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Vol. 1

Workshops for State Review of Site Suitability Criteria for High-Level Radioactive Waste Repositories

Analysis and Recommendations

Prepared by
Potomac Research Incorporated
for the
U.S. Nuclear Regulatory Commission

The views expressed herein are those of the participants as interpreted, analyzed and summarized by the author. They do not necessarily reflect the views of the NRC or its staff.

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Potomac Research Incorporated
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

February 1978

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ABSTRACT

The purpose of this report is to present the views and recommendations of invited State officials and legislators participating in a workshop concerned with preliminary site suitability criteria for high level radioactive waste repositories. The workshops were open to the public and were conducted by the U. S. Nuclear Regulatory Commission (NRC) during September 1977 in three regional locations across the United States.

This contractor report is the second of two reports and consolidates the discussion by State officials on the role of a State in siting a repository, NRC's waste management program, the transportation of high level wastes, the number and location of repositories and concerns with the socio-economic impacts of siting a repository in a community.

The recommendations to the NRC can be categorized into four areas. These were: (1) general recommendations, (2) procedural recommendations, (3) recommendations for improving communications, and (4) specific recommendations on the preliminary siting criteria. The recommendations emphasized the need for early State involvement in the siting process, the need for an impacted State to assess repository operations, the need for early solution of waste transportation concerns, and the requirement that any repository developed insure the protection of the public health and safety as its most important characteristic. Other participant recommendations are included in the body of the report.

SUMMARY

The NRC Waste Management Program and the Office of State Programs held three regional workshops to solicit ideas from State executives and legislators on the siting and licensing procedures for high level waste repositories and to solicit comments on the NRC preliminary site suitability criteria. The workshops were held in Denver, Colorado; New Orleans, Louisiana; and Philadelphia, Pennsylvania during the period 19-30 September 1977. The discussion group reports from these workshops were published in October, 1977 in NUREG-0353. An analysis of those reports is contained herein.

At the workshops, after a brief plenary session, participants were assigned to small discussion groups. The subject of each discussion group was an identical set of issues regarding siting of a repository and the preliminary site suitability criteria. This summary contains what, in our analysis, were the major findings and recommendations to the NRC. It is noted that these do not necessarily represent a consensus but more of an aggregation.

1. The participants emphasized that the states, particularly an impacted state, want an active role with the NRC in the review, licensing and assessment of repository operations.

2. The participants generally agreed that NRC in cooperation with an impacted state should have final responsibility for site approval.

3. The participants emphasized that the states want early involvement with DOE in site selection and with NRC in the licensing process.

4. It was generally agreed that appropriate state activities would be: performing environmental reviews, radiological monitoring, reviewing regulations, and assessing repository operations.

5. The participants saw a need to improve the understanding of the division of responsibility concept on the part of all parties and that there is a need to improve vertical and lateral communications among and between agencies.

6. The participants emphasized that the NRC should require DOE, under the provisions of Title 10, the Code of Federal Regulations, to comply with state laws in siting a repository or demonstrate why it should or could not comply.

7. The participants noted that statutes designed for land use, zoning, transportation and the protection of public health and safety give the states a role in siting a repository.

8. It was generally agreed that a repository site should meet a basic set of technical criteria or standards after which other considerations may be addressed. Further, the participants found that failure to meet one criterion would constitute failure as a site.

9. The participants agreed unanimously that protection and maintenance of public health and safety were the most important considerations in repository siting.

10. In siting a repository it was noted that both positive and/or negative community effects could occur. The participants, realizing this, were concerned with: costs of developing community services in support of repository operations, methods of compensating for impacts, identification of community needs, and perpetual care funding.

11. The participants found that development costs and transportation problems and constraints would be highly significant in determining whether or not there should be multiple, regional or few, national repositories. One discussion group found that at least two repositories should be developed, preferably in different geological mediums.

12. The issue of regional coalitions of states to deal with siting issues produced a difference of opinions. The Denver groups were negative to the use of coalitions while the New Orleans and Philadelphia groups saw some merit and value to coalitions.

13. The participants emphasized the need for federal compensation to be paid to impacted states for the direct and indirect costs of repository siting.

14. The issue of special incentives paid to a state for accepting a repository produced a difference of opinion among the discussion groups. The Western workshop participants did not agree to special incentives being paid while the Central and Eastern workshop participants emphasized the value and merit of such incentives in site location.

15. It was generally agreed that the ratepayers, not the taxpayers, should ultimately be responsible for costs of compensation and incentive payments.

16. The participants agreed that the preliminary site suitability criteria were inadequate and too general in nature.

17. In most discussions, the participants saw the need for additional items to be considered as potential criteria. Included in this group were: transportation of wastes, proximity to population centers, colocation of reprocessing plants, cost of repository development, U. S. ownership and control of the repository, and other general socio-economic considerations.

18. The discussion groups noted that weighting of the criteria was a good idea with special emphasis on health and safety features.

The recommendations to the NRC by the workshop groups can be categorized into four areas. These were: general recommendations, procedural recommendations, recommendations for improving communications and specific recommendations on the preliminary siting criteria. It is noted that the recommendations do not represent a consensus of the groups but rather an aggregate.

a. General Recommendations.

1. NRC should consider ways of assisting impacted states that desire to participate in the siting and licensing process.

2. The Federal government should be primarily responsible and liable for all remedial actions in connection with accidents, accidental releases, repository failures and waste transportation mishaps.

3. Transportation of waste needs to be emphasized and the lines of responsibility need to be clarified to insure appropriate handling and protection of the general public.

4. The Federal government should review the concept of compensation and special incentives for siting a repository for all direct and indirect costs of repository development and operation.

5. The Federal government should determine the number and location of waste repositories based on a cost/benefit analysis which would include the transportation concerns associated with repository siting.

6. NRC should suggest to DOE that more discussion needs to be conducted on the retrievable/non-retrievable trade off in waste management.

b. Procedural Recommendations.

1. NRC should require DOE to comply with state laws during the entire repository program or demonstrate why it should not.

2. NRC should require DOE to submit alternative sites for consideration in the licensing process.

3. NRC should develop with state consultation a model for state participation in the licensing process.

c. Recommendations for Improved Communications.

1. The Federal agencies should develop the ability to reach the appropriate agencies and people at the State level.

2. NRC should convey to DOE and EPA the concerns of the States with regard to repository siting.

d. Specific Recommendations on Siting Criteria.

1. NRC should define the terms used in the criteria.

2. NRC should, in its criteria, require the Federal government to own and control the repository site.

3. NRC should incorporate EPA standards for air and water quality in its criteria. Chemical toxicity should be prescribed when setting the limits of releases.

4. NRC should delete the reference to 10^7 years in its criteria. The figure is unrealistic and could preclude potential sites and even regions from consideration.

5. NRC should redraft its criterion on transportation so as to emphasize it as a major concern and to clarify responsibilities for both Federal and State activities.

6. NRC should review its criteria to assess the value of adding criterion which address:

(a) Locating a repository near a current or potential military target.

(b) Locating a repository near an international boundary.

(c) Locating a repository near a population concentration.

(d) Locating a reprocessing plant near a repository.

PREFACE

The disposal of high level nuclear waste is one of the most important issues now facing the Federal government. The Department of Energy (DOE), formerly the U. S. Energy Research and Development Administration (ERDA), has been authorized by the Congress to develop repositories for commercial high level wastes (HLW). Its schedule calls for an operational facility by 1985. The U. S. Nuclear Regulatory Commission (NRC) has licensing and regulatory authority over the repositories, including the authority to set siting criteria which the repositories will be required to meet.

The NRC Waste Management Program and the Office of State Programs held three regional workshops to solicit ideas from State executives and legislators on the siting and licensing procedures for high level waste repositories and to solicit comments on the NRC preliminary site suitability criteria. The workshops were held in Denver, Colorado; New Orleans, Louisiana; and Philadelphia, Pennsylvania during the period 19-30 September 1977. The discussion group reports from these workshops were published in October, 1977 in NUREG-0353. An analysis of those reports is contained herein.

The workshops were attended by 170 State executives and legislators from 46 States. In addition, there were over 80 observers from diverse backgrounds including the general public, government, industry, professional consultants and university faculty.

To aid the participants in understanding and evaluating the preliminary site suitability criteria, the participants were supplied prior to the workshops with NUREG-0326, Workshop Material for State Review of USNRC Site Suitability Criteria for High Level Radioactive Waste Repositories. NRC invited interested State officials to serve as discussion group chairmen and, in a meeting with them in advance of the workshops, developed a set of issues for discussion.

In each workshop, all discussions were preceded by brief staff presentations of NRC's high level waste program. The visual aids used in those presentations are contained in the appendix to this report. The participants were divided into four heterogeneous groups for discussion of the common set of issues and siting criteria. At the close of these discussions, the chairmen of each group prepared a report of the group's conclusions on the identified issues. On the final day of the workshop each group edited its report and the chairman presented it to all participants at a closing plenary session. It is those individual group reports that are contained in NUREG-0353.

