROJECT OFFICE**

Capitol Complex
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June 22, 1994

Dr. Jane R. Summerson
U.S. Department of Energy
Office of Civilian Radioactive Waste Management
1000 Independence Avenue, S.W.
Washington, D.C. 20585

RE: NOTICE OF INQUIRY AND OF PUBLIC MEETING, 10 CFR 960, PROCESS FOR EVALUATING THE SUITABILITY OF THE YUCCA MOUNTAIN SITE FOR DEVELOPMENT AS A REPOSITORY FOR HIGH-LEVEL RADIOACTIVE WASTE AND SPENT NUCLEAR FUEL. 59 FR 79, APRIL 25, 1994, P. 19680.

Dear Dr. Summerson:

This letter is intended to further elaborate the comments presented by representatives of this office in the May 21, 1994 public meeting announced in the cited notice.

It is our belief that the Guidelines (10 CFR Part 960) should be revised to incorporate requirements for a specific process of public involvement in the DOE's use of the Guidelines for making a Yucca Mountain site suitability determination, whether preliminary or final. And, we further believe that the Guidelines should be revised to provide a specific process of peer review of scientific and technical information used in the implementation of the Guidelines.

The need for incorporation of specific requirements for public involvement was pointed out in the process of promulgation of the Guidelines in 1984, and acknowledged in the Background Information accompanying the Rule:

"A number of commenters also requested specific details of the process the DOE intends to follow for consultation with the States during the implementation of the guidelines." 49 FR 236, December 6, 1984, P. 47723.

The Guidelines were promulgated without such details and DOE did not provide any explanation for having rejected the requests cited above.

The matter of peer review of scientific and technical information used in DOE's implementation of the Guidelines is not discussed in the Background Information, however this is a widely accepted practice for improving confidence in findings based upon such information and DOE should formally commit itself to a specific process of peer review in the Implementation Guidelines (10 CFR Part 960, Subpart B).

In the Background information, DOE states the process it will follow in revising the Guidelines:

"Such revisions will be made through a process of notice and comment in accordance with the Administrative Procedure Act. In response to the NRC's preliminary concurrence condition 2 (Section II.C) and concerns expressed during the NRC's meeting on June 22, 1984, the DOE has made a commitment in 960.1, "Applicability," to submit all guideline revisions to the NRC for its review and concurrence before issuance." 49 FR 236, December 6, 1984, P. 47723.

Section 112(a) of the Nuclear Waste Policy Act provides that the Secretary may revise the Guidelines "consistent with the provisions of this subsection." This subsection requires, in addition to concurrence of the Nuclear Regulatory Commission, that DOE consult with the Council on Environmental Quality, the Administrator of the Environmental Protection Agency, the Director of the Geological Survey, and interested Governors prior to issuance of guidelines. If DOE proposes revision of the Guidelines, to remain consistent with Section 112(a), it should formally consult with the agencies named, including the Governor of Nevada, before issuance of revised guidelines, and this consultation should be carried out separate from the Administrative Procedure Act process to which it has committed.

Since the Guidelines provide the standard for DOE's final determination of the suitability of the Yucca Mountain site for development of a repository, and are the basis for any preliminary suitability findings, DOE should commit itself, in the Guidelines, to a process for both public involvement and peer review to enhance confidence in its suitability evaluations. And these processes should be developed and established through public notice and comment, pursuant to the Administrative Procedure Act.

The adequacy of the guidelines for use in DOE's suitability evaluations with respect to matters other than public involvement and peer review can also be included in the public notice and comment process leading to promulgation of revised Guidelines.

In order to invite broad and substantive involvement in the review and comment process, it would be useful for DOE to issue an advance notice of proposed rulemaking, prior to issuing a proposed rule, in which it develops and analyses options for revisions to the Guidelines and then requests comment on these options, as well as suggestions of other options to be considered in revision of the Guidelines.

In regard to the OCRWM proposed program approach that was presented and discussed in the May 21, 1994 public meeting, I sent a letter, on June 3, to OCRWM Director Dreyfus explaining our stated position on the need for a Programmatic Environmental Impact Statement, if the proposed approach is to be pursued.

I hope the comments in this letter are useful in clarifying and elaborating the statements we provided in the May 21, 1994 public meeting, and I look forward to your consideration and response. If you have questions on this matter, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert R. Loux", written in a cursive style.

Robert R. Loux
Executive Director

RRL/cs

BOB MILLER
Governor

STATE OF NEVADA

Submitted to
Project Office
Liaison 2

ROBERT R. LOUX
Executive Director



**AGENCY FOR NUCLEAR PROJECTS
NUCLEAR WASTE PROJECT OFFICE**

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February 15, 1994

Mr. Robert M. Nelson
Acting Project Manager
Yucca Mountain Project Office
P.O. Box 98608
Las Vegas, Nevada 89193-8608

Dear Mr. Nelson:

In response to the invitation extended by Mr. Eric Lundgaard transmitting the preliminary draft of the "Management Plan for the Evaluation of 10 CFR 960 and Development of a Site Suitability Methodology Implementation Plan," I am providing the following comments.

The characterization of Yucca Mountain to determine its suitability as a repository for the disposal of spent nuclear fuel and high level radioactive waste is a national undertaking with interest from a diverse public. In addition to the State of Nevada, affected local governments and Nevada citizens and organizations, that "public" includes other states, national environmental and public interest organizations, nuclear utilities, and other entities. Since 10 CFR 960 was originally promulgated under the Administrative Procedures Act as a formal rule, commented upon extensively by most of the aforementioned entities, and concurred in by the Nuclear Regulatory Commission as required by the Nuclear Waste Policy Act of 1982, we strongly recommend that the Department publish the preliminary draft "Management Plan" in the Federal Register to notify potentially affected or interested parties and provide for review and comment. Until this has been done and all appropriate stakeholders and interested parties have been appraised of DOE's intent to review and possibly seek modification to 10 CFR 960, it is inappropriate for this Office to provide specific comments on the Management Plan.

It is also clearly inappropriate for DOE to convene a site suitability task force (as indicated in Jeanne Nesbit's overview at

I-353449

BAM

the 2/11/94 meeting) made up primarily of the Department of Energy's Yucca Mountain staff and contractors to review the Management Plan - and by implication the rule. It is difficult to see how individuals and organizations with vested interests in the outcome of the Yucca Mountain studies could render objective opinions about a set of regulations that form the basis for determining the Yucca Mountain site's suitability. The proposed approach seems to have procedural problems as well as potential legal ramifications, and we recommend that DOE reconsider the course of action that has been articulated.

Sincerely,



Robert R. Loux
Executive Director

RRL:cs

cc: Daniel Dreyfus, OCRWM
Local Government/Tribes Representatives
Nevada Commission on Nuclear Projects
Nevada Congressional Delegation



NUCLEAR ENERGY INSTITUTE

July 6, 1994

Theodore J. Garrish
VICE PRESIDENT,
NUCLEAR WASTE MANAGEMENT

Jane R. Summerson, Ph.D.
U.S. Department of Energy
Office of Civilian Radioactive
Waste Management RW-22
1000 Independence Avenue, S.W.
Washington, D.C. 20585

SUBJECT: Notice of Inquiry -- Process for Evaluating the Suitability of the Yucca Mountain Site for Development as a Repository for High-Level Radioactive Waste and Spent Nuclear Fuel (59 Fed. Reg. 19, 680)

Dear Dr. Summerson:

As a follow-up to our telephone call last week, there are two inadvertent typographical errors on the last page of our response letter to the subject Notice of Inquiry. The second line of the first incomplete paragraph on page 4 should have read:

"...Radioactive Waste Management..." (*underlined word missing in original*)

The final sentence of the first complete paragraph on page 4 should have read:

" Further, peer reviews should not be conducted under a formalized legal process, such as a DOE rule, but should be fashioned in accordance with the needs of the particular evaluation under review." (*underlined word missing in original*)

I think you will find that this paragraph now properly comports with the body of our comments.

