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LeBOEUF, LAMB, LEIBY & MacRAE

A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

1333 NEW HAMPSHIRE AVENUE, N. W.

WASHINGTON, DC 20036

(202) 457-7500

TELEX: 440274 TELECOPIER: 202-457-7543

520 MADISON AVENUE
NEW YORK, NY 10022

1000 KEARNS BUILDING
136 SOUTH MAIN
SALT LAKE CITY, UT 84101

411 PEQUOT AVENUE
SOUTHPORT, CT 06490

ONE EMBARCADERO CENTER
SAN FRANCISCO, CA 94111

LeBOEUF, LAMB, LEIBY & MacRAE (UK)
47 BERKELEY SQUARE
LONDON W1X 5DB, ENGLAND

168 MILK STREET
BOSTON, MA 02109

336 FAYETTEVILLE STREET MALL
P. O. BOX 750
RALEIGH, NC 27602

150 STATE STREET
ALBANY, NY 12207

HOLZAPFEL, PERKINS & KELLY
108 NORTH UNION AVENUE
P.O. BOX 685
CRANFORD, N. J. 07016

March 20, 1985

Mr. John G. Davis
Director
Office of Nuclear Material
Safety and Safeguards
Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

Re: Electric Utility Companies' Nuclear Transportation Group Comments On DOE Draft Environmental Assessments

Dear John:

Enclosed for your information is a copy of the comments of the Electric Utility Companies' Nuclear Transportation Group on the Department of Energy's draft environmental assessments ("EAs") issued pursuant to §112 for the Nuclear Waste Policy Act of 1982 ("NWPA"). As indicated in the cover letter to our comments, we limited our review to the EAs associated with the five sites proposed for nomination for site characterization for selection of the nations's first repository site in the belief that DOE should focus its limited time and resources on finalization of the five EAs it is required to prepare under the NWPA. Attached to our comments is a report prepared by the Group's consultant, Pickard, Lowe and Garrick, Inc., that reviews the computer codes utilized by DOE in predicting the costs and risks of transportation to the repository sites, as well as certain other technical issues.

Sincerely,

Leonard M. Trosten

Enclosures

BWIP 1290
NNWSI 595
SALT 986

NORTHEAST UTILITIES
THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

P.O. BOX 270
HARTFORD, CONNECTICUT 06101
(203) 666-6911

ROBERT W. BISHOP
SECRETARY AND COUNSEL

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Encl. to ltr. to Davis from Troston - 3/20/85

March 20, 1985

Comments - EA
U.S. Department of Energy
Attention: Comments--EA
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Re: Notice of Availability of Draft Environmental Assessments for Proposed Site Nominations, 49 Fed. Reg. 49,540

Dear Sir or Madam:

This letter provides the comments of the Electric Utility Companies' Nuclear Transportation Group (the "Group")[1/] on the draft environmental assessments ("EAs")

1/ The Group currently consists of 37 investor-owned and publicly-owned electric utilities responsible for the construction or operation of 99 power reactors. The members

(Footnote continued on next page)

issued by the Department of Energy ("DOE") pursuant to § 112 of the Nuclear Waste Policy Act of 1982 ("NWPA").[2/] We have limited our comments to the EAs associated with the five sites proposed for nomination for site characterization for selection of the nation's first repository site in the belief that DOE should focus its limited time and resources on finalization of the five EAs it is required to prepare by the NWPA. In addition, because the Group's mandate is to provide leadership in the electric utility industry's efforts to ensure the safe, efficient and economical transportation of nuclear fuel cycle