This, the second of two reports, presents a discussion of the participant's views and their recommendations to the NRC on issues associated with siting and licensing a high level waste repository. The discussion is presented in an issue format and consolidates their views on the role of a State in siting a repository, NRC's waste management program, the transportation of high level wastes, the number and location of repositories, concerns with socio-economic impacts of siting a repository in a community and other allied concerns.

This report has been prepared by Potomac Research, Incorporated, under contract to the U.S. Nuclear Regulatory Commission. The sources from which this material was drawn included the discussion group reports, transcripts of recordings made during individual discussion group sessions and notes made during attendance at all the workshops. The views expressed herein are those of the participants as interpreted, analyzed and summarized by the author. They do not necessarily reflect the views of the NRC or its staff. The author accepts sole responsibility for the material contained in this report. It is my sincere hope that an accurate and correct portrayal of the proceedings of the workshops has been presented.

Herbert W. Kress

McLean, Virginia
February, 1978

ACKNOWLEDGEMENTS

It is not often that an individual is presented with the opportunity to undertake a stimulating and important research program and still be of service to a client, a research company and fellow professionals at the Federal and State levels. I have had that opportunity and am very appreciative.

Many individuals contributed to the success of these workshops, none the least of whom were the chairmen of the discussion groups. These individuals were asked to fulfill a very sensitive role. On the one hand, they were asked to voice their own perspectives on the subject, while they were representatives of their own professional constituency, be it a State agency, public institution, private firm or legislative district. On the other hand, they were asked to chair discussion groups concerned with a very vital and sensitive issue to our nation and its citizens. These individuals, to whom I am very appreciative, were:

INDIVIDUAL	LOCATION
Honorable Glade Sowards	Western Regional Workshop
Dr. William Hambleton	Western Regional Workshop
Mr. Donald Gilbert	Western Regional Workshop
Mr. W. Kelly Woods	Western Regional Workshop
Dr. Michael Mudrey	Central Regional Workshop
Mr. Kenneth Nemeth	Central Regional Workshop
Mr. B. James Porter	Central Regional Workshop
Mr. Gerald Day	Central Regional Workshop
Dr. Glenn Paulson	Eastern Regional Workshop
Mr. Ronald Callen	Eastern Regional Workshop
Dr. James Davis	Eastern Regional Workshop
Honorable David Lavine	Eastern Regional Workshop

The organization of three separate but similar workshops across the United States is not an easy task, particularly when the issues to be addressed are important

to not only the workshop sponsor but to many other individuals and groups with diverse interests. In this regard, my sincere thanks are extended to the staff of the NRC who were concerned with the workshops and who spent many hours planning, participating and making this endeavor a success. Since they are many, I will not be specific; however, they know to whom I refer.

Finally, the research team from Potomac Research included rapporteurs, research assistants and clerical aides. These are the individuals who really insured things were accomplished. I am most appreciative of their efforts and willingness to contribute. These individuals were: Margaret Cawley, Jill Anderson, Lauch McElhaney, Dr. Barry Beasley, A. John Dunivin, Lorraine Dahm, Carol Iacone and Cindi Aller. There is one individual who has worked with me on this project from its inception, who, more than anyone else, is responsible for its success and the production of this report. I am deeply grateful to Mrs. Sharon Knott. There are others who contributed who have not been recognized. I apologize to them; however, they should know I am most grateful.

I. Purpose.

The purpose of this report is to analyze the group discussions and present the group's recommendations on the principal concerns addressed at the three NRC regional workshops. Each workshop consisted of four groups which discussed a set of preliminary issues and siting criteria. The responses of the participants were considered an expression of the individual's view on the issue, except where it was specifically identified as representing the view of a particular state, agency or organization.

This report consists of a discussion section, a summarized issue matrix and recommendations to the NRC. The appendicies contain an issue-by-issue matrix and additional material presented at each workshop depicting NRC's waste management program.

II. Issue Discussion.

The purpose of the NRC workshops was to provide a means for state review of site suitability criteria for high level radioactive waste repositories. In essence, NRC was interested in gathering information on: (1) what the states' concerns are with siting a HLW repository, (2) what actions are appropriate for state accomplishment, (3) what actions do the states want the NRC to take, and (4) what do the states think about the proposed site suitability criteria. The discussion section, issue matricies and recommendations all advance answers to these questions. In some cases, new and even more stimulating questions have arisen as a result of the workshop discussions. For example, the problems of waste transportation are of such magnitude that they have a significant effect on the decision of where to locate a repository and how many will be constructed. In this regard, the decision to colocate a reprocessing plant with a repository would also have an impact on waste transportation.

The workshop discussions were focused on a set of preliminary issues and site suitability criteria. These were published in NUREG-0353. In this report, an attempt has been made to consistently follow the logical sequence of the issues and criteria. The issues are appropriately numbered and presented before each discussion. They are also consistently identified in the matricies. The NRC preliminary site suitability criteria, also found in NUREG-0353, are included in this report immediately before the participant recommendations that pertain to them.

Role of the States

1. "Considering that significant amounts of high level radioactive waste (and potential waste—spent fuel) exist and that disposal of such waste is presently a Federal responsibility, what role can and should the States play regarding siting of a HLW repository?"

Most of the discussion groups at the three workshops chose to incorporate this issue into their discussions on other issues. The Hambleton group noted that the states want a role as an active partner with the NRC in the entire siting process. The group consensus on this role was that it should be established early and that it include participation in the review process, the licensing process, and in DOE activities.

The Nemeth group agreed on the need for an active partnership role but noted with concern that institutional barriers may prevent a meaningful relationship. One of the benefits of the partnership arrangement would be an enhanced capability to educate and inform the general public on the safeguards utilized and the hazards prevalent in handling nuclear material.

The Callen group reached general consensus on early state involvement with continuing inputs to all NRC, DOE and EPA activities in siting a repository.

Final Site Approval

1a. "Who should have the final responsibility for approving a site for a HLW repository?

- o NRC,
- o The NRC in cooperation with the States, or
- o The U.S. Congress or President with input from Federal agencies and States."

The issue of who should have final authority and responsibility for siting a high level waste repository was addressed by every group. The proceedings indicate that virtually every group said that the responsibility should rest with NRC and the state concerned. However, many group participants noted that they believed the final responsibility for a siting decision would rest with the President, the Congress and ultimately the courts.

The issue of Federal preemption and the right of a state to maintain veto powers permeated the discussions in all groups. The Sowards group, along with many others, raised the question of when state involvement in the process would begin and whether or not the state had a right of veto over siting the potential repository. A participant in the Gilbert group offered the legal position of the state of Minnesota which declared that a HLWR could not be located in that state without approval of the state legislature. A participant from Oregon in the same group offered that his state had a similar statute and that in his opinion the issue of siting would ultimately have to be addressed by Congress or the courts.

The Woods group, in addition to agreeing with the above, questioned whether or not a state had the authority to require NRC to obtain its permission on siting a repository. This group saw a most significant role for the states in educating and informing the general public on waste management activities, requirements, and site locations.

The Nemeth group was concerned with the jurisdictional aspects of the issue while raising some other interesting subissues. They saw the need for NRC to address itself to the long term issues of repository care, as this responsibility will clearly not be a state one. Further, the Nemeth group expressed concern that the present Federal position of a repository being a commercial venture hides the aspect of overall federal responsibility.

The Day group focused some of its discussion on the problem of the United States becoming the repository for the world's waste. This group expressed concern over whether or not NRC's statutory authority extended to making the final decision on repository siting. The Day group saw the need to include adjacent or bordering states in the siting process. This was particularly emphasized for those states that could be considered transportation corridors to a repository.

The Paulson, Callen, Davis, and Lavine groups all focused on the right of a state to veto a candidate site but no specific recommendations were made. The Callen and Lavine groups both noted in a minority opinion that the final siting decision may ultimately end up as a court decision.

NRC Licensing Process

1b. "Are you satisfied with the repository licensing process proposed by the NRC? If not what type of process would you like to see instituted? At which stage(s) of the process should the States have a role? How should the States exercise their responsibilities (e.g., parties to licensing or rule making hearings or other)?"

The discussion on this principal concern ranged from general satisfaction with the proposed NRC licensing process to complete dissatisfaction. The essence of the concern was that the states want early involvement on all aspects of the licensing procedure.

Those groups that reached a consensus on satisfaction with the proposed process, like the Sowards group, also expressed an interest in early state participation and involvement in the siting process. In the Sowards group, discussion on the desireability of early state involvement resulted in the surfacing of other subissues. These were that DOE should realize that it has a lot of coordination to do before they can enter a state and sink preliminary shaft or bore holes. It was noted by a participant from Oregon in the Sowards group that DOE has done considerable work at the Hanford site, yet no official approaches have been made to the state of Oregon about the possibility of a HLWR being sited in Hanford. Oregon has a strong concern over siting a repository at Hanford because of low technical confidence in the geologic structure of the area. This discussion lead to a reiteration of the need for early state involvement so that a step by step development of a site, from an economic standpoint, would not become so costly that a decision to withdraw or cease development would be difficult to make. In other words, the participants were concerned that the economics of repository development do not take precedence over technical confidence in the potential site.