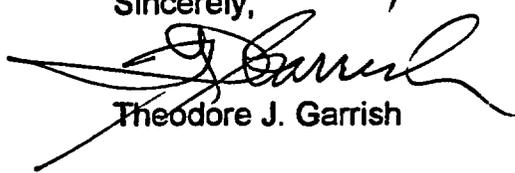
Dr. Jane R. Summerson

July 6, 1994

Page 2

Enclosed is a corrected version of the final page and we request that it replace the final page of the letter in the official record. We apologize for any inconvenience that this may have caused and appreciate your forbearance on the matter. If you have any questions, please do not hesitate to call me or Mr. Chris Henkel on our staff at 202/739-8117.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Garrish', with a long horizontal flourish extending to the left.

Theodore J. Garrish

Enclosure

CORRECTED VERSION

7/5/94

Dr. Jane R. Summerson

June 24, 1994

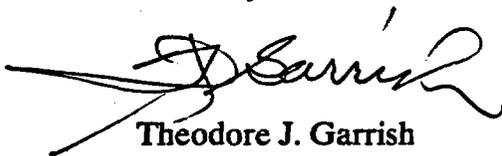
Page 4

review conducted under the auspices of the National Academy of Sciences Board on Radioactive Waste Management would seem to be a productive approach.

In conclusion, the industry believes that a process of periodic suitability determinations constitutes a sound, reasonable, methodical approach to determining site suitability. However, the process should not be highly formalized but remain flexible to accommodate the needs of the program, particularly at relatively early stages of characterization. In this connection, the Siting Guidelines should be employed judiciously; and the Guidelines themselves should be revised to conform with the current statutory framework provided by the NWPA and EPA. In addition, peer reviews are generally unnecessary and overly time consuming. If employed, however, they should utilize expertise which already exists in bodies such as the National Academy of Sciences. Further, peer reviews should not be conducted under a formalized legal process, such as a DOE rule, but should be fashioned in accordance with the needs of the particular evaluation under review.

If there are any questions or if additional information would be helpful, please do not hesitate to contact me or Mr. Chris Henkel of our staff at (202) 739-8117.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Garrish', with a large, sweeping flourish extending from the end of the signature.

Theodore J. Garrish



NUCLEAR WASTE REPOSITORY PROJECT OFFICE
P.O. BOX 1767 • TONOPAH, NEVADA 89049
(702) 482-8183 • FAX (702) 482-9289

May 17, 1994

VIA FAX

Mr. Robert M. Nelson, Jr.
Acting Associate Director - Office of Geologic Disposal
U.S. DOE/YMSCO
P.O. Box 98608
Las Vegas, Nevada 89193

RE: Nye County Comments on Scenario A and the Reevaluation of OCRWM's Siting Guidelines

Dear Mr. Nelson:

Thank you for the invitation to participate in the Office of Civilian Radioactive Waste Management's (OCRWM) Stakeholders Meeting scheduled for May 21, 1994 in Las Vegas. The purpose of the meeting is to elicit stakeholders' views on the proposed new program directions, including "Scenario A" of the administration's funding proposal and the revisiting of OCRWM's siting guidelines, 10 CFR Part 960. The issues to be discussed are of sufficient importance and concern to warrant our conveyance of the County's concerns in advance of that meeting.

SUMMARY

Nye County opposes the Scenario A intent to have an early site suitability determination and to use confirmatory testing as an alternative to a scientifically sound surface-based testing program. Under Scenario A, Nye County does not believe that YMSCO will have enough data, nor have completed sufficient analysis, to enable it to draw scientifically sound conclusions. Further the County believes that confirmatory testing of a loaded repository, maintained in a state of readiness for retrieval, will not provide a realistic opportunity for testing of critical waste-isolation issues. Finally, the temperatures of a fully loaded repository challenge the technical feasibility and credibility of retrievability.

With regard to reevaluating 10 CFR 960, Nye County believes that its predecisional role should be limited to responding to OCRWM's proposed changes, and that Nye County should not participate

Mr. Robert M. Nelson, Jr.

May 17, 1994

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In developing the proposed changes. The County strongly believes that justification has yet to be made for making wholesale substantive guideline revisions. The County opposes developing site-specific guidelines as such guidelines will destroy even a facade of scientific integrity for the Yucca Mountain project. Finally, Nye County believes that adopting NRC's Subpart E of 10 CFR Part 60 would mask the fundamental distinctions between site suitability and licensability.

Nye County also notes that OCRWM's Management Plan for the Evaluation of 10 CFR Part 960 is totally silent on the NRC concurrence required by Section 112(a) of the NWPA, as amended.

Finally, Nye County believes that any review of 10 CFR Part 960 should be accomplished on a national scale since the guidelines will ultimately be applicable to a second repository.

SCENARIO A

Nye County is most concerned about two concepts that seem embedded in Scenario A: (1) An early site suitability determination without benefit of a completed comprehensive surface-based testing program for confident site characterization; and (2) The notion that confirmation testing of a loaded repository, maintained in a state of readiness for retrieval, will give the opportunity for meaningful testing of critical waste-isolation issues.

Early Site Suitability Determination

Nye County is very troubled by OCRWM's belief that a technical site suitability decision could be made as early as 1998. The County simply does not believe that YMPSCO will have enough data, nor have completed sufficient analysis, to enable it to draw scientifically sound conclusions. Indeed, many of the tests which we have heretofore been led to believe were essential for determining Yucca Mountain's suitability and licensability will not even have begun by this time. The surface-based testing program, even under today's optimistic schedule, will be one to one-and-a-half years from completion; the Exploratory Studies Facility heater tests will be even less complete.

Confirmatory Testing and a Fully-Loaded Repository

As the technical community well understands, the reference thermal load, and any "dry out" thermal load scenario, will create above-boiling temperatures within large envelopes of host rock around the repository horizon. Yet the time required for large scale boiling temperature and cool-down zones argue that the conditions of moisture migration, condensation, and flow back can never be monitored at meaningful time or temperature envelope scales. Climate change, volcanism, and seismic hazard issues represent other key intractable issues with regard to meaningful testing with a loaded site. In addition, critical-issue databases such as gas-phase circulation system flow boundaries which might form as steam develops, are best studied before the site is disturbed by construction of ESF or repository tunnels..

Mr. Robert M. Nelson, Jr.

May 17, 1994

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Large scale boiling temperatures resulting from a fully-loaded repository also raise the practical concern that post-emplacment repository conditions will pose a significant barrier to retrievability. To make retrievability feasible (hence credible), YMPSCO will need to invest heavily in thermal and radiation protection technology for a future human workforce or, alternatively, in large-scale robotics.

Since retrieval technology will only be needed should confirmatory testing demonstrate that the site is unsuitable, can Nye County residents have reasonable confidence that investment in this technology will be made? The County is skeptical. YMPSCO's historical emphasis on construction engineering, project management, and cost controls suggests that an "engineered" solution to the unsuitable condition will be attempted and that investment in retrievability technology will not be considered cost efficient. In short, retrievability under Scenario A is not a credible concept.

Key Questions Generated by Scenario A

OCRWM must answer in specific detail several questions raised by the proposed new approach. These questions are:

- Since the DOE is required, by 10 CFR 60.24, to submit to the NRC an application which is "as complete as practical", what does DOE view as a complete application? How much data and analyses are, in DOE's view, essential to such a complete application, and how much can be deferred to the post-licensing, post-construction monitoring phase?
- What data and analysis is DOE going to rely on in making its early technical site suitability determination?
- What testing will be deferred into the later confirmatory testing phase?

I want to emphasize that these comments on Scenario A should be considered very preliminary. As this proposal develops, and more details become available, it is our intention to continue sharing our views and concerns with you as we continue to carry out our oversight responsibilities.

REEVALUATION OF 10 CFR 960

On this subject, our views are again fairly general in nature. While we certainly agree that it is appropriate and useful to seek input from the stakeholders while DOE reevaluates its siting guidelines, we believe that it is not incumbent upon oversight organizations to recommend, in the first instance, how to change or interpret the law or guidelines in order to facilitate DOE's ability to carry out its own program. If, for example, it is determined that formalized interpretations of portions of the guidelines are needed, then OCRWM should suggest and circulate such interpretations. Oversight

Mr. Robert M. Nelson, Jr.

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organizations, such as Nye County can then comment or make positive suggestions for change. This is still predecisional input. With these points in mind, we do have some general comments on the reevaluation of 10 CFR Part 960.

We understand that several options, as outlined in DOE's Management Plan for the Evaluation of 10 CFR Part 960, are currently being considered. Those options include:

- Continuing the use of the guidelines without revision;
- Issuing a federal registry notice providing the DOE interpretation of the siting guidelines;
- Amending the guidelines;
- Developing site specific guidelines; and
- Adopting as DOE guidelines the siting criteria of 10 CFR Part 60.