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(Footnote continued from previous page)
are Alabama Power Company, Arizona Public Service Company, Baltimore Gas & Electric Company, Boston Edison Company, Carolina Power & Light Company, Commonwealth Edison Company, Consolidated Edison Company of New York, Inc., Duke Power Company, Duquesne Light Company, Florida Power & Light Company, Georgia Power & Light Company, Gulf States Utilities Company, Houston Lighting & Power Company, Indiana & Michigan Electric Company, Kansas City Power and Light Company, Kansas Gas and Electric Company, Middle South Services, Inc., Nebraska Public Power District, New York Power Authority, Niagara Mohawk Power Corporation, Northeast Utilities, Northern States Power Company, Pacific Gas & Electric Company, Pennsylvania Power & Light Company, Philadelphia Electric Company, Public Service Company of Colorado, Public Service Electric & Gas Company, Rochester Gas and Electric Corporation, Sacramento Municipal Utility District, South Carolina Electric & Gas Company, Southern California Edison Company, Texas Utilities Generating Company, Union Electric Company, Virginia Electric & Power Company, Wisconsin Electric Power Company, Wisconsin Public Service Corporation and Yankee Atomic Electric Company. The Edison Electric Institute supports the Group financially and participates in its activities.

2/ These comments were prepared with the assistance of the Electric Power Research Institute, which endorses their content.

materials, these comments are addressed solely to the transportation-related provisions of the five EAs. With respect to the numerous other issues addressed in the EAs, the Group endorses the comments filed on behalf of both the Edison Electric Institute and the Utility Nuclear Waste Management Group.

The Group has reviewed the transportation aspects of the EAs, including Appendix A, in detail and believes that DOE should be commended for having done an excellent job in collecting relevant transportation data, analyzing the data to determine expected environmental impacts, and applying the Transportation Guideline. In fact, given the preliminary nature of the environmental analysis required by the NWPA at this initial phase of the repository siting process, it appears that DOE has done such a thorough job in preparing the EAs as to exceed the requirements of the NWPA. DOE deserves special credit for its inclusion of an Appendix focused solely on the issues associated with the transportation of nuclear fuel cycle materials. The extra effort demonstrates DOE's good faith effort to address relevant transportation issues, both factual and legal, that may be of concern to the public.

In light of the overall adequacy of the EAs, when judged by the requirements of the NWPA and DOE's repository siting guidelines, the Group has made an effort not to burden DOE with comments addressed to editorial changes, typographical

errors, and the like. Rather, we have attempted, to provide generic comments applicable to all the EAs that address those major areas where clarification, more information, or further analysis would be helpful to DOE and the public. We do not believe, however, that the issues addressed by our comments represent fatal flaws in the adequacy of the EAs.

These comments are divided into two sections. The first section includes generic comments on the transportation provisions in the individual chapters of the EAs, and the application of the Transportation Guideline to the relevant data. In the second section we address Appendix A, which provides generic background information on the transportation of nuclear fuel cycle materials. Our generic comments on Appendix A are divided into major topical categories and specific comments are added where appropriate to help DOE in providing a more complete and thorough background discussion. Neither of these sections addresses the issue of defense waste shipments, because the Group believes that it is premature for the DOE to attempt in the EAs to evaluate the potential impact of defense waste shipments to a repository in light of the fact that a decision has not been made by the President that defense wastes will be disposed of in the repository. Although it appears, in any event, that the impact of defense waste shipments would not affect the ranking of sites, it would be appropriate to postpone detailed analysis until such a decision

were made. If DOE believes, however, that it should at this time assess the costs and risk of the transportation of defense waste to the potential repository site, DOE should determine the appropriate amount of waste assumed to be shipped from commercial and defense sources and systematically use the same figures for the number of shipments throughout each EA. Moreover, these figures should be consistent with those analyzed in Appendix A.

Attached to the Group's comments, and incorporated herein, is a report prepared by the Group's consultant, Pickard, Lowe and Garrick, Inc. that reviews the computer codes (RADTRAN II and the WASTES code), and documentation for those codes, that DOE uses to predict the costs and risks of transportation to the potential repository site, as well as other technical issues.

COMMENTS ON THE EAs

COMMENTS ON CHAPTER 5

1. Several EAs state that pursuant to the DOT's highway routing rule for radioactive materials transport ("HM-164"), state designation of alternative preferred routes must be approved by DOT. (See, e.g., Richton Dome at 5-77; Deaf Smith at 5-77) This statement is incorrect; HM-164 does not require states to seek DOT approval of

alternate designated routes. A good description of the requirements of HM-164, including the state designation process, is provided in the Yucca Mountain EA at p. 5-71 to 5-72.