The Hambleton group raised the question of whether or not DOE would cease its activities in a state if the state went on record as not desiring to have a site located within its boundaries. DOE policy on this issue was determined to be affirmative based upon a previous DOE (ERDA) letter to each governor.

The notion of an independent assessment of a potential site was raised by the Hambleton group. In discussion, it was agreed that NRC should (1) provide funding assistance for a state to make an independent assessment of a potential repository site, and (2) NRC should include in its licensing regulations a section requiring DOE to assess and evaluate the impact of siting a repository in a state and/or community.

The Gilbert group followed other groups in that they were satisfied with the proposed process while adding the requirement for early state involvement and full disclosure of information to all interested parties. This group also stated that the licensing process should have an interested party arrangement so that each impacted state will automatically be brought into the decisionmaking process.

The Woods group, like the Gilbert group, expressed the concern that a state should be able to participate early in the siting process and that if the state were a potential site or adjacent state it would automatically become an interested party in the licensing process.

The Mudrey group expressed general satisfaction with the proposed licensing process and that there appeared to be sufficient opportunities in the process for a state to participate. This group discussed the possibility of having the state conduct the siting reviews with NRC either approving or disapproving the state actions.

The Nemeth group noted that a state should be allowed to participate in the licensing process to the level of their technical expertise. Further, this group saw the merit of early state involvement as a means to improve public understanding of the problem of waste disposal and, hopefully, acceptance of the measures that need to be taken.

The Porter group in its discussion of the proposed licensing process noted that (1) a state should be required to be a party to the process, and (2) NRC should evaluate the potential of creating a "special role for the states in its licensing procedures." This group alluded to the inherent institutional barriers in federal/state relationships by noting that "federal agencies are always willing to listen - will do it in shifts - if need be - but they cannot surrender the ultimate right of preemption."

The Day group expressed a concern over decisions being made on siting issues without state input. It suggested that NRC should establish a written procedure so that a state knows where it can begin to participate in the decision making process. A participant in this group from Wisconsin stated that his state wants an opportunity to evaluate and review any environmental impact statement and to participate in every step of the licensing process.

The Day group, in discussion, suggested that NRC should realize that involvement by the states takes funding and manpower. Currently, some states cannot afford the expense of this participation. In order to assist in this area the question was asked, "Has the NRC given any thought to providing assistance, funding and/or technical personnel, to the states for evaluation and monitoring activities in waste management?

In still another area, the Day group raised the question, "If a state objects to a HLW repository site on technical issues what recourse does it have in the licensing process?" As a subissue of the above question, the Day group expressed concern over the problem of transportation of waste. The group asked, "If a state is a noncandidate site state, yet it is in a transportation corridor to a repository what participation can it anticipate in the licensing process?"

The Paulson group did not make any specific proposals regarding the proposed licensing process but did point out the need for improving communications between state and federal agencies.

The Callen group, showing similar concerns over the proposed licensing process, reached agreement on the concept of requiring DOE to submit alternative sites simultaneously. The NRC decision, then, should be based on a comparative analysis of candidate sites.

The Davis and Lavine groups were not satisfied with the proposed licensing process. The Davis group discussed the need for more state involvement while the Lavine group, noting the same requirement, stated that NRC should approach the licensing of a repository in a wholistic perspective with technical aspects being addressed first.

Appropriate state activities.

1c. "What are the appropriate State activities (e.g., performing environmental or technical reviews, selection, environmental monitoring, review of proposed regulations, cooperation in NRC staff work, etc.)?"

The basic concern of the groups on this issue was that the states would be precluded from participating in the entire process. The discussions on state activities ranged from being categorized as an interested party through intervenor, to active partnership with NRC and DOE. Other appropriate state activities were described as a monitoring agency, a technical review agency, and an enforcement agency.

The Sowards group agreed that an appropriate activity for a state would be to monitor repository development to insure satisfaction with federal activities. This group saw a role for adjacent states in the monitoring process.

The Gilbert group agreed with the NRC proposed activities plus some additional ones. These were emergency planning and environmental monitoring. This group noted that some states have laws requiring all types of monitoring. Usually, the group stated, errors are discovered by state monitoring agencies.

A participant in the Gilbert group from Minnesota expressed concern with the apparent lack of concern over the use of the buffer zone. The question was raised, "How does the NRC plan to allow the repository operator to use the buffer zone?"

The Mudrey group, initially, discussed the fact that if NRC and DOE activities continued at their present level there would be little for the states to do in monitoring the technical activities of a repository.

This group, later, discussed that it would be appropriate for states to provide environmental monitoring and handle safety and enforcement responsibilities. These activities would be accomplished independently of NRC, while the states should be allowed full participation in NRC inspections involving health and technical matters.

The Nemeth group discussion on this issue concentrated on transportation matters and socio-economic problems. The group noted the ultimate responsibility of a state for the health of it's citizens. Hence, health matters were an appropriate concern for state activities.

The Day group reached a consensus that (1) regulating and monitoring a repository, and (2) regulating and monitoring transportation of waste were appropriate state activities. The group expressed a concern over whether or not NRC or the federal government would comply with state laws associated with these activities. One view on this issue noted that when it came down to the final analysis the federal government will not comply with state law. In many cases, DOE activities have been observed as conforming to the intent of state law; however, not complying for fear of establishing a precedent.

The Paulson and Callen groups agreed on the NRC proposed appropriate state activities while noting that the states should have the option of participating or not.

The Davis and Lavine groups also agreed on the NRC proposed state activities but recorded certain disagreement over implementation techniques. The Davis group saw the need for state personnel to be included as part of the waste management program while they also discussed the use of the phrase "performance assessment" rather than "monitoring." The discussion asserted that "performance assessment" had a different connotation and could be interpreted to be evaluative in nature as opposed to strictly reporting what was occurring.

Federal/State Communications

1d. "How does the division of responsibility at the Federal level (i.e., separation of regulatory authority from research and development) affect the interactions of the States with the Federal government? What can be done to improve the communications?"

This particular concern presented problems for many of the group participants. These problems surfaced because of the overriding desire of the groups for early and total involvement. A case in point was the desire of the states to be in on the developmental phase of a HLWR while at the same time participating in the regulatory actions. This would, in essence, have the developing agency licensing and regulating its own actions.

The Sowards group noted that the division of responsibility issue could be eased if the states were allowed to participate early in the siting process.

The Gilbert group noted that the division of responsibility between agencies and the federal/state interaction was not easily defined or implemented. The group pointed out that the division of responsibility and interaction between and among concerned agencies would vary according to organizational structure in each state.

The Woods group approached this issue as a concern of improving communications between the federal and state agencies. The group suggested that (1) NRC correspond with each state governor and leader of the state legislature requesting identification of interested persons in waste management, (2) continue and upgrade the NRC liaison officer program, and (3) assume the responsibility to keep the states informed on matters pertaining to waste management.

The Mudrey group, concerned with improving communications at all levels, discussed the methods available for institutionalizing the development of professional contacts and communications.

The Nemeth group, in addition to recommending a documentation program on waste management as a means of improving communications, noted that the states look to NRC as a very creditible agency, when NRC comes to the states with a request for input on a problem the states accept it as a bone fide situation. If this be the case, the group asked, "Is it realistic, then, to believe that NRC can request that DOE integrate its HLWR activities with the desires of the states and the regulatory responsibilities of NRC?"

The Porter group in its discussions approached the issue of division of responsibility by suggesting the possibility of creating a "mini" regulatory role for the states. This was envisioned as a state regulatory agency having authority over DOE activities in the state similar to the regulatory relationship that exists between NRC and DOE at the federal level.

The Day group addressed this issue by citing the many problems associated with transportation of hazardous materials and regulatory agencies. The group suggested the NRC review its role as a regulatory agency and how this role functions in conjunction with the transportation of HLW.

The Paulson and Callen groups approached this issue as a concern with improving communications at the federal/state level. The Paulson group suggested a network of liaison personnel for information exchanges while the Callen group called NRC's attention to the statute requiring the Secretary of Interior to respond to governor's comments as a means of institutionalizing better communications.

The Davis group discussed this issue by addressing ways of improving the methods of providing state input into NRC and DOE activities. In essence, what was suggested was early notice of participation and use of the Federal Register to publish the intent of NRC and DOE in waste management activities.

The Lavine group discussed the issue of division of responsibility in the frame work of the additional burden it causes the states to deal with both developmental and regulatory agencies. This group noted the need for an on going dialogue between the federal agencies and the states in the general area of waste management.

Reconciling Local/National Concerns

2. "What approaches could be used to assure that local and national concerns are reconciled with respect to approving a site for a geologic HLW repository?"

In general, the discussion groups chose to include this issue with discussion on the issue of which state statutes identify a role in the siting process for a state. The principal concern expressed within the groups was that DOE should comply with and obey state laws. This point was emphasized in the Sowards group where, in discussion, it was noted that the states want their laws recognized and complied with. All to often, in the past, federal agencies have taken the position of following the intent of state laws but have declined to comply with them.