With respect to the first option, we have no comment at this time. OCRWM must determine for itself whether or not it can most efficiently continue to conduct the program under the present guidelines.

The second option is publishing in the Federal Register official departmental interpretations of the siting guidelines, or portions thereof. This may take the form, for example, of formalizing a suggested and evolving approach to groundwater travel time as outlined by OCRWM to the NWTRB on April 12 in Reno. Another would be to address, by such a formal interpretation, the provisions for comparison among several alternative candidate sites, which may no longer apply in the specific case of Yucca Mountain. Again, whether such an approach is preferable must be DOE's decision in the first instance. Nye County, along with other oversight organizations, would certainly be interested in commenting upon and providing predecisional input into any such suggested interpretation, but it is DOE's responsibility to offer such an interpretation for comment.

The third option would be to amend the guidelines, although the Management Plan offers no insight on what form the amendment might take. Nye County recognizes that much knowledge has been gained about disposing of radioactive waste since the guidelines were first written 10 years ago. We certainly know more about Yucca Mountain than was known in 1984. The guidelines themselves contemplate periodic revisions, as is evidenced by the provisions of 10 CFR 960.1. Nye County does not believe that guidelines should not under any circumstances be amended. At the same time, Nye County believes strongly that no justification has been made for any wholesale substantive revisions of the guidelines. At a minimum, the guidelines must in their current form, or as amended (or interpreted), provide a meaningful measure of site suitability.

The fourth option identified is to develop site specific guidelines. Nye County opposes this option. Adopting such guidelines would clearly constitute what many in Nevada have always feared the most,

Mr. Robert M. Nelson, Jr.

May 17, 1994

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that is, writing the rules to fit the site rather than characterizing the site to determine whether or not it meets the guidelines. Furthermore, it is a virtual certainty that the nation will eventually need a second repository. Any DOE guidelines, therefore, must be applicable to other sites, in other locations, in other geologic media.

To write site specific guidelines for Yucca Mountain would further detract from, if not totally destroy, the public's confidence in the scientific objectivity of the Yucca Mountain characterization program. In addition, new guidelines would have to be developed when a second repository search begins.

The final option identified would constitute adopting as DOE's siting guidelines, in substance if not in language, the siting criteria of Subpart E of 10 CFR Part 60. This option masks the real fundamental distinction between site suitability and licensability. The DOE siting guidelines must constitute real true measures of site suitability, as contrasted with examples of licensing emphasis on design conditions, operation of the engineered barrier system, and operating procedures. The guidelines must reflect the geologic capability of the site itself to isolate waste, without the imposition by the licensing agency of any external requirements.

NRC Concurrence

The DOE Management Plan For the Evaluation Of 10 CFR Part 960 is totally silent on NRC concurrence. The NWPA, in section 112(a), 42 U.S.C. 10132(a), requires NRC concurrence in the adoption of DOE's guidelines. The original NRC concurrence process was lengthy and thorough and included public meetings before the Commission itself, and substantial consultation with states, local governments, Indian tribes, environmental organizations and other federal agencies. Written comments by some 75 entities and interested individuals were accepted. Further, the guidelines themselves commit DOE to NRC concurrence before they are revised in any way. See 10 CFR 960.1. While the Management Plan itself is silent on this issue, DOE needs to address NRC concurrence if it is to suggest amending the guidelines (or even substantively interpreting them) in any meaningful way.

National-Scale Review

Finally, in our view DOE's Management Plan, and the May 21 stakeholders meeting itself, is inappropriately narrow. The repository program is national in scope and thus of national interest. The guidelines, as noted above, must apply in the future to other repository sites, whether Yucca Mountain is determined to be unsuitable, or when a second repository search is instituted. Because of that, any proposed management plan to reevaluate the guidelines should be published in the Federal Register with comments solicited from the public in general, rather than just the Yucca Mountain stakeholders.

Please consider our views on Scenario A to be general and preliminary. Nye County will provide

Mr. Robert M. Nelson, Jr.

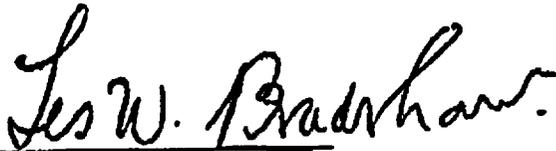
May 17, 1994

Page: 6

OCRWM with more detailed comments, and will participate in the continuing dialogue, as this process goes forward.

Very truly yours,

NYE COUNTY, NEVADA



Les W. Bradshaw, Manager

Nye County Nuclear Waste Repository Project Office

LWB:fd

cc: William L. Offutt - 482-8198
Affected Units of Local Government
Allen Benson - 202-586-7259
Chris Binzer - 794-5348
Dr. Daniel Dreyfus - 202-586-2672
Ginger King - 794-7325
Malcolm Knapp - 301-415-5397
Robert Loux - 687-5277
Eric Lundgaard - 794-5348
Martin D. Mifflin - 434-1725
Malachy R. Murphy - 206-754-1605
Robert M. Nelson, Jr. - 794-7908
Phil Niedzielski-Eichner - 703-818-2437
Wolf Repke - 794-5325
Paul Seidler - 794-5348
Stan Sims - 482-9289
Nick Stellavato - 794-5136
Michelle Ulick - 794-5348



NUCLEAR ENERGY INSTITUTE

June 24, 1994

Theodore J. Garrish
VICE PRESIDENT,
NUCLEAR WASTE MANAGEMENT

Jane R. Summerson, Ph.D.
U.S. Department of Energy
Office of Civilian Radioactive
Waste Management RW-22
1000 Independence Avenue, S.W.
Washington, D.C. 20585

SUBJECT: Notice of Inquiry -- Process for Evaluating the Suitability of the Yucca Mountain Site for Development as a Repository for High-Level Radioactive Waste and Spent Nuclear Fuel (59 Fed. Reg. 19,680)

Dear Dr. Summerson:

On behalf of the commercial nuclear energy industry, the Nuclear Energy Institute (NEI)¹ submits the following comments in connection with the above-referenced matter. They are organized according to the three areas of interest specifically identified in the Department's Notice. In brief, and as detailed below, NEI supports a process of periodic site suitability reviews as a sound, reasonable, and methodical approach to reaching a determination of site suitability. However, the process should not be highly formalized. Rather, it should remain flexible in order to accommodate the needs of the site characterization program as it evolves.

NEI and its predecessor organizations have participated as a member of the DOE's 10 CFR Part 960 Task Force and in the Stakeholder meeting held on May 21, 1994 to discuss the site suitability evaluation process for Yucca Mountain. In view of the importance of this process, NEI is pleased to offer the following comments.

¹ NEI is the successor organization to the Edison Electric Institute's Utility Nuclear Waste and Transportation Program (EEI/UWASTE), which had previously represented the nuclear energy industry on matters associated with the subject of this Notice of Inquiry. NEI's mission is to foster and encourage the continued safe utilization and development of nuclear energy in order to meet the nation's energy, environmental, and economic goals and to serve and support the commercial nuclear industry. Regarding nuclear waste, NEI takes actions necessary to ensure that safe, environmentally sound, publicly acceptable, cost effective radioactive waste management and disposal and nuclear materials transportation systems are maintained and developed in a timely manner.



NUCLEAR ENERGY INSTITUTE

March 25, 1994

Steven J. Brocoum, Ph.D.
Director, Analysis and
Verification Division (RW-22)
U.S. Department of Energy/OCRWM
1000 Independence Ave., S.W.
Washington, D.C. 20585

Re: March 4, 1994 Meeting of the 10 CFR 960 [General Guidelines for the
Recommendation of Sites for Nuclear Waste Repositories] Task Force

Dear Dr. ^{Steve}~~Brocoum~~:

This letter memorializes the position taken by EEI/UWASTE at the above-referenced meeting. Specifically, support for bringing the Siting Guidelines of 10 C.F.R. Part 960 into conformance with the current statutory framework, while making maximum use of applicable provisions of 10 C.F.R. Part 60.