Recommendation:

DOE should explain the framework of HM-164 in more detail in Appendix A, and reference Appendix A in Chapter 5 of each EA when discussing HM-164.

2. Inconsistencies Within Each Document

Each EA was based on certain assumptions regarding the total volume of waste to be buried in the repository. These numbers and percentages are not similar to those used in Appendix A.

In all subsections of Chapter Five, the percentage of commercial spent fuel to be buried is not consistent with the DOE document, Generic Requirements for a Mined Geologic Disposal System which each EA analyzes briefly to determine this document's compatibility with the EA. The General Requirements document assumes 100% commercial waste will be buried in the repository. However, the EAs do not appear to use this number in calculating transportation impacts.

Recommendation:

DOE should determine and systematically use the same figures for the amount of waste from commercial sources and number of shipments throughout each EA, and these figures should be consistent with the figures in Appendix A.

COMMENTS ON CHAPTER 6

1. Chapter 6 evaluates the suitability of each of the candidate sites for characterization by reference to the DOE's general siting guidelines. Thus, Chapter 6 does not present and discuss the relevant data; rather, it applies the guidelines to the data presented in that chapter, earlier chapters of the EAs or, in some cases, refers to the conclusions in Chapter 7. In general, this approach is an appropriate, useful and informative method of evaluating each site. However, it requires frequent reference to other chapters to find the data underlying DOE's conclusions in Chapter 6.

Recommendation:

DOE should include all relevant information and data underlying its conclusions on the Transportation Guideline in Chapters 3-5, and summarize this information and data in

Chapter 6, with citations to the detailed discussion of the data in other sections of the EA.

2. The Transportation Guideline describes favorable condition (7) as the "absence of legal impediment with regard to compliance with Federal regulations for the transportation of waste in or through the affected State and adjoining States." By the term "legal impediment," the guideline is apparently referring to state or local laws or regulations. DOE should consider whether waste transport to a repository might be hindered by state or local legal requirements, and it is important for DOE to determine the existence of such restrictions. However, only those state or local requirements that are enacted pursuant to a valid grant of authority and are not preempted by federal law, and are otherwise valid, should be considered as potential impediments to compliance with Federal regulations for waste transport and therefore should be evaluated in ranking repository sites. If every state or local restriction were considered to be an impediment, even if it were not legally valid, states and localities could be encouraged to enact such restrictions in order to affect the outcome of the repository siting process, contrary to the requirements of the U.S. Constitution and Federal statutes.

Recommendation:

DOE should make it clear in the EAs that in applying Favorable Condition (7) of the Transportation Guideline it will not consider a state or local restriction of the transport of spent fuel or high-level radioactive waste to be a "legal impediment", unless it has been determined to be valid. In other words, only valid state and local laws and regulations restricting such transport should be considered relevant factors in ranking repository sites. Only if a state or local requirement affecting waste transportation is (i) not inconsistent with federal law or otherwise invalid, or is inconsistent but has been granted an exemption from preemption by the DOT or a court; and (ii) is valid under state law should it actually be considered an impediment to compliance with Federal regulations for waste transport.

3. The Transportation Guideline is designed to evaluate the relative costs and risks, on a national and regional basis, of transporting spent fuel to the various repository sites. It is not designed to evaluate the transportation impacts, on either a national or regional basis, of other shipments (i.e., non-radioactive) to and from the repository site such as machinery and equipment, garbage, and excavated material. (See discussion in Hanford EA at

p. 5-48.) However, the effect of these shipments on host communities is discussed in other sections of the EAs, such as those addressing expected effects on socioeconomic conditions or impacts of the disposal of excavated material. We endorse this approach because the purpose of the Transportation Guideline is to focus on an evaluation of the effects of spent fuel transportation.

Recommendation:

DOE should explain that the Transportation Guideline deals only with the transportation of spent fuel and high-level radioactive waste to the repository site, and describe why it determined that such transportation, rather than all potential movements of people and materials, should be evaluated under the Transportation Guideline.