The Mudrey group noted that the technical nature of HLW management left no alternative for the states but to reconcile their concerns with federal needs. Therefore, a state must accept what the federal government says with regard to siting a HLW repository.

The Day group, in discussion, thought that NRC should require DOE to comply with all state laws in siting a repository.

The Lavine group noted that some state laws would not be specific enough to apply to the problems of siting a repository.

State Statutes Identifying a Role in Siting a Repository.

2a. "What general kinds of laws or statutes give States a role in siting of a repository (e.g., land use planning, transportation, health and safety)?"

The groups all agreed that their states had statutes that identified roles for them in the siting process. These were characterized as statutes dealing with transportation of hazardous material, land use, air and water quality, and public health and safety.

The Gilbert group noted that the identification of a role in siting through state statutes would more or less be specific and unique to each state as they would have their own particular laws and ordinances.

The Nemeth group discussed a wide range of laws dealing with the states role in the siting process. For example, Florida and Arkansas have power facility siting legislation which could be extended to cover the siting of a repository. Kentucky and Iowa are considering legislation that would address the location of repositories. Minnesota and North Carolina have laws restricting transportation of waste, while Minnesota has a statute that prohibits the siting of a repository without state legislature approval.

The Paulson group expressed a concern over whether or not a state statute would apply on federally owned land; hence, would it be meaningful to identify state statutes that established a state role.

The Callen group suggested that NRC send each state a specific request for complete information on any state law that might impact on repository siting.

The Lavine group noted that states may need to pass legislation that would specifically deal with repository siting in order to protect local concerns.

Reconciling Federal Actions and State Laws

2b. "How can the States interact with the Federal government to insure that the Federal government acts in accordance with State laws (e.g., transportation and land use planning statutes)?"

The principal concern on this issue was whether or not DOE and/or other federal agencies would comply with state laws. In general, the discussion in the groups focused on the right of states to enforce the use of construction permits, transportation permits and other special permits that are designed to protect the public health and safety of its citizens.

A specific concern of the groups was compliance with state laws regulating the transportation of hazardous materials. A participant in the Nemeth group, from North Carolina, noted that even though that state has regulations governing the movement of nuclear materials on the highways of the state, the Department of Defense has seen fit not to comply with the state laws when it moves military nuclear material.

The Sowards group suggested that NRC's regulations should be so written that DOE or any of its contractors should comply with state laws. This group also suggested that the level of compliance should be set forth in DOE's environmental impact statement.

The Hambleton group pointed out that NRC should not license a repository unless it had state approval of the site. This expression of concern was qualified to state except where NRC could demonstrate that the site was in the national interest.

The Gilbert group noted that NRC, in its licensing process, should have an interested state arrangement so that each impacted state will automatically be brought into the chain of decisionmaking.

The Mudrey group acknowledged the importance of this issue to the workshops. In discussion, it was pointed out that states have passed laws and have created regulations in the waste disposal area so that the federal government will acknowledge their interests.

A concern of the Mudrey group was that DOE or its contractors would be allowed to proceed to a point where, from an economic standpoint, it would be impossible to cease development. Hence, this group expressed interest in having DOE maintain communications with appropriate state agencies throughout all phases of site development.

The Nemeth group agreed that NRC should require DOE to demonstrate that they have complied with state laws or give an adequate explanation of why they have not complied.

The Porter group suggested that federal statutes concerning waste management should require federal agencies to comply with state laws.

The Paulson group suggested that NRC should require DOE to take into consideration all pertinent state laws prior to submitting its preliminary site selections to NRC. Further, the group noted that DOE should be explicitly required to address all areas of conflict between DOE's proposed activities and state laws in their initial presentation to NRC.

The Davis and Lavine groups agreed that NRC should require DOE to comply with state laws. The Davis group suggested that this requirement be a condition of granting a license to DOE.

NRC Regulations that Obviate the Need for State Laws.

2c. "Could there be features which if included in NRC regulations would obviate the need for State laws restricting radioactive waste disposal?"

This issue was approached by the groups with indifference. The Sowards group expressed concern over whether or not this was a desireable situation. The Nemeth group decided that there are no features that could be included in NRC regulations to obviate the need for state laws.

The Day group suggested that NRC should develop a model law addressing repository siting. This, then, could be useful in obviating state laws. The Paulson and Davis groups noted that the issue would become inoperative if the appropriate federal/state interfaces were accomplished.

Balancing Technical and Nontechnical Criteria

2d. "Should a HLW repository be constructed at 'the optimum' site (considering health and safety and environmental, social and economic impacts)? To what extent should other considerations (e.g., local views) be allowed to influence the siting decision?"

As an overriding principal concern, the working groups indicated that technical considerations should prevail in optimum siting of a high level waste repository. These considerations were described as, (a) geologic, (b) facility design, (c) security, (d) operations, (e) buffer zone restrictions, (f) transportation corridors, (g) present and future resource values, (h) public health and safety, and (i) decommissioning.

The groups generally agreed, if the technical considerations were adequate, and this was generally indicated to be a site specific problem, then political considerations should enter into the site selection process. Political considerations were described as (a) local sentiments, (b) zoning regulations, (c) county and state statutes and other allied factors which may or may not be political in nature but that would be considerations important for siting a HLWR.

The Sowards group expressed concern over how the site would be selected. Will it be the best technical location or will it be the best one politically, or somewhere in between? In discussion, a suggestion was received to proceed with the development of a repository if there was substantial evidence that the site was a good one and suitable. The evidence would have to be not arbitrary or capricious.

The Hambleton group noted that any repository should be chosen from a scientific standpoint. The site should not be chosen on a political basis.

The Gilbert group decided this issue would become viable when a specific state and site had been identified. This group was concerned with an adequate definition of "optimum site."

The Woods group raised certain questions appropriate to this issue. They asked, "How much weight in siting is given to local sentiment and concerns?" If more than one site was proposed, the Woods group noted, local sentiment should enter into the decision, while if only one site was recommended then local sentiment would be overridden.

The Mudrey group concluded that safety was the most important feature in repository siting. From a public acceptance viewpoint, this group noted that siting a repository in a particular state would be more acceptable if the state knew the whole range of sites being considered. The idea is that the public and the state would probably be more amenable to a site if they knew there were other locations being considered along with their community.

The Nemeth group discussed the optimum site issue and determined that each potential repository site should meet some basic technical standards. Once the technical standards were met then political aspects should play a role in the siting process.

This group expressed concern in their discussions over the definition of "optimum site." Does this mean technically optimum or merely acceptable? The group suggested the NRC should not preclude the best technically optimum site for a politically acceptable one.

The Porter group could not agree on the meaning of optimum nor could they agree on what NRC meant by the term. The group did agree that the optimum site had to address both technical and political considerations and neither could be precluded from the concept.

This group challenged the as low as reasonably achievable (ALARA) concept with regard to optimum siting. The group raised the question of whether or not the (ALARA) concept can be meaningfully defined.

The Day group agreed that a repository site should be the optimum one. Further, the decision on the optimum location should be predicated on a risk assessment along with other considerations.

The Paulson group, in its discussions, concluded that siting a repository optimally means to maximize the factors of public health and safety and environmental considerations. Further, this group explicitly noted that concurrence of the state involved was necessary for final site approval.

The Davis group noted that no procedures have been developed for determining the optimum site. This group suggested weighing the factors of health and safety, environmental, social, and economic considerations. After this, the local issues of siting should be considered. The optimum would then be a balance between the weighed issues and local sentiments.

The Lavine group discussion focused on the definition of optimum and how an optimum site would be determined. Participants from the states that have laws prohibiting a repository indicated that it would be very difficult to convince their citizens that their state was an optimum site for a repository.

Balancing Health and Safety with Other Risks

2e. "In siting a repository, how should the potential risk to health and safety be balanced with other risks and benefits (e.g., environmental impacts and economic/social impacts)? Which are most important? Who should be responsible for assessing the proper balance?"

The groups showed unanimity in that protection of public health and safety was the single most important consideration in repository siting. In some groups, transportation of waste was cited as the second most important factor while isolation of the waste from the environment was ranked third.

The Sowards group, while citing the public health and safety consideration as being the most important, noted that the level of risk acceptability was poorly, if at all, defined. This group noted that NRC had not adequately discussed its approach to the (ALARA) concept.

The Woods and Gilbert groups agreed that public health and safety were the most important considerations in siting. The Gilbert group noted that the responsibility for assessing the proper balance of risks involved with siting a repository may ultimately fall to the legislatures and the courts.

The Nemeth group noted that DOE and the impacted state should have the responsibility for assessing the proper balance between health and safety with other risks and benefits.

The Porter group indicated that technical and political considerations were more of a balancing factor in risk to benefit assessment than anything else. The Day group saw the problem of risk assessment as one that could have fifty possible

evaluations if each state was responsible while on the other hand if the federal government was responsible the possibility of political intervention existed.