On March 16, 1994 the Nuclear Energy Institute was formed. NEI is a broad-based association integrating a full spectrum of nuclear energy issues previously managed by the American Nuclear Energy Council (ANEC), the U.S. Council for Energy Awareness (USCEA), the Nuclear Management and Resources Council (NUMARC), and the nuclear activities at the Edison Electric Institute, including the Utility Nuclear Waste and Transportation Program (EEI/UWASTE). NEI's mission is to foster and encourage the continued safe utilization and development of nuclear energy in order to meet the nation's energy, environmental, and economic goals and to serve and support the commercial nuclear industry.

At the March 4 meeting, the following specific options for the use of 10 C.F.R. Part 960 were presented by the Task Force:

- (1) continue use of the existing Siting Guidelines without revisions;
- (2) issue a DOE interpretation of the Guidelines that reflects current circumstances;
- (3) amend the Guidelines through rulemaking;
- (4) develop new site-specific Guidelines; and
- (5) adopt the siting criteria of 10 C.F.R. Part 60.

S. J. Brocoum, Ph.D.
March 25, 1994
Page 2

It's recommended that DOE take an approach combining options (3) and (5). As stated above, the Siting Guidelines of 10 C.F.R. Part 960 should be brought into conformance with the current statutory framework provided by the Nuclear Waste Policy Act of 1982, as amended, (NWPAct) and the Energy Policy Act of 1992 (EPAct), through rulemaking, making maximum use of applicable provisions of 10 C.F.R. Part 60.

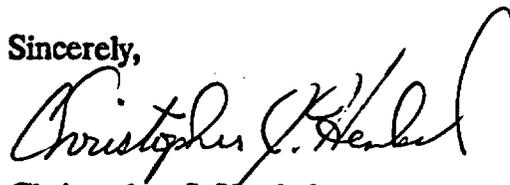
In 1984, DOE adopted its final Siting Guidelines for nuclear waste repositories as codified in 10 C.F.R. Part 960. The Guidelines were developed largely for use in evaluating, on a comparative basis, the suitability of multiple sites for repository development. After their adoption, the Nuclear Waste Policy Act (NWPAct) was amended in 1987 to provide for the characterization of only one site; *i.e.*, the Yucca Mountain site in Nevada. Later, in 1992, the EPAct was enacted providing for special EPA Standards specifically applicable to Yucca Mountain. As a result of these developments, the DOE Siting Guidelines no longer reflect the existing statutory framework pertinent to the DOE repository program.

Based on the foregoing, DOE is encouraged to undertake a rulemaking to conform 10 C.F.R. Part 960 to the current statutory framework provided by the NWPAct and EPAct. This will serve to clarify the program for repository siting, design, construction, operation, and closure. Further, it will eliminate the potential for challenges to Yucca Mountain as a repository site based on provisions of the Guidelines which have been made, in effect, inapplicable by statute, but currently constitute part of the Department's regulations in 10 C.F.R. Part 960.

In revising Part 960, DOE should not eliminate those Guidelines appropriate for evaluating, on a comparative basis, multiple sites. Such Guidelines may be useful in the future should, for example, the Yucca Mountain site prove unsatisfactory. However, the revised Guidelines should provide a specific process for Yucca Mountain, as prescribed by statute. In addition, all of the Guidelines contained in 10 C.F.R. Part 960 should adopt, by reference and to the maximum possible extent, applicable provisions of 10 C.F.R. Part 60. This will both avoid unnecessary duplication, and reduce the possibility for confusion over appropriate requirements.

If there are any questions concerning these comments or related matters, please do not hesitate to contact me on (202) 739-8117.

Sincerely,



Christopher J. Henkel

CJH/kkr

Dr. Jane R. Summerson
June 24, 1994
Page 2

A. PUBLIC INVOLVEMENT -- mechanisms and time for providing input to the Department on the evaluation of site suitability

In 1992, an Office of Civilian Radioactive Waste Management (OCRWM) contractor prepared a "Report of Early Site Suitability Evaluation of the Potential Repository Site at Yucca Mountain, Nevada." Following its issuance, OCRWM published a notice of its availability, and requested comments (see 55 Fed. Reg. 9717).

The nuclear energy industry favors continuation of this practice. Comment on contractor reports addressing suitability factors provides for appropriate public input. The report and comments can then be used by OCRWM in making its determination on suitability. Such a process of periodic reviews and determinations constitutes a sound, reasonable, and methodical approach to evaluating site suitability and provides critical information to DOE/OCRWM management for program planning.

B. ADEQUACY OF GUIDELINES -- the adequacy of the Siting Guidelines (10 CFR Part 960) and their role in evaluating site suitability

In 1984, DOE adopted its final Siting Guidelines for nuclear waste repositories. The Guidelines were developed largely for use in evaluating on a comparative basis the suitability of multiple sites for repository development. After their adoption, the Nuclear Waste Policy Act (NWPA) was amended, in 1987, to provide for the characterization of only one site; *i.e.*, the Yucca Mountain site in Nevada. Later, in 1992, the Energy Policy Act (EPA) was enacted requiring that special EPA Standards be developed that are specifically applicable to Yucca Mountain. As a result of these developments, the DOE Siting Guidelines no longer reflect the existing statutory framework pertinent to the DOE repository program.

Based on the foregoing, the industry encourages DOE to undertake a rulemaking to conform 10 CFR Part 960 to the current statutory framework provided by the NWPA and EPA. However, in revising Part 960, DOE should not eliminate those Guidelines appropriate for evaluating, on a comparative basis, multiple sites. Such Guidelines may be useful in the future should, for example, the Yucca Mountain site prove unsatisfactory. In addition, all of the Guidelines contained in 10 CFR Part 960 should adopt, by reference, to the maximum possible extent applicable provisions of 10 CFR Part 60. For example, rather than the enumeration and evaluation of "Potentially Adverse Conditions" in Subpart C of the Guidelines, it may be advisable to simply reference 10 CFR Part 60.122(c) and the "Potentially Adverse Conditions" listed and considered there. This will both avoid unnecessary duplication and reduce the possibility for confusion over appropriate requirements.

Dr. Jane R. Summerson
June 24, 1994
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Insofar as utilizing the Guidelines in evaluating site suitability is concerned, OCRWM should not apply them in a formalized, rigid process. Rather, in evaluating site suitability, OCRWM should take full advantage of the flexibility available to it for making such determinations. [See Nevada v. Watkins, 914 F.2d 1545, 1562-64 (9th Cir. 1990).] In particular, OCRWM should not rigidly apply individual Guidelines on a guideline-by-guideline basis at this relatively early stage of characterization. Rather, the Guidelines should be utilized as an aid to guide DOE in reaching preliminary determinations, where sufficient information is available. These determinations can then be broadened and refined as additional information becomes available, utilizing an increasing number of Guidelines.

**C. PEER REVIEW OF SCIENTIFIC AND TECHNICAL INFORMATION --
appropriate peer review in site suitability evaluations**

Although peer reviews of site suitability evaluations may be helpful, peer reviews should not be conducted at each and every step of the site suitability evaluation. Peer reviews of the site suitability evaluation process should be reserved for significant suitability determinations. On smaller, less significant determinations, peer reviews may be unnecessary, often redundant, and burdensome. Because DOE and its contractors possess the necessary expertise and ability to perform the required analysis, peer reviews should be focused on the end result not on the step-by-step process of achieving that result. In addition, as the regulator, NRC staff will conduct a detailed, ongoing review of all site suitability work. Further, the Nuclear Waste Technical Review Board will also be conducting an ongoing peer review type process that will add additional assurance.

In addition, peer review is time consuming and, as a result, will add additional time to completing a task already far behind schedule. One of the primary purposes of periodic, early site suitability evaluations is to assist DOE in adjusting the site-characterization program to focus on what are identified as more significant conditions. To accomplish this, the on-going process should be synchronized so that useful information is available in time to provide meaningful input to the OCRWM program and budget cycle. This requires that the timing of evaluations conform to that schedule. Step-by step, independent peer review process will make that result difficult if not impossible.

Further, It is important that any peer reviews conducted not be overly formalized and conducted in accordance with a rigid framework. For example, using a formal rulemaking process to codify the peer review process would be wholly inappropriate. Peer review, if and when conducted, should be flexible and fashioned to the specific site suitability evaluation on a case-by-case basis. However, if a peer review process is established, it should utilize existing, independent, third-party expertise. For example, a

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Page 4

review conducted under the auspices of the National Academy of Sciences Board on Radioactive Management would seem to be a productive approach.