4. Favorable Condition (5) of the Transportation Guideline requires DOE, in evaluating the total projected life-cycle cost of and risk associated with transportation to the repository site, to consider "locations of present and potential sources of waste, interim storage facilities, and other repositories." In preparing the EAs, DOE used the "reactor centroid" approach in determining the sources of waste. We agree with DOE that it is not necessary, and would be extremely difficult, to attempt to determine the

specific routes from reactors to the repository site. Such an attempt would be futile because specific routes will not be known for many years and it is unclear whether a Monitored Retrievable Storage Facility ("MRS") or a Central Packaging Facility ("CPF") will be utilized and, if so, where it will be located. Accordingly, we support DOE's decision to use the reactor centroid approach and not to attempt to consider specifically the risks and cost of waste transport from a potential MRS or CPF to the repository.

Recommendation:

DOE should explain in more detail in Appendix A, Section A.10.3 (Routing), why it did not consider potential routes to a repository site in preparing the EAs. DOE should also explain that it assumed in its analysis that spent fuel shipments to the repository are made on existing rail lines or on the interstate highway system, and that it used 1980 census data to estimate population densities along the representative routes.

5. In applying the Transportation Guideline, DOE relies on certain underlying assumptions and definitions. For example, in assessing if a potential repository site meets the Qualifying Condition of the Transportation Guideline,

DOE considered a site which is more than 20 miles distant from the nearest regional transportation link to be less favorable than other sites in terms of the cost required to construct new or upgrade existing roadways or rail lines. (See, e.g., Richton Dome at 6-51; Deaf Smith at 6-49). Although this assumption was expressly stated, DOE did not explain the assumptions and interpretations it used in applying the Transportation Guideline.

Recommendation:

To aid the public in its review of the EAs, DOE should identify in a separate section of each EA, or in Appendix A, any underlying assumptions used in applying the Transportation Guideline. In addition, because DOE has used many terms of a relative nature, such as proximity, minimum, significant, expensive, and acceptably low, which are subject to various interpretations, DOE also should provide an explanation of its interpretation of the non-quantified terms contained in the Transportation Guideline.

6. There are inherent uncertainties in the data concerning transportation impacts that are noted throughout the EAs. These uncertainties are generic in nature in that they are applicable to all the EAs. For example, repository design

and the design of access routes are still in the conceptual stage, the modal split of spent fuel transport is not known, certain future characteristics of the transportation system are not known, and the design of a new generation of casks is still unknown. The listing of these uncertainties in Chapter 6, as is done in Hanford EA at 6-46, is helpful because it reminds the reader of the uncertainties inherent in applying the Transportation Guideline.

Recommendation:

DOE should state the uncertainties in the transportation data to which it applies the Transportation Guideline in Chapter 6. Because these uncertainties are generic in nature, they should be identical in each EA.

COMMENTS ON APPENDIX A

I. JURISDICTION

A. An expanded discussion of federal and state laws and regulations governing the transportation of radioactive materials should be provided to ensure that the public, who may not be familiar with the legal bases for the regulation of radioactive materials transport, is informed on this issue.

1. Provide a discussion of the responsibilities and functions of the Federal Emergency Management Agency.
2. Provide a discussion of the International Atomic Energy Agency and explain how it affects the regulation of radioactive materials transport in the United States.
3. Explain the role and the jurisdiction of the NRC in packaging design. Reference should be made to the Memorandum of Understanding between the DOT and NRC and to the adoption by the DOT of the NRC regulations governing packaging design.
4. Describe any other agreements between DOE and other federal and state agencies that are related to the implementation of the NWPA.
5. Discuss in more detail the statutory framework under which the NRC may enter into agreements with the states under the Atomic Energy Act and the extent of the regulatory authority that may be transferred by the NRC to the states to make it clear that agreement states have no more authority than other states to regulate spent fuel shipments.
6. Discuss the preemptive effect of the Atomic Energy Act, the Hazardous Materials

Transportation Act, and the Federal Railroad Safety Act, and their implementing regulations governing the transportation of radioactive materials.