The Davis and Lavine groups saw the responsibility for risk assessment as one that should be shared by the states and NRC. The actual method of assessing the balance would depend upon the specific site suitability criteria.

Other Siting Impacts

3. "What issues related to site suitability should be considered in selecting and licensing a site for a HLW repository?"

As an issue, the groups generally included this question with discussions on subissues or related topics.

Short/Long Term Socio-Economic Effects of Siting a Repository.

3a. "What are issues of interest to the States with regard to short and long term economic and social effects of siting a repository?"

The group discussions on this issue were many and diffuse. Some groups concentrated their discussions on the development costs of the repository while others dwelled upon the social and economic effects of siting a repository upon a community.

The Sowards group saw the impact upon a community as being substantial. It could, this group noted, be negative or positive. They suggested that DOE propose to NRC how community impacts be handled.

The Sowards group also focused some of its discussion on how the cost of a repository will be recovered. One comment noted that the cost of developing a repository would be a federal responsibility, while another noted that the federal costs would be recovered in some yet undefined way.

One participant in the Sowards group discussed the related experience of construction sites in Nebraska and North Dakota where communities suffered from the "boom" or "bust" situation in developing new activities. This was equated to potential construction problems surrounding development of a repository.

An interesting discussion held in the Sowards group concerned the marking or identification of a repository. The question was raised whether or not a repository should be given a "low profile" identification or significantly marked. In this same discussion, the group addressed the problems associated with restoring the land to its original condition upon decommissioning or marking it so that anyone and everyone in the generations to come would know what was buried in that location.

The Gilbert group expressed a concern with the types of benefits a state could anticipate in siting a repository. One comment was that a repository would not create any economic benefits for the state.

The Woods group approached the issue in several ways. It discussed the problem of payment for front end costs in repository development while at the same time noting that if the repository was to be on federally owned land the community would lose an important and valueable tax base. It suggested that DOE may have to make payments to the community/state in lieu of taxes to cover the socio-economic impact of building a repository.

The Mudrey group discussion was primarily concerned with the perpetual costs associated with operating a repository. These costs were identified as the maintenance of public health and safety services, environmental monitoring and land use.

The Nemeth group, in addition to discussing the immediate needs of a community during the development stage of a repository, surfaced a concern over the retrievability of waste. Some participants in the group held that it was too early to make a decision on this issue and that only temporary storage should be approved until

the potential value of the waste was determined. The group suggested that NRC should consider underground retrievable storage of waste as long as the health and safety of the general public were not compromised.

The Porter group, in its discussion of this issue, identified the areas of educational facilities, sewage disposal, water, hospitals, and transportation facilities, to accommodate any increase in population due to construction personnel, as important social and economic considerations for a community.

This group also expressed concern over who will bear the cost of a repository. In discussing this issue the following questions were raised. (1) Is a repository cost effective in relation to the present state of the art in waste management? (2) Does NRC have the authority to request that DOE do a community impact study? (3) How does NRC interpret NEPA in relation to waste management?

The Day group discussion centered around the additional costs to a state for (1) training personnel to deal with regulating the transportation of waste, (2) monitoring the environment, and (3) monitoring repository operations. On the local level, this group noted the additional burden on the community for the provision of schools, hospitals, sewage disposal, and other amenities necessary for a construction and operating force.

The Paulson group discussed many of the same considerations noted by other groups and added the need to consider colocation of additional acceptable facilities (specifically agricultural or silvicultural activities on the surface to help maintain buffer zones). This group, in its discussions, took note of the effect of delaying the creation of a repository e.g., a backlog of spent fuel which might lead to the shutdown of power reactors due to the lack of temporary storage space.

The Callen group discussion stressed the need for compensation to impacted states, the need for special economic incentives to the host state as well as to adjacent states, the need for continuing compensation so that future generations may benefit from having the repository, and the need for compensation to replace the value of land lost to repository use.

The Davis group showed concern with several economic issues. These were: (1) The value lost by the preemptive use of land for a repository. (2) The value lost in resources, particularly mineral, by use of the land for a repository site. (3) The construction "boom or bust" concept and its impact on the community, and (4) The esthetic value of the land may be lost, particularly from a recreation standpoint, by siting a repository.

The Lavine group expressed immediate economic concerns as (1) the creation of jobs, and (2) the need for service facilities and service related jobs.

Number/Location of HLWR's.

3b. "Should there be multiple, regional HLW repositories or one or two large national repositories?"

3c. "Should two or more HLW repositories be developed concurrently to assure disposal capacity in the event one site is found to be inappropriate?"

These two issues were generally deemed by the groups to be so close in nature that they were usually discussed by the groups together. It is significant to note that once the proposed cost of developing a HLWR surfaced ---New Orleans---the working groups showed reservation with recommending the development of more than two HLWR's.

The Sowards group noted the importance of transportation of waste on this issue and declared that transportation problems could dictate the need for regional repositories.

The Gilbert group, noting that the number and location of repositories would be a function of need, environmental impact, transportation complexities, agreed that multiple sites should be developed. The group noted that (1) NRC should endorse concurrent development of two repositories, (2) NRC should support the option of surface storage until the reprocessing problem is solved, (3) NRC should limit the size of the repository (amount of waste stored at one site), and (4) NRC should control the size of above ground and subsurface storage as there would be a difference.

The Woods group showed a preference for one or two large national repositories assuming there was technical confidence in the geologic structure of the site. This group, in their discussions, noted that the Western portion of the United States with its vast federally owned lands would more than likely be the prime area of consideration for siting a repository.

The Mudrey group noted that from a technical standpoint regional repositories would minimize the general risk to transportation hazards while one or two repository sites would be preferable from a population exposure standpoint. This group noted that development costs may prohibit concurrent construction of two repositories.

The Nemeth group agreed that no more than two repositories should be constructed. This group did not support the regional concept for repository siting.

The Porter group supported the development of two repositories concurrently. This group was concerned with the disposal of military wastes and wastes returning from foreign reactors.

The Day group concentrated its concern on this issue with a discussion of transportation problems associated with the number and location of a repository. This group noting that the United States should not become the repository of the world's waste, suggested that an international repository be set up under IAEA to handle waste from foreign reactors.

The Paulson group agreed on national not regional repositories and the fewer the better from both a technical and political standpoint.

The Callen group did not reach agreement, in their discussions, on the number of locations for sites but did agree that the number of repositories should be considered from the perspective of cost effectiveness.

The Davis group agreed, in discussion, that there should be multiple sites. These sites should be determined on a cost/benefit analysis to be made by DOE. This group discussed the value of colocating a reprocessing plant at a repository to decrease the volume of stored waste. The Davis group suggested that the geographic relationship of waste producing facilities to geologic storage sites be considered when determining the number of repositories needed.

The Lavine group did not agree on the number or location of repositories because of the complexities of transportation of the waste. The sentiment as discussed in the group was for two large repositories.

State Compacts/Coalitions to Deal with Siting Issues.

3d. "Should there be a regional coalition of States to deal with the issues involved in siting a HLW repository? How would a regional coalition deal with the issues?"

The groups were not consistent on this principal concern. The Denver workshop reported little interest in coalitions as a way to deal with waste disposal problems. The New Orleans workshop indicated that coalitions have merit in generating mutual support among impacted states and could be a vehicle for applying political pressure should it be necessary. The Philadelphia workshop generally favored the formation or use of current coalitions to deal with issues and problems in siting a repository.

The Sowards group noted that in the southwestern United States, state experiences in dealing with regional coalitions were not good and that coalitions in general were not very productive.

The Gilbert group noted that the coalition concept had been used in the past to more or less exercise political and/or technical power. Political factors will determine their use in deciding upon a repository site.

The Mudrey group noted the value of a coalition in providing expertise, training and educating a larger group than just one state. A coalition it concluded could assist in dealing with the federal government on transportation problems which are so complex and fractionated that no one state can possibly address all the problems.

The Nemeth and Porter groups discussed the merit of coalitions but declined to favor the formation of one to deal solely with siting issues. The Day group thought that coalitions might have merit particularly when dealing with NRC from a border or nonimpacted state viewpoint.

The Paulson group saw a potential value in a coalition of states particularly if it grew voluntarily. This group also saw the merit of coalitions of professional associations and political groups in dealing with the problems of siting a repository. They viewed the role of these groups as strictly advisory and without decisionmaking authority.

The Callen and Davis groups discussed the merit of coalitions in dealing with common transportation problems and as a locus of technical expertise where smaller states could obtain advice and assistance. The groups noted that NRC and DOE would have to be receptive to working with the coalition to be of any value.

The Lavine group did not discuss any particular merit associated with a coalition but agreed they may have value except in those states that do not want to surrender their individual power and in New England where it was noted that the coalition concept would never work.

Compensation/Special Incentives.

3e. "Should the host State or other States affected by the siting of a repository (e.g., States through which wastes will be transported) be compensated or offered special incentives?"

This issue was a major concern to participants at all workshops. The concern was expressed by both those states that might be impacted by repository siting as well as those states that would become transportation corridors to a repository. Although it was pointed out that transportation of other hazardous material created significant dangers over and above those associated with moving nuclear material, the workshops noted that one major release would be a national disaster.