In conclusion, the industry believes that a process of periodic suitability determinations constitutes a sound, reasonable, methodical approach to determining site suitability. However, the process should not be highly formalized but remain flexible to accommodate the needs of the program, particularly at relatively early stages of characterization. In this connection, the Siting Guidelines should be employed judiciously; and the Guidelines themselves should be revised to conform with the current statutory framework provided by the NWPA and EPAct. In addition, peer reviews are generally unnecessary and overly time consuming. If employed, however, they should utilize expertise which already exists in bodies such as the National Academy of Sciences. Further, peer reviews should be conducted under a formalized legal process, such as a DOE rule, but should be fashioned in accordance with the needs of the particular evaluation under review.

If there are any questions or if additional information would be helpful, please do not hesitate to contact me or Mr. Chris Henkel of our staff on (202) 739-8117.

Sincerely,



Theodore J. Garrish

Public Citizen



Buyers Up • Congress Watch • Critical Mass • Health Research Group • Litigation Group
Ralph Nader, Founder

May 23, 1994

Daniel Dreyfus, Director
Office of Civilian Radioactive Waste Management
Department of Energy
Washington, DC 20585

Dear Dr. Dreyfus:

As a participant in Saturday's "OCRWM Stakeholders' Meeting," I strongly urge you to seriously consider the issues raised at that meeting. Your evident unwillingness to do so indicates that DOE's purported commitment to openness and accountability is more rhetorical than real.

In particular, representatives of citizens' organizations and the State of Nevada presented well-supported arguments that DOE should conduct a Programmatic Environmental Impact Statement (PEIS) on its entire management system for high-level radioactive waste. Representatives of the nuclear industry and affected counties joined public-interest groups and Nevada in calling for a rulemaking process to update the guidelines for site suitability.

Both of these recommendations will aid the Department in attaining its stated goals of public participation, openness and accountability. Unlike "stakeholders' meetings," programmatic environmental impact statements and rulemakings provide all parties with documentation of what the government is proposing to do, an opportunity to comment on the record, and the ability to hold the government accountable for its actions.

Many of the participants in Saturday's meeting noted the fact that OCRWM's plans are a moving target, with information coming out piecemeal and becoming outdated before most people even understand it. With a PEIS, you would lay out your waste management scheme in its entirety, so that citizens could know about your plans and give their input. The PEIS process seems to be good enough for DOE on the weapons complex cleanup side, so it should be good enough when it comes to civilian waste.

Neither you nor anyone else offered any substantive arguments against a PEIS or a rulemaking on the guidelines. But your comments at the end of the session indicated that you were already prejudiced against both proposals and would view them with what you called "an economy of spirit." OCRWM has already economized enough on spirit, while economizing insufficiently on ratepayers' dollars. The time and money spent on the PEIS and rulemaking processes would pale in comparison to the time and money lost by DOE's continual floundering around without clear plans.

Participants gave up their Saturdays to attend this session and offered constructive suggestions for making OCRWM's activities more open and accountable. We, and the citizens we represent, deserve better than to have our ideas immediately consigned to oblivion by your "economy of spirit."

Please let me know how you intend to respond to these issues.

Sincerely,

Bill Magavern

Bill Magavern

Director

Critical Mass Energy Project

cc) Secretary Hazel O'Leary

06/09 '94 14:16

015222

RW001
Summerson,



Department of Energy
Washington, DC 20585

June 15, 1994

Mr. Bill Magavern, Director
Critical Mass Energy Project
of Public Citizen
215 Pennsylvania Avenue, S.E.
Washington, D.C. 20003

Dear Mr. Magavern:

Thank you for your May 23, 1994, letter concerning the issues raised at the May 21, 1994, public stakeholders meeting. The recommendations and suggestions made at the meeting constitute constructive input into our decision-making process.

Regarding your suggestion that the Department of Energy conduct a programmatic environmental impact statement, I do not believe I stated my "unwillingness" to consider the suggestion. In fact, we are currently reviewing our environmental impact statement strategy. We will keep our stakeholders informed regarding the status of this issue.

With regard to the issue of implementing a formal rulemaking process to update our site suitability guidelines, the Department issued a Notice of Inquiry on April 25, 1994, seeking the views of interested parties on the evaluation process to determine the suitability of Yucca Mountain, Nevada, as a permanent repository for spent nuclear fuel and high-level radioactive waste. We will factor in the information obtained in response to the Notice of Inquiry as we proceed with the development of the site suitability evaluation process. Written comments should be provided on or before June 24, 1994, to:

Dr. Jane R. Summerson
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

I intend to keep our stakeholders informed regarding these and other issues raised at the May 21, 1994, meeting. Your comments will be constructive inputs to the decision-making process and are genuinely appreciated.

Sincerely,

Daniel A. Dreyfus, Director
Office of Civilian Radioactive
Waste Management



9400806



May 13, 1994

Dr. Jane R. Summerson
US Department of Energy
Office of Civilian Radioactive Waste Management, RW-22
1000 Independence Ave., SW
Washington, DC 20585

RE: Comments on OCRWM Site Suitability Process and Proposed Program Approach

Dear Dr. Summerson:

Thank you for an opportunity to comment on the above documents. My organization has a continuing interest in this project from the standpoint of assuring that the science of the OCRWM might the highest technical standard and be responsive to the needs and interests of my state.

A representative of my organization is unable to attend this meeting due to scheduling conflicts. The following comments are made to help you in the refinement of your plans and to maintain our position as a stakeholder in your program.

Comment 1. The peer review process outlined in the site suitability process document may be adequate to assure that scientific standards are met, but is deficient in being responsive to the needs and interests of Nevadans and the Nevada technical community. My belief is that decisions affecting Nevadans should have a strong participation of Nevadans. The scientific and technical community in the state is part of that voice. Your current list of participants for the May 21, 1994 meeting does not include this group.

I suggest that you give full consideration to modifying the identified options to specifically include the Nevada technical community in your deliberations. Two activities are currently ongoing that may prove helpful:

1. A conference hosted by UNR and UNLV entitled "The Role of Nevada's Engineering and Scientific Community in the Yucca Mountain Suitability Study" to be held May 17-18, 1994.
2. A statewide conference of the University and Community College System of Nevada on May 31-June 2, 1994. The conference is an alliance of UCCSN faculty to identify education, research and training opportunities with the DOE in Nevada.



Harry Reid Center for Environmental Studies
4505 Maryland Parkway • Box 454009 • Las Vegas, Nevada 89154-4009
(702) 895-3382 • Telex 62048164 UNLV/MSM • FAX (702) 895-3094

Dr. Jane R. Summerson, May 13, 1994, page 2

The peer review options in your paper should also be modified to specifically include Nevada scientists. An additional option that should be considered would be the formation of a consortium of universities to conduct the peer reviews and independent research. This approach would allow full participation of Nevada institutions without limiting access to the national technical talent pool. Universities are generally better known to the public than the National Academy, more independent than technical societies and the university affiliations would make broad local participation apparent.

Comment 2 The proposed program approach is incomplete. It appears to represent a reasonable approach given the current repository program status, however, it also raises many questions. For example:

1. What changes are being considered to demonstrate measurable progress toward a decision on the suitability of the Yucca Mountain site? It appears that some criteria are not currently being evaluated. Would this mean more work would be started?
2. What would happen to fuel transported in large truck casks?
3. Would the EIS include the repository and transportation?
4. Does the DOE plan to ship fuel before the year 2000? If so, what is the status of the 180(c) activities?

Please keep me informed as to your activities on these topics. Please call me if you would like to discuss this matter further.

Sincerely,



Dr. Donald H. Baepler
Director

IS AN INSTITUTE FOR THE STUDY OF HIGH-LEVEL RADIOACTIVE WASTE DISPOSAL NEEDED IN SOUTHERN NEVADA?