B. The background information on radioactive materials transportation should describe the transportation provisions of the NWPA to explain the parameters within which DOE must operate in carrying out its transportation responsibilities.

1. Appendix A characterizes DOE as the "shipper of record." The description of DOE's responsibilities may be misleading to an uninformed reader. DOE should explain fully its transportation responsibilities and liability under the NWPA, including the fact that it will have title to the fuel during transportation to a repository.
2. Explain DOE responsibilities under the disposal contracts it has entered with utilities.
3. Explain that DOE is required by the NWPA to consider transportation costs in evaluating potential repository sites.

II. REGULATORY REQUIREMENTS

A. Explain NRC safeguards regulations in more detail, because they are an important component of radioactive materials transport and are designed to ensure public safety.

1. Clarify the respective roles of the DOT and NRC with respect to nuclear transportation safeguards regulation.

2. Note that the NRC considers the worst-case sabotage scenario in promulgating its safeguards regulations for the transport of spent nuclear fuel.

B. Provide a more complete discussion of prenotification requirements because it is an issue of concern to the public.

1. Explain the prenotification requirements under 10 C.F.R. Part 73.

III. RISK ASSESSMENT

A. The Appendix discusses the desirability of reducing hazards or risks of transport below existing levels without quantifying the existing levels of hazards and risks. The use of the term "hazards" without an explanation and quantification, in both absolute and

comparative terms, of the specific hazards is misleading and unduly alarming.

1. Explain and quantify existing "hazards", as used in Sections A.4, A.5, A.6, and A.7.
2. Expand the discussion of natural background radiation risks.

B. Discussions of the risks of radioactive materials transport should be placed into proper perspective by a comparison with the risks of hazardous waste transportation and transportation in general.

1. Include a discussion of the comparative risk of radioactive material transport and the transport of other hazardous materials in A.5, and the historical accident rates for commercial spent fuel transport in both the U.S. and abroad.

IV. DATA AND INFORMATION.

A. The Appendix fails to make any reference to or incorporate any portion of the "Transportation Business Plan: Strategy Options Document", the "Draft Mission Plan", or the proposed Institutional Plan and Business Plan for the Civilian Radioactive Waste Management Program. The public should be made aware of all the activities DOE has and will

undertake in developing a comprehensive transportation program.

1. Discuss, where relevant, the transportation issues addressed in other DOE program documents.

B. Because a major purpose of the Appendix is to inform the public of the legal and regulatory environment governing spent fuel shipments, there are certain discussions where it is important to be more precise about the facts and conclusions presented. Otherwise, the public still will not have a clear understanding of the transportation regulatory environment.

1. Discuss the regulatory heat and radiation limits for transport packages for radioactive materials.
2. Clarify, in the presentation of accident statistics in A.5, the actual number of high-level and low-level waste shipments, and the accident experience for each type of package, using the most current data available.
3. Clarify the meaning of the terms "high" and "low" in A.7.4.4.
4. Clarify in A.5 "the conditions of the vast majority of accidents."

5. Explain in A.6.3 the assumptions underlying the worst-case accident scenario, e.g., regarding population density and traffic.
6. Specify in A.7.4.1 the reasons for reconsideration of existing regulations.

V. PACKAGING REGULATIONS

A. Provide a more comprehensive and detailed discussion of current packaging standards and shipping experience to date to show the basis for and development of the standards and to explain their adequacy.

1. Discuss the development of NRC test standards for Type B packages.
2. Discuss the important distinctions made in the regulations governing packaging as to fissile classifications (Class I-III) and radioactive materials quantities (Type A-B).
3. Explain the significance of cooling time, with respect to exposure levels and package design, in shipping spent fuel.

B. The discussion of the need for new casks should be expanded to explain that the use of current cask designs adequately protects public safety, but that

new casks might be developed with increased capacity, which is desirable because it will decrease the number of shipments required.

1. Discuss the adequacy of the existing generation of spent fuel casks from a safety standpoint for shipments of spent fuel to the repository.
2. Explain why the risk models relied on by DOE, which utilize the existing generation of casks, are applicable to the proposed new generation of casks.