A major issue with transportation of nuclear waste was who is responsible for the overall problems of movement. The present regulations governing the movement of hazardous materials is so confusing and complicated that a major effort is needed to determine responsibility. This determination is needed at the federal level as well as at the state level.

The Sowards group agreed that compensation should be paid to the impacted states for physical facilities and other items affecting community impact. The group discussed two types of special benefits, (1) colocation of a reprocessing plant and (2) transportation improvements. One participant in the Sowards group discussed the case of a contractor in Utah who was allowed to pay advance taxes on a construction project which were then used for facilities and services. This could be adopted as one way of paying the front end community costs of repository development.

The Sowards group did not support the special incentive concept as an inducement for state acceptance of a repository.

The Gilbert group noted that this issue held a veiled notion of a "bribe" to accept a repository. This group discussed and recommended that NRC reword the issue to read "compensate for negative economic impacts."

The Woods group did not endorse special incentives to accept a repository but did recommend that certain special benefits given to a state such as improved transportation facilities to a repository would be appropriate and not construed as a "bribe."

The Mudrey group discussed the compensation/special incentives issue from the standpoint of employment and transportation. The group agreed that the federal government should cover location and dislocation expenses associated with a repository.

This group discussed in detail the volume of waste to be transported in the future based upon a scenario provided by one of the participants. The group concluded that the amount of waste that would have to be moved and lowered into the repository on a daily basis would approach the technical limits of the handling capacity for the facility.

The Nemeth group showed major concern with transportation hazards while agreeing that the impacted states should be compensated in lieu of tax payments.

The Porter group agreed that compensation should be provided but did not agree on the type that should be rendered. One participant in this group suggested a community might want a repository if incentives were given. One incentive might be reimbursement to the community of a fee based on the volume of waste stored and its level of radioactivity.

The Day group expressed the feeling that a state would hesitate to accept a repository if some type of compensation was not offered. This group suggested the NRC study and develop a mechanism to assist the states in monitoring the activities of a repository without the penalty of losing any on going federal programs.

The Paulson group agreed that both the host state or other impacted states should be compensated or offered special incentives to underwrite the economic impacts of accepting a repository.

The Callen group indicated that host states should be compensated with "no strings attached funds" for research and monitoring activities. This group indicated that the federal government should assume statutory, financial responsibility for all impacts on action involving a repository.

The Davis group, noting that special incentives/compensation should be made available to a host state, suggested the possibility of establishing an impact fee. These fees would be to cover the various effects of siting. This group noted the need for compensation for "negative economic impacts" such as the loss of revenues from property tax on the land that would be withdrawn from use and included in the repository area.

The Lavine group agreed on the need for both special incentives and compensation. It noted that special funding should be available for training security officers, civil defense personnel, road improvements, and radiological monitoring. The group suggested that some special incentives could be (1) a portion of the federal taxes paid in the state could be diverted back to the state, and (2) do not exempt federal land from state and local taxes.

Who Pays - Ratepayer or Taxpayer?

3f. "What type of risk compensation or special incentives might be offered to a state? Who should pay for such incentives (e.g., ratepayers, taxpayers)?"

A majority of the groups believed that they had discussed this issue as part of another issue. With regard to who should pay, the groups generally indicated the ratepayers should be responsible rather than the taxpayers.

The Nemeth group suggested that the types of compensation may be (1) development costs, (2) storage costs, (3) monitoring costs, and (4) perpetuity costs.

The Day group identified four types of special incentives that may be considered as (1) grant programs for training personnel in waste management activities, (2) the host state should be able to store waste without charge, (3) the host state should be allowed to tax stored waste, and (4) NRC and/or DOE should provide assistance to the host state by provision of professionals in waste management activities.

The Paulson group discussed the types of compensation and/or special incentives to be given and identified the following: (1) reimbursement for increased local and state expenditures, direct and indirect, related to siting and waste transportation, (2) highway maintenance costs, (3) police and civil emergency costs, and (4) social services costs.

One participant in the Paulson group suggested a "no strings attached tombstone tax" to be used by the host state for any appropriate purpose. The group was divided on how the tax should be made. One section believed a charge should be made proportional to the distance the waste is transported, a second section believed a charge should be made on a uniform national basis, and a third group desired more information before making a judgement.

Evaluation of Siting Criteria

4. "What is the reaction of the State representatives to the Preliminary Site Suitability Criteria proposed by NRC ?"

In general the groups reaction to the criteria was mixed. The discussions indicated that they were (1) too general, (2) should specify mandatory factors over desirable, and (3) that NRC should allow the states time and an opportunity to respond to the criteria in writing.

Concepts noted for consideration as additional criteria were (1) the problems and potential of colocating a repository with a reprocessing plant, (2) the problems and potential of locating a repository near a populated center or population concentration, (3) the problems of geothermal impacts on a repository location, and (4) the problems of waste migration in ground water flows.

Suggestions to modify the criteria addressed the need to (1) specify control of the repository for an indefinite period by the federal government, (2) identification of potential restraints on adjacent lands, (3) allow the states impacted to monitor the repository activities, (4) clarify what NRC means by natural, multiple barriers, (5) clarify what is meant by significant radiological releases, (6) define and differentiate between terms such as "seismic and tectonic", "small fraction", "first point of reasonable accessibility", (7) include chemical as well as radiological dangers, (8) set air and water standards consistent with EPA regulations, (9) delete the use of 10^7 which is an unrealistic figure and use words to the effect that siting should be based on geological investigation and predictions of future use and not solely on past events, (10) specify the entire repository area not just the site with regard to (9) above, (11) define "valuable resources" that may be present or identified in the future at the repository, and (12) clarify the transportation of high level waste in all aspects.

Suggestions on weighing the criteria focused on site specific information. In all cases, the most important factor to be weighed was the protection of public health and safety with transportation risks following close behind.

As a concern, the groups saw failure to meet any single criteria as a reason to exclude the site from consideration. In this regard, the NRC should set the minimum level standards for a repository.

The issue of use of NRC regulations over regulatory guides generated discussion on the value of each and the type of action each required. The participants, in general, requested early notification of draft regulatory guides with sufficient time allowed for review and comment by the states.

The discussion on the category of 'most important characteristic' resolved itself into being a site specific consideration with minimumization of the risk to the public health and safety receiving top consideration.

III. SUMMARY CHARACTERIZATION MATRIX

Issue

1. Role of the States
2. Reconciling Local/National Concerns
3. Other Siting Impacts
4. Evaluation of Siting Criteria

Site Suitability Criteria and Issues
Issue Matrix Summary

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinions	Comment
1. Role of the States in the HLWR Siting Process.	The general belief was that impacted states should have an active role with NRC in the review, licensing, and monitoring activities of a HLWR.			In general, the discussion groups chose to address this as a component of the other subissues in the first question.
1a. Final authority for site approval.	A majority of the discussion groups agreed that NRC, in cooperation with the impacted states, should have final responsibility for site approval.	As principal concerns the groups recorded the need for early involvement in the decisionmaking process, the use of Federal preemption on siting a HLWR within the boundaries of a nondesiring state, the legality of a state's right to veto a candidate site, and the mechanism of how a state could participate in the final approval process.	This issue raised minority opinions within the groups. These were that the final authority for siting a HLWR would ultimately be the President, the Congress or the courts.	

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
1b. NRC's proposed licensing process.	Consensus on this issue ranged from satisfaction to dissatisfaction. However, certain central themes with similar features were emphasized by most of the groups. These were: (1) the states want early involvement and participation with NRC and DOE, with full disclosure of information, in the licensing process, (2) both impacted and adjacent states want the right of early input to the process, if not total involvement, and (3) the states want federal assistance (funding) so that they may conduct an independent assessment of any potential site.	This issue produced many and varied concerns. They may be characterized as (1) no opportunity for early state involvement, (2) noncompliance by the federal government with state laws, (3) no state input into the ultimate decision on siting, (4) the relationship between surface facilities/operations and subsurface disposal arrangements as they may impact on state laws, (5) no NRC license without state approval of the site, and (6) that NRC should insure that DOE acts in the best interest of all parties in repository siting. Other concerns that were addressed are located in the issue matrix. One particular concern was voiced by a participant from Oregon who noted that DOE activities in Hanford, Washington tended to indicate that a repository would be sited there without input from the state of Oregon.	A minority view expressed the concern that NRC should not license a repository in a state unless the impacted state has demonstrated a capacity to perform an independent assessment of the facility.	Reflecting the factors discussed under principal concerns, the general comments addressed: (1) early state involvement, (2) open discussion of all issues, (3) consideration of alternative sites during the licensing process, (4) the NRC should assume the role of watchdog and protector of all interests during licensing, (5) the NRC should establish scientific and technical standards as the basis for siting over political considerations, and (6) the impacted states should be included in the licensing process as an interested state with federal funding provided to assist the state in its participation.