Authors: Maxwell B. Blanchard and A. C. Robison, U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Yucca Mountain Site Characterization Project Office, Las Vegas, Nevada, and Dr. Donald H. Baeppler, Director, The Harry Ried Center for Environmental Studies at The University of Nevada, Las Vegas

This paper examines key questions about the need for a formal institute that would study storage and disposal concepts for high-level radioactive waste (HLRW) in the United States and throughout the world. The questions that have been analyzed so far include:

I. Why is an institute needed?

Analysis: A major decision will have to be made at the turn of the century (i.e., approximately the year 2100) about closure of the repository. Before this major decision could be made, a site would have to be shown to be suitable by the U.S. Department of Energy (DOE). Then the U.S. Nuclear Regulatory Commission (NRC), after reviewing the license application submitted by DOE for construction of a repository, would also have to grant authorization to proceed with construction, and later, repository operations. Several other entities were also specified in the Nuclear Waste Policy Act (NWPA) of 1982, as amended in 1987, and given roles in the process of siting, constructing, operating, and closing a repository. Roles of the major entities are described below:

Environmental Protection Agency (EPA) - to promulgate rules to protect public health and safety from radionuclide releases for a period of 10,000 years into the future. Changes to the EPA regulations are being contemplated as a result of litigation (i.e., Environmental Defense Fund versus EPA, 852 F.2d 1316 [D.C., Cir. 1988]). Also, the Energy Policy Act, 1992, instructed the EPA to contract with the National Academy of Sciences to determine: (a) if a dose-based standard is reasonable; (b) whether postclosure oversight of a repository is feasible; and (c) if it is possible to make scientifically supportable predictions for 10,000 years about breaches of engineered and geologic barriers as a result of human intrusion.

NRC - to review the safety of the design, construction, operation, and closure of a repository employing a formal licensing process, and if found to meet the regulatory criteria, grant an authorization to DOE to proceed.

DOE - to implement the NWPA, as amended, and thereby, to site, design, construct, and operate a repository and a monitored retrievable storage facility. The Energy Policy Act, 1992, instructed DOE to continue postclosure oversight of a

repository to prevent activities that could breach the engineered or geologic barriers and result in increased exposure to the public beyond allowable limits.

State of Nevada and affected counties (i.e., counties now officially recognized as "affected") - to provide oversight of the implementation of the NWPA for site characterization and the repository, if eventually located at Yucca Mountain.

Nuclear Waste Technical Review Board (a presidentially-appointed board) - to assess semiannually the technical quality of the science and engineering being performed by DOE.

The ultimate decision about final closure, or nonclosure, of a HLRW repository is likely to be highly controversial and contentious. The NWPA calls for DOE to justify that closure can be accomplished by satisfying the NRC's performance requirements. The NRC will review DOE's application for closure and, if satisfied, authorize DOE to proceed. The NRC's regulation calls for DOE to provide adequate technical basis for the NRC to achieve "reasonable assurance" that the long-term release limits specified by EPA will be achieved by the repository. Inherent in this process is the need for the oversight bodies and the public to achieve "trust and confidence." The topic of trust and confidence has received much attention, but the best course of action for building trust and confidence still remains elusive. This paper proposes an approach to building public trust and confidence, which is an aspect of the current program that has not yet been well articulated in either the NWPA or the Energy Policy Act, 1992. The approach is to focus on the bottom-line decision - the timing of the repository closure.

In the view of the authors, a key element for addressing public trust and confidence may include creating an independent entity within Nevada possessing widely recognized credentials. This entity will need to develop a basis for making independent assessments about whether the EPA-NRC-DOE approach has, or has not, achieved a workable solution to long-term safe containment and isolation of HLRW. The assessments performed by this entity would be: (a) objective, (b) educational, and (c) technically thorough and at the leading edge of technology. In this paper, to be objective (a) means that the entity would be free of real or perceived conflict-of-interest, neither pro or con, as to the EPA-NRC-DOE activities or the impacts on the State of Nevada and affected counties. To be educational (b) means the entity would provide information that is clear, unambiguous, at the appropriate level for the reader, and should encourage discussions about issues of national and international policy associated with HLRW storage and disposal. To meet the third criterion (c) requires that analyses and assessments are thorough and at an appropriate level to evaluate design, construction, operation, postclosure monitoring and performance predictions that are at the state-of-the-art in both engineering and science. These three attributes (objective, educational, and technically

thorough and leading-edge technology) form the basis for a link to trust and confidence by the public, and hence, become three of the necessary components of an eventual charter of the entity, hereafter called an institute.

An important challenge for this institute will be to foster the melding of science, engineering, government policy, news media, and public concerns in such a way as to provide an understanding that allows a reasoned trust and confidence to be achievable. Whether this approach will be enough to achieve the goal of trust and confidence about a subject as controversial as HLRW will remain an issue for future resolution.

II. What could this institute do to achieve the goal?

Analysis: Among the more important functions that will need to be provided by the institute are:

A. Document the thoroughness of the scientific studies, the engineering design and operational approach, and provide assessments of the application of technology. This would include analysis of uncertainties encompassed in scientific knowledge about natural and man-made materials and processes that will be used to make predictions about long-term containment and isolation of HLRW from man's environment. To accomplish this objective, the institute would need to be very knowledgeable of the concepts for storage and disposal employed by countries of the world that use nuclear energy and are seeking a solution, employing disposal or reprocessing. The institute could play an important role in providing input to the regulators about whether the repository should be permanently closed and additional constraints that may need to be considered.

B. Conduct laboratory investigations and field studies in engineering, physical, environmental, social and political sciences. These activities would be aimed at identifying and testing models, technology, and concepts to evaluate the effectiveness of the approaches being used for achieving confidence in containment and isolation of HLRW in storage and at repository sites in the United States and other countries.

C. Conduct colloquia, symposia, focus groups, seminars, lectures, and other forms of appropriate discussion for the purpose of analyzing international, national, state, and local policies related to HLRW storage and disposal.

D. Provide an entity wherein a body of knowledge can be developed and retained for future generations that will serve as a basis for making ultimate decisions about the closure of the repository.

III. How could an institute of this nature work?

Analysis:

A. From among many possibilities, two models seem to be very successful examples of institutes that have been formed with a specific mission in mind. They have operated successfully for over a decade, are widely supported by universities, government agencies, private industry, and foreign countries, and are viewed with respect by the scientific and technical community, political leadership, news media, and the public. These two models are University Corporation for Atmospheric Research (UCAR) and University Space Research Association (USRA). Salient aspects of these two models are described in Table A and contain many of the features needed for an institute with a charter addressing the HLRW issues.

B. Adapting features from the UCAR and USRA models, a preliminary vision about six elements of such an institute for the study of HLRW disposal concepts has been developed and is discussed below:

1. Role: Objective, educational, and knowledgeable assessments of leading-edge science and technology used to store and dispose of HLRW.

2. Operations Concept: (a) Nevada University System and DOE - provide operational management, and a Board of Trustees for the institute; (b) U.S. universities, national, state, and local governments - provide membership and rotating scientific and engineering staff to conduct research and publish results; and (c) international governments and international universities - provide rotating scientific and engineering staff to conduct research and publish results describing the different approaches being used by countries involved with HLRW storage and disposal.

3. Products: Leading-edge research, modeling, and testing with results described in publications, lectures, forums, and colloquia about HLRW concepts.

4. Divisions: Provides ongoing analyses of disposal issues related to topics such as:

Technology
Performance Assessment
Physical Science
Social Science
Engineering
Political Science

Socioeconomics
Transportation
Environment
Public Affairs
Intergovernmental Interactions
International HLRW Disposal
Issues

TABLE A

TWO MODELS HAVING FEATURES THAT COULD BE APPLICABLE
TO AN INSTITUTE DEVOTED TO THE STUDY OF HLRW
CONTAINMENT AND ISOLATION

UCAR

- .Focus of Charter: Atmospheric & Climate Research
- .Governed by Board of Trustees from participating universities
- .Corporate office: provides overall management, administration, and operations of facilities and research programs
- .Location of HQ: Boulder, CO
- .Total staff: about 1,000, many visiting scientists
- .Principal product: scientific publications - several hundred per year
- .Funding sources: agencies - NSF, NASA, FAA, Navy, NOAA, EPA, and others; total funding about \$100M per year
- .Major facilities:
 - 2 Super Computers
 - 3 Research Airplanes
 - 3 Radars
- .UCAR program areas:
 - Science - Climate, Meteorology, Solar Physics, Atmospheric Chemistry, Tropical Global Ocean Atmosphere
 - Research Facilities - NCAR
 - University Navstar Consortium
 - Education
 - Public Policy and Governmental Affairs
 - Technology Transfer
 - Partnership in Research and Operation Partnerships
- .University membership: 60