VI. ISSUES OF CONCERN TO THE STATES

A. Federal, state and local responsibility for emergency response planning and preparedness should be discussed in more detail to give a more comprehensive picture of the national program for emergency response and the roles of the federal and state governments within this program.

1. Explain that state and local governments are primarily responsible for on-the-scene emergency response, and that the federal government will provide necessary support if desired.
2. Discuss the role of DOT, DOE, and FEMA in assisting and training state and local governments in emergency response planning and

emergency response to accidents involving the transport of commercial waste.

B. The provisions of the DOT's highway routing rule for radioactive materials transport, designated HM-164, should be discussed in more detail. The brief discussion of state designation of alternative preferred routes fails to specify the requirements for such designation, including risk assessment and coordination with affected local jurisdictions and neighboring states. A more detailed discussion would be helpful in explaining the framework under which highway routes are and will be selected.

   1. Explain the procedure for state designation of alternative preferred routes under HM-164 and reference where appropriate the DOT "Guidelines for Selecting Preferred Highway Routes for Shipments of Large Quantity Radioactive Materials."

C. One aspect of the financial protection system for transportation accidents was not included in the discussion.

   1. Discuss the Motor Carrier Act of 1980, and the regulations promulgated thereunder, which

require carriers of radioactive materials to carry $5 million of insurance coverage for transportation accidents.

VII. RADTRAN-II

1. The RADTRAN II transportation risk model is designed for application on a national scale and is an adequate and appropriate method for determining the risks of transport to each site. (See attached report prepared by Pickard, Lowe and Garrick, Inc.) However, the model develops overly conservative results because conservative parameters are used in the underlying data. The radiological and non-radiological risks associated with spent fuel transport, as calculated in RADTRAN II, would still be quite small even if the assumption of overall transportation risks were increased substantially. Moreover, RADTRAN II is based on national transportation accident statistics, rather than the statistics of spent fuel transport, which is a very conservative assumption. As a result, the model does not take into account such factors as special driver/crewman training for radioactive material shipments, the use of customized and well-maintained equipment, and route selection and control. Inclusion in the analyses of these factors will reduce the

accident rates for spent fuel shipments significantly below national average accident rates.

Recommendation:

Explain the conservative nature of RADTRAN II and indicate the degree of confidence that should be placed in its analysis of national transportation impacts.

2. The results of the application of RADTRAN II may be an order of magnitude too conservative on a regional scale. DOE notes in the EAs that RADTRAN II is not designed to be a regional risk model (see, e.g., Richton Dome 5-80; Deaf Smith 5-80). Nevertheless, the application of RADTRAN II can be considered valid on a regional scale because it results in a bounding estimate of risk for each site.

Recommendation:

Explain the rationale supporting the application of RADTRAN II on a regional basis, including the reliability of the results of the risk assessment and the adequacy of the risk assessment for purposes of the comparison among sites as required by the NWPA.

CONCLUSION

After reviewing in detail the transportation provisions of the EAs, including Appendix A, associated with the five sites proposed for nomination for site characterization for selection of the nation's first repository site, the Group believes that the DOE has complied fully with the its responsibilities under § 112 of the NWPA and the DOE's repository siting guidelines. Moreover, as indicated in the attached report prepared by the Group's consultant, Pickard, Lowe, and Garrick, Inc., their independent technical evaluation of the computer codes used by the DOE in assessing the risks and costs of the transportation of spent fuel to the potential repository sites verified the adequacy of the codes for performing the analyses contained in the EAs. The Group urges DOE to address all its comments in the final EAs, and requests that any analyses of the comments received on the draft EAs be sent to the Group's program manager and counsel (LeBoeuf, Lamb, Leiby & MacRae, 1333 New Hampshire Avenue, N.W., Suite 1100, Washington, D.C. 20036, Attn: Leonard M. Trosten, Esq.).

Very truly yours,

Robert W. Bishop /mab

Robert W. Bishop, Esq.
Chairman
Electric Utility Companies'
Nuclear Transportation Group

Attachment