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
1c. Appropriate State Activities	As a summary characterization of appropriate activities, the groups reached consensus on performing environmental reviews, monitoring repository development activities, reviewing proposed regulations and monitoring repository operator activities. A general theme found throughout the groups' consensus reaching activities was one of insuring satisfaction with the protection of public health and safety.	The states, in general, have passed, or would if faced with the prospect of a HLWR laws and/or regulations which set forth appropriate state activities in waste management. The concerns on this issue may be summarized as complying with state laws as they address transportation of waste, and repository siting. Other concerns raised by the groups had to do with the administrative handling of activities in the buffer zone and the need for federal assistance in order to carry out appropriate state activities.		The groups commented on the need for "performance assessment" of federal activities in repository siting. This could be done independently or in conjunction with NRC or DOE.

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
1d. Federal/State Communications	The responses of the groups on this issue were diffuse. Consensus was reached on selected subissues of the main topic. Some groups simply indicated that the division of responsibility did affect interactions while other groups addressed the topic from the standpoint of improved communications. A central theme recorded on this issue was that of an implied responsibility on the part of the federal government to inform the states on all waste management activities.	As a principal concern, the groups addressed this issue from the standpoint of how state input would be acknowledged and accepted under the fractionated division of responsibility that exists within the federal government. The case of transporting hazardous materials was cited as an example of how diffuse regulatory activities can become. There were other subtopics discussed under this issue. These were the added workload created by the division of responsibility and the emphasis on the need to increase the general public's knowledge on waste management in the nuclear energy program.		The groups commented on the need to improve relationships between the states and federal agencies and the need to improve communications. It was noted that NRC has made considerable improvements over the old AEC in both areas. The workshops were cited as an example of the actions being taken to improve communications and working relationships. The liaison officer program of NRC was cited as a positive step while it was pointed out that the Bureau of Mines liaison officer program might be studied to ascertain whether or not it had procedures that may be worth incorporating into NRC's program. As an example of where improvement in communications and relationships is urgently needed, the groups continually cited problems of regulating the transportation of hazardous materials.

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
2. Approaches to reconciling local/national concerns. 2a. State statutes which identify a role in siting a HLWR.	The general consensus among the groups was that there are state laws in existence which define a role for the state in the siting process. These were characterized as land use planning statutes and transportation regulations. Several groups noted that allowing the state early input in the licensing process would avoid misunderstandings and bad relationships between the parties. One group agreed that the federal government should make a conscious examination of state laws so that compliance with them would be assured during siting.	The principal concern of the groups on this issue was applicability of state statutes on federally owned land. The groups were concerned with the right of federal preemption over state regulations and whether or not current state statutes were specific enough to cover the problems associated with siting a repository. One group noted that the federal government should "own and control" the land used for a repository, this included the buffer zone area.		The groups commented on the existing state statutes that are unique to each state. The central theme in the comments was that the states want their laws recognized and complied with.

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
2b. Reconciling Federal Actions and State Laws	The general feeling among the groups was that DOE should be required to comply with state laws or demonstrate why it should not. There were various mechanisms cited that would address the issue. Some of these issues were (1) DOE's level of compliance in the environmental impact statements, (2) inserting into the federal code procedures to assure compliance, and (3) identifying political mechanisms that would assist the states in gaining compliance with their statutes.	The general concern of the groups was that DOE would begin development activities without state knowledge or inputs. They also expressed a concern that there was a need to educate the general public on waste management and existing state statutes.		A general comment was made that this issue may be the most important and crucial to the workshop. It was noted in several groups that states have passed laws so that the federal government will acknowledge their interests and, perhaps, allow them to gain access to federal proceedings. One group commented that in many cases the states have only received "lip service" from the federal government when it came down to complying with state statutes. It was noted that land use planning, transportation, public health and safety all offer a vehicle for federal/state interaction, however, in many cases federal agencies do not apply for permits. They say they conform to the intent of state laws but do not comply because it would set a precedent.

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	Consensus	Principal Concern	Minority Opinion	Comment
2c. NRC proposed regulations that would obviate the need for state laws.	Consensus on this issue ranged from "no acceptable features" that could obviate the need for state laws to there were features but they were not specified. Two groups noted the role of early and effective communications and how this would eliminate the need for certain state laws. One group agreed that NRC should develop a model law addressing repository siting. It was acknowledged that something of this nature would be useful in obviating state laws.	As a general concern the groups saw the issue as one that may not be a desirable situation. One group expressed this concern by recording the fact that they did not want the NRC acting for the states.		

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
2d. Balancing Technical and Nontechnical Criteria	The groups reached a consensus on the issue with certain additions and modifications. The general view was that any repository site should meet a basic set of technical criteria after which other considerations may be addressed. These were identified as political, social, and economic in nature.	The main concerns of the groups were: (1) Develop procedures for optimum siting, (2) weigh the factors being considered with health and safety the most important, (3) make DOE examine all optimum sites, (4) make DOE present alternative sites, (5) insure public acceptance of any site, and (6) gain state approval of a proposed site before development activities.		In general, the groups wanted a better definition of what was meant by "optimum site." There was a feeling that the optimum site concept would fall under site specific conditions. One group challenged the ALARA concept in relation to the optimum siting approach. The comment noted that it would be difficult to meaningfully define ALARA.

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
2e. Balancing Health & Safety with Other Risks	All the groups reached a consensus that public health and safety were the most important considerations in siting a repository and that these considerations should not be overridden. One group saw the responsibility for assessing the proper balance between risks and benefits as a cooperative role between the federal and state governments. The actual way of assessing the balance would depend upon the specific site.	In general all groups noted the importance of health and safety in repository siting, while some groups were concerned that the level of risk was not adequately defined. One group expressed concern that the NRC had not adequately discussed its position on the use of the ALARA concept when it came to risk to benefit analysis.		As a general comment, the issue raised the question of who would make the assessment of what was an acceptable risk. If the states were given the responsibility then fifty different assessments could be anticipated. If federal agencies were left with the responsibility, the potential for political intervention is great and the problem would be susceptible to being solved as in the national interest.

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
3a. Short/long term socio-economic effects.	There was general agreement among the groups that the impact of siting a repository near a community would be substantial and it could be either positive or negative. The matter of land use and limitation in repository siting surfaced the need for large financial input to take care of additional social services, public health and safety services, and transportation requirements. An overall theme on this issue was that economic matters should not override the importance of public health and safety in siting a repository.	The siting impact issue raised many social and economic concerns among the participants. The range of concerns varied from (1) job creation, (2) training programs for local employees, (3) funding for community services and facilities, to (4) the value of resources lost when the land and the minerals therein were withdrawn from use. Other concerns addressed the cost of repository development and maintenance to include associated perpetual costs.		Comments on the impact of siting a repository may be characterized as concerning: (1) the cost involved, (2) identification of ways that the repository costs may be repaid, (3) identification of impacted community needs, (4) repository identification through all phases of development, commissioning and decommissioning.

ISSUE	SUMMARY CHARACTERIZATION			
	Consensus	Principal Concern	Minority Opinion	Comment
3b. Should there be 3c. multiple, regional HLW repositories or one or two large HLWR's.	The general consensus of the groups was that at least 2 repositories should be developed. The cost of repository development was acknowledged by several groups as being the determining factor in how many sites should be initially developed.	The overriding concerns on this issue were (1) cost of repository development and (2) transportation of waste. Some groups recorded the fact that the cost and hazards of transporting the waste long distances may dictate that there be regional repositories. One group saw the number and location of HLW repositories being a function of the need for permanent storage, environmental impacts, and transportation constraints.		In general most comments were concerned with the risks and benefits of having more than one repository. The groups saw transportation complexities as having the most influence on the number and location of any repositories.

ISSUE	SUMMARY CHARACTERIZATION			
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3d. Should there be regional coalitions of states to deal with siting issues?	The groups in Denver expressed negative views on the potential of regional coalitions while the groups in New Orleans saw limited value for the states in working through coalitions. The Philadelphia groups expressed more interest in the concept than all other participants. In summary the concept received more negative than positive reaction from the groups.	As a general characterization the groups were concerned that coalitions already exist and their value in achieving quantifiable results was marginal. In the main, the groups saw merit in having coalitions to deal with interstate problems such as transportation, adjacent or bordering state problems and educational problems associated with repository siting.	A minority view saw the value of coalitions but noted that in the long run states interests would prevail.	A comment made on the issue noted that NRC/DOE must be receptive to working with coalitions in order to have any merit at all. Discussion on the concept varied from negative statements to positive ones. The negative reaction was noted mainly at the Western workshop while the positive comments were mainly in the Eastern workshop. The positive statements addressed the value of coalitions in (1) providing external professional help to a state, (2) external training activities, and (3) education and information activities to a state.