USRA

- .Focus of Charter: Space Science & Technology Research
- .Governed by Board of Trustees from participating universities
- .Corporate office: provides overall management, administration, and operations of facilities and research programs
- .Location of HQ: Columbia, MD
- .Total staff: about 300, many visiting scientists
- .Principal product: scientific publications - several hundred per year
- .Funding sources: NASA HQ, 6 NASA Field Centers, 3 Navy sites; total funding about \$30M per year
- .Major facilities:
 - Lunar & Planetary Institute, Houston, TX
 - Institute for Computer Applications in Science & Engineering; NASA-Langley; Hampton, VA
 - Research Institute for Advanced Computer Science, NASA-Ames Research Center; Mountain View, CA
 - Center of Excellence in Space & Data & Information Sciences at NASA-Goddard; Greenbelt, MD
- .USRA program areas:
 - Lunar & Planetary Science
 - Computer Applications
 - Advanced Computer Science
 - Space Life Science
 - Microgravity
 - Atmospheric Science
 - Astronomy
 - Education
- .University membership: 75

5. Staff:

Permanent Operations Staff--25% Nevada residents

Rotating Research and Engineering Staff--75% (1/2 participating U.S. universities; national, state, and local governments, industry and research organizations provide research scientists, engineers, fellows, professors on sabbaticals, and Ph.D./M.S. candidates; 1/2 foreign government and universities)

IV. When could an institute form and begin functioning to meet the goals?

Analysis: Now is the time to begin formulating the plans and acquiring the political and public support for such an institute. Developing a model, organization, and operational approaches will be a necessary first step toward gaining participation from national and foreign universities and governments. An effective liaison with international bodies (e.g., International Atomic Energy Agency, and Nuclear Energy Agency) will be necessary. An analyses that would provide facilities, scheduling, and cost estimates would also be needed to support the details once the management and technical issues have been scoped. Although bringing the institute into an operational mode could take many steps, the first that seems obvious is to establish the administrative and operational organization during the next few years.

V. Where could an institute be located?

Analysis: The criteria will most likely include:

- A. Proximal to the site, in Southern Nevada;
- B. Near major air travel hub; and
- C. Near developed city services, including hospitals, schools, shopping, libraries, and universities.

References

Nuclear Waste Policy Act of 1982, P.L. 97-425.

Nuclear Waste Policy Amendments Act of 1987, P.L. 100-203 and P.L. 100-507.

Energy Policy Act of 1992, P.L. 102-1018.

Annual Report USRA, 1991.

Annual Report UCAR, 1991.

YANKEE ATOMIC ELECTRIC COMPANY

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580 Main Street, Bolton, Massachusetts 01740-1398

June 24, 1994
FMD 94-328

Dr. Jane R. Summerson
Department of Energy
Office of Civilian Radioactive Waste Management RW-22
1000 Independence Avenue SW
Washington DC 20585

Subject: Response to Notice of Inquiry on the Suitability of the Yucca Mountain Site for Development as a Repository for Spent Nuclear Fuel (59 FR 19680)

Dear Dr. Summerson:

Yankee Atomic Electric Company (Yankee) appreciates the opportunity to comment on the subject Notice of Inquiry (NOI). Yankee is the owner of the Yankee Nuclear Power Station in Rowe, Massachusetts and provides engineering and licensing services to nuclear power plants in New England. Because the Rowe facility is permanently shutdown and in the process of decommissioning, we are vitally concerned about the availability of disposal facilities for spent nuclear fuel, and therefore offer the following comments:

Site Suitability Evaluation - Public Involvement

The current process for public involvement need not be modified. Continuation of the process of notice of the availability of the evaluation and the opportunity to comment - as was done for the 1992 Site Suitability Evaluation - is an adequate and reasonable approach. This system gives interested parties the opportunity to participate in the process. Also, it does not preclude the parties from requesting that a public forum be established on a case-by-case basis to review site suitability evaluation progress. Should a reasonable number of requests be made for a stakeholders' meeting on this subject, DOE has the discretionary authority to hold such meetings.

Peer Review

DOE through its contractors has, in effect, already established a process for peer review. Additionally, the Nuclear Waste Technical Review Board which is independent of DOE, already performs such review functions. Establishing another independent peer review group will only result in needlessly inflating the cost

of a program which has already been stretched beyond any practical limit.

Other Site Suitability Considerations

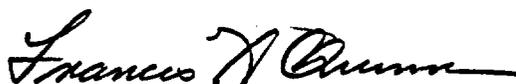
The 10,000 year licensing requirement for Yucca Mountain lacks scientific and public credibility. Yankee supports the phased licensing approach whereby a license to accept and store high level waste for a period of 50-100 years could be issued first, before the permanent license, so that DOE could then address long term performance (10,000 years) through parallel confirmatory studies.

We endorse the Performance Standard established in the Electric Power Research Institute (EPRI) report on the Proposed Health and Safety Standard for Yucca Mountain. This standard should provide reasonable assurance of sustained, low health risk to present and future populations and be considered in determining the bases for site suitability evaluation. EPRI proposes a phased approach toward demonstrating adequate health and safety protection for the public. EPRI recommends that for the first 1,000 years of emplacement, a very high assurance of effective repository performance can be demonstrated with an engineered barrier system. For the following geologic period - 1,000 to beyond 10,000 years - the behavior of the engineered barrier and the natural systems can be evaluated as a design objective, not a license standard.

(A fuller presentation of this approach can be found in their report and the attached comment letter by Dr. Kadak of Yankee.) EPRI suggests that the repository effectiveness can best be evaluated by means of probabilistic estimates which reflect these inherent long term uncertainties.

We appreciate the opportunity to offer these comments on the subject NOI and would be pleased to discuss them further at your convenience.

Sincerely,


Francis X. Quinn, Manager
Fuel Procurement Group

Attachment

YANKEE ATOMIC ELECTRIC COMPANY



580 Main Street, Bolton, Massachusetts 01740-1398

April 6, 1994

ANDREW C. KADAK, Ph. D.
PRESIDENT and
CHIEF EXECUTIVE OFFICER

Robert Fri, Chair
Committee on the Technical Bases for Yucca Mountain
National Research Council
2101 Constitution Avenue
Washington, DC 20418

Dear Mr. Fri:

As a follow-up to my presentation to you at the initial meeting of the National Academy of Sciences Panel on Yucca Mountain criteria, I am offering, for your consideration, the following position paper on a recommended licensing process for Yucca Mountain. While I understand it is not in the Panel's charter to draft regulations, I believe the Panel can and should outline a regulatory framework in which your recommendations on siting criteria should be implemented.

As you may recall from my original paper, I recommended, as the National Academy of Sciences itself has previously recommended, a more realistic approach to the licensing of Yucca Mountain. My specific proposal attempts to build on what we know, what we can demonstrate scientifically and what we need to know concerning the potential for ultimate long term disposal. My approach seeks to avoid a prolonged debate on the demonstration of 10,000 years. Instead, I propose a process wherein the capability of science determines the duration for high confidence with the proper application of scientific techniques and modeling of long-term behavior to determine whether the repository itself can be justified well beyond 10,000 years.

I hope you will share this paper with members of your Panel and incorporate the licensing process, which is integral to the establishment of criteria, such that we can provide definitive guidance to the EPA and the Nuclear Regulatory Commission as to how to move forward in the characterization, design, licensing and construction of a Yucca Mountain repository for high level nuclear waste should the site be found suitable.

I would be pleased to answer, either in writing or in person, any questions you may have concerning this proposal.

Sincerely yours,

Andrew C. Kadak

ACK/kg
Enclosure

c: Myron F. Uman

PROPOSED YUCCA MOUNTAIN LICENSING PROCESS

Introduction

The National Academy of Sciences Panel on Standards for Yucca Mountain will be recommending to the Environmental Protection Agency criteria for siting a high level nuclear waste repository in Yucca Mountain. These criteria will be very important in terms of establishing the suitability of Yucca Mountain for the purpose of permanent nuclear waste disposal. Earlier versions of the criteria were criticized by the National Academy of Sciences in the past as being unworkable and non-demonstrable due to the extremely long time periods proposed for the standard. Simply put, they did not conform to what science itself could demonstrate for 10,000 years with any degree of certainty.

While the Panel surely recognizes the difficulties in establishing a standard for 10,000 or more years, equally important is how to apply such a standard in the regulatory process. Never has society attempted to undertake a task which requires assurance of performance for such a long period. The existing regulatory process has never been challenged to such a standard.

Based on past National Academy of Sciences reports, the existing system may not be capable of handling, either technically or procedurally, the requirements that have been proposed particularly as they relate to the long time periods involved. Thus the standard that this Panel seeks to develop, if it is to be implemented, must recognize not only the limitations of science, but also the limitations of the licensing process, for the standard to be effectively implemented.

While drafting regulations for the regulatory authorities is outside the scope of the Panel's charter, outlining a regulatory framework for the implementation of the standard which the Panel recommends is not. With this as an introduction, the following is presented as that framework.

REGULATORY FRAMEWORK

Objective

The objective of the revised licensing process for Yucca Mountain is to recognize the realities of what science can be expected to deliver in the context of an adjudicatory process without compromising long term public health and safety objectives.

Performance Based Standard

Establish a performance based standard that has as its objective the public health and safety of the repository on people. This performance based standard would use an individual dose and, as appropriate, a population dose to the affected average population in the vicinity of Yucca Mountain.

Licensing Basis

Establish a licensing basis for the repository based on the capability of science to provide reasonable assurance of what science is capable of demonstrating in a licensing proceeding. This licensing basis would form the adjudicatory framework from which to judge whether or not the repository should be built. The time frame for the licensing basis would be established by the scientific community. The licensing basis time frame is that minimum time where science has high confidence in its assessments. This time frame could range anywhere from 1,000 to 5,000 years based on the geology, hydrology, seismology, volcanology and climatology projections. It is expected that within this time frame high confidence of waste containment could be demonstrated.

Design Objective

Establish a performance analysis objective for the repository that would extend beyond the licensing basis and beyond 10,000 years.

This performance analysis objective would be part of the licensing process to the extent that it would indicate to the licensing board that there is, with larger uncertainty, a basis for concluding that the repository, once built, could operate and keep the waste safely stored for tens of thousands of years. This performance analysis objective could be viewed in very much the same way as the PRAs for beyond design basis events for reactors. It would also provide valuable information for the original design taking into consideration the possible affects of long term behavior of critical parameters such that improvements could be made in the original licensing basis design. This analysis would increase the assurance of long term performance as well as screen sites for suitability for the long term.

Licensing Process

The adjudicatory hearings will focus on the licensing basis in terms of burden of proof. This does not mean, however, that the storage system will be limited to that time frame, but rather the overall system will be designed keeping in mind the 10,000 to 100,000 year performance analysis objective. The long term performance modeling would be submitted to the licensing board for information on the likelihood of the site being capable of confining the spent fuel for geologic time periods.

License Issued

Utilize a combined construction and operating (loading) license such that there would be one hearing for both. The burden of proof would be the licensing basis with an assessment of the long term performance of the repository.

Operation and Monitoring

Once the three year hearing process is complete, loading of the repository would be permitted under the license subject to the full retrievability as required by the law. During the time of loading, monitoring and performance model validation would be taking place until the repository is filled.

Closure Hearing

Upon filling the repository and after sufficient data is collected in the monitoring and validation program, a closure or termination of license hearing is held. This closure hearing would verify the licensing basis and update the performance analysis objective modeling to provide assurance that the repository can be safely closed and permanently sealed. This is the significant licensing action since all past decisions and actions are based on the retrievability concept.

Discussion

What has been done with this standard is eliminate the 10,000 year arbitrary requirement and replaced it with a performance analysis objective which goes beyond 10,000 years to assure public health and safety. This performance analysis objective would not need to be litigated as a licensing basis. The rule should state that due to uncertainties in predicting behavior for tens of thousands of

years, only reasonable assurance of performance is required based on sensitivity and probabilistic analysis since it is only used to assess long term performance. Under any licensing scenario, prudent engineering judgement decisions need to be made today for the long term. The important regulatory action is the decision to permanently close the facility, not load it.

Test and Evaluation Facility

The credibility of the licensing process would be greatly enhanced if a certain amount of spent fuel, as part of the research and development effort, was emplaced in Yucca Mountain to test capability of handling systems, thermal loading, and other technical questions. EPRI is preparing a staff paper on the size of such a facility in terms of metric tons of spent fuel required, to obtain useful scientific information about repository performance.

Once this paper is complete, a technical case can be made that might result in the modification of a 10 metric ton limit of spent fuel for research and development at the mountain. It is conceivable that up to 100 metric tons of spent fuel would be necessary to generate the type of data required to provide valid scientific information.

Implementation

The approach outlined above is a significant departure from present EPA and NRC practices. The NRC currently has regulations in place which establish subsystem performance standards; namely, those requirements that govern site selection (1,000 year water migration time), package design, no burn-up credit for packaging in the analysis, etc. These subsystem requirements need to be eliminated or significantly modified to allow for an integrated overall performance assessment of the combined facility. This necessarily

includes the package and the geological features of the site to establish a credible public health and safety impact of the repository operation over thousands of years.

{YUCCAMTN.107}

Intertech Services Corporation

PLANNING • ECONOMICS • PROGRAM MANAGEMENT

June 22, 1994

Dr. Jane R. Summerson
Department of Energy
Office of Civilian Radioactive
Waste Management
1000 Independence Ave., SW
Washington, DC 20585

RE: Comments to Draft Paper on Suitability Process

Dear Dr. Summerson:

On behalf of Lincoln and White Pine counties, I have reviewed the subject document and am submitting the following comments thereto. At the outset, let me note that the counties appreciate efforts by DOE to seek pre-decisional involvement of affected parties. Such involvement is deemed imperative to effective exercise of rights of participation afforded the counties pursuant to the Nuclear Waste Policy Act, as amended. It is important to note that pre-decisional involvement of the counties is not intended to facilitate DOE site characterization activities but rather to ensure protection of the health, safety and welfare of residents.

Page 1, 2nd paragraph - In addition to data collection and analyses, the technical component should include study design. Recognition of this activity will help to ensure that pre-decisional involvement in study design is also sought by DOE.

Page 2, Opportunities for Predecisional Involvement ... - This section appears to include most opportunities for involvement. Others might include DOE participation in county sponsored technical workshops and timely DOE responses to technical questions submitted in writing by counties.

Page 2, Information Required by the Public ... - Topics to be considered and the need for public workshops should be user defined. Examples of the types of technical concerns that might arise include sources and potential magnitude of uncertainty in suitability studies; management of uncertainty; methods for evaluating suitability data and processes for reaching conclusions about suitability; provisions for independent verification of site suitability findings; sufficiency of study plans for supporting evaluations about site suitability; and processes for allocating scarce financial resources among competing suitability studies, among others. Methods developed for pre-decisional involvement should be sufficient to accommodate these areas of interest.

Page 2
Dr. Jane Summerson
June 22, 1994

Pages 3-4, Technical Review - The emphasis on peer review panels as a means to achieve credibility is important. However, DOE must be prepared to accept and abide by the findings and recommendations of such groups.

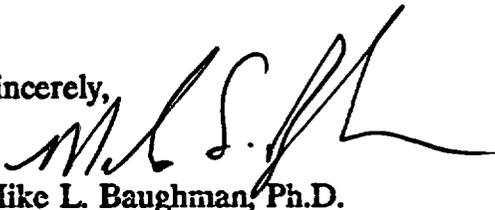
Pages 3-4, Technical Review - Of the five approaches to empaneling a peer review, the method most likely to garner broadest public acceptance as credible would be a peer review process independent of DOE, managed by a group such as the National Academy of Science.

Pages 4-5, Regulatory Review - DOE's meaning of the term "Regulatory Review" is not clear. Affected parties will be afforded opportunity to participate in "regulatory review" as a facet of NRC consideration of DOE's license submittal. County review would not be of a regulatory nature (such a role would be reserved for NRC only) but likely as one of intervenor. In this case, NRC will establish review procedures.

Review of draft license application information may be another possibility. As with NEPA compliance, DOE might wish to consider holding one or more license application content scoping hearings.

I trust these comments to be of value.

Sincerely,



Mike L. Baughman, Ph.D.
President

cc: Mr. Jason Pitts, Lincoln County
Mr. Ferd Mariani, White Pine County
Ms. Judy Allen, City of Caliente