ISSUE	SUMMARY CHARACTERIZATION			
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3e. **Should there be compensation or special incentives given for siting a repository?**	In general the groups all reached consensus on the need for compensation to cover the direct and indirect costs of repository siting. The groups did not totally agree on the type and need for special incentives. Some groups saw special incentives as "bribe" money while a few groups registered the need for this type money.	The principal concern of the groups was how to distinguish between compensation and special incentives. Once a distinction was made, the other concerns of (1) inflationary effects, (2) payments in perpetuity for repository costs, (3) transportation costs, (4) employment incentives and benefits could rationally be addressed.		Comments on this issue ranged from liability coverage to the cost of relocating people at a potential repository site. Transportation hazards and the cost of monitoring such movements were a major topic of discussion. The notion of special benefits was commented on with one group noting the benefits of having a reprocessing plant colocated with a repository.

ISSUE	SUMMARY CHARACTERIZATION			
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3f. Who Pays - Ratepayer or Taxpayer?	This issue produced another split consensus among the groups. In the Western workshops the theme of no special incentives prevailed while it was recognized that compensation for community impacts would have to be paid. The central workshop saw the need for direct and indirect costs to be compensated while the federal government would maintain the ultimate responsibility for siting costs. The eastern workshop registered the need for compensation and special incentives. In all groups that addressed the issue the consensus was that the rate payers should be responsible for payment of the costs and not the taxpayers.	The concern on this issue was that ultimately the taxpayer would bear the cost of siting a repository. A second concern was that NRC should compensate impacted states for direct & indirect costs while at the same time the federal government should be ultimately responsible for a catastrophic accident.	A minority view saw the "special incentives" idea as a bribe. It held that if the community impact problems were solved there would be no need for special incentives.	One group identified costs to be compensated for as: (1) development costs, (2) storage costs, (3) monitoring costs, and (4) perpetuity costs. Typical incentives identified by the groups included: (1) grant programs for training and employment, (2) host state should be able to store the waste with no charge, (3) the host state should have the capacity to tax stored waste, (4) DOE/NRC should assist the states with the provision of technical assistance by providing professional expertise as appropriate, and (5) provision of assistance to aid in covering the cost of additional community services.

ISSUE	SUMMARY CHARACTERIZATION
4. Evaluation of Siting Criteria	**ADEQUACY OF THE CRITERIA** The groups reacted to the issue of adequacy of the criteria in many ways. In general the reaction may be characterized as negative. Only one group reached a consensus that the criteria were adequate as proposed. The remaining groups saw the criteria as: (1) too broad and general, (2) scope adequate but the content inadequate (3) insufficient on everything except geological aspects, and (4) not adequate as proposed. **ADDITIONS TO THE CRITERIA** The response of the groups to this general area was diffuse. Generally, the groups wanted more specificity in the areas of interest proposed by the criteria. Additional factors for consideration were: (1) timing of state participation should be defined, (2) more emphasis should be placed on transportation of waste, (3) the criteria should be extended to include meteorological problems and siting, (4) population concentration problems and siting, (5) colocation of a reprocessing plant and a repository, (6) the cost of repository development and decommissioning, and (7) the function of U.S. ownership and control of a repository.

ISSUE	SUMMARY CHARACTERIZATION
4. Evaluation of Siting Criteria	

MODIFICATIONS TO THE CRITERIA

The groups concentrated their discussions on modifications around the proposed criteria. The thrust was for better and more specific definitions. For example, the groups wanted better definitions for:

(1) multiple barriers,
(2) radiological releases,
(3) as low as reasonably achievable, (ALARA)
(4) geologic stability,
(5) ownership and control of the land of a repository,
(6) unplanned intrusions into the area of a repository,
(7) waste transportation risks,
(8) the value of future resources resting in a repository, and
(9) land use in the buffer zone.

CRITERIA WEIGHTING

The groups generally agreed that weighting of the criterion was a good idea. There were some general themes on this issue. These were:

(1) the weighting of the criterion would be more meaningful if they were site specific,
(2) each criterion should be given different weights; however, all should be minimally attained,
(3) special emphasis should be placed on all matters affecting health and safety, and
(4) a risk analysis should be performed on each potential site to determine the level of each risk.

ISSUE	SUMMARY CHARACTERIZATION
4. Evaluation of Siting Criteria	

FAILURE TO ATTAIN A CRITERION

This issue was generally approached by the groups in the same way. They agreed that a potential site should minimally satisfy all the criteria. It was noted that site specific information would make things more meaningful in making a determination. One group cited the ALARA concept as appropriate while another said that failure to meet any standard was reason enough to exclude the site.

USE OF REGULATIONS VERSUS REGULATORY GUIDES

The groups that addressed this issue were divided over the appropriate use of regulations versus regulatory guides. Those groups that did address the issue noted that states should have an opportunity and more time allowed to respond to draft regulatory guides and regulations.

MOST IMPORTANT CHARACTERISTIC IN SITE SELECTION

The groups addressed this issue with unanimity. The element of public health and safety was selected as the most important characteristic in site selection. One group noted the importance of transportation of waste while another cited the importance of insuring the isolation of waste from the environment.

IV. Recommendations

The recommendations from the groups to the NRC can be categorized into four areas. These are those that address: (1) generalized concepts that may be incorporated into siting considerations, (2) procedural recommendations of two types and those that address things that NRC can accomplish at the federal level and those that NRC should pursue at the state level, (3) informational processing ideas that may produce better communications, and (4) specific ideas that may be incorporated into siting criteria.

The recommendations will be explored in greater detail in the order noted above. In some cases, they were supported by a consensus of each working group and in other cases they represent an aggregation.

a. General Recommendations.

(1) Consideration should be given at the Federal level to assist impacted States with funding so that they may (a) participate in assessment and inspection activities, (b) cover the increase in State services required to support repository activities, and (c) conduct an independent assessment of a repository site.

(2) The Federal government should have the ultimate liability and responsibility for remedial actions in connection with accidents, accidental releases, repository failures, and waste transportation mishaps.

(3) Consideration should be given to defining regulatory and enforcement procedures in the area of waste transportation. Federal and State roles should be clearly defined while impacted States and those States that are in transportation corridors should be compensated for the extra burden of providing security and enforcement of transportation regulations.

(4) The number and location of repositories should be determined on a cost/benefit analysis with consideration given to the transportation risks involved.

(5) Recommendations on compensation and special incentives differed by region. The Denver workshop participants recommended compensation for direct and indirect siting costs but no special incentives for accepting a repository. The New Orleans and Philadelphia workshop participants saw the need for compensation to cover "negative economic impacts" and special incentives in order for a State to accept a repository.

(6) The Philadelphia workshop recommended special incentives to assist in:

a. Training Programs
b. Job Programs
c. For colocation of a reprocessing plant
d. For community impacts

(7) A recommendation was made that the States should be able to specify the incentive amount and type.

(8) A recommendation was made that repository costs could be recovered through:

a. Inventory Taxes
b. Payments in lieu of taxes

(9) NRC should suggest to DOE that more discussion needs to be conducted on the retrievable/non-retrievable trade off in waste management.

b. Procedural Recommendations.

(1) NRC should require DOE to comply or demonstrate why it should not with State laws during the siting, development, operation, and decommissioning of a repository.

(2) NRC should require DOE to submit multiple sites for consideration in the licensing process.

(3) NRC should develop with State consultation a model for State participation in the licensing process.

c. Recommendations for Improving Communications

(1) The Federal agencies should develop the ability to reach the appropriate agencies and people at the State level.

(2) NRC should convey to DOE and EPA the concern of the States with regard to their input to site selection criteria, the consideration of potential sites and the development of environmental impact statements.

(3) NRC should compile and distribute a monthly summary of activities and a bibliography on waste management.

d. Specific Recommendations to the Proposed Site Suitability Criteria

Proposed Criterion

"a. The repository site should be controlled by the United States Government. This control should include the prohibition of all activities including mining and exploration for minerals which may interfere with repository operation or adversely affect the integrity of the repository."

(1) Criterion 'a' should specifically set forth that the federal government should own, not just control, the repository in perpetuity. This control would not, however, exclude the rights of the impacted states to monitor the operation and decommissioning of the repository.

Proposed Criterion

"b. The repository site should provide a system of multiple, naturally occurring barriers to waste transport."

(2) Criterion 'b' should be clarified to define the meaning of "multiple, naturally occurring barriers."

Proposed Criterion

"c. No reasonably foreseeable events whether expected or planned, should result in significant radiological releases to the environment at any time over the required life of the repository."

(3) Criterion 'c' should be reworded to delete the words "whether expected or planned."

Proposed Criterion

"d. Radionuclide concentrations in any pathway to man, at the first point of reasonable accessibility, should be as low as is reasonably achievable and in any case shall not exceed a small fraction of the limits specified in 10 CFR, Part 20, Appendix B, Table II, Column 2, considering any credible failure or combination of failures in the system."

(4) As it concerns radionuclide releases, criterion 'd' should incorporate the EPA standards for air and water quality. Chemical toxicity should also be prescribed when setting the limits of releases. Definitions should be provided wherever there is a possibility for misconception. For example, the words "small fraction" and "first point of reasonable accessibility" should be clarified.

Proposed Criterion

"e. The geological medium should be such that the use of state-of-the-art techniques for site exploration, subterranean construction, and depository decommissioning will not compromise the long-term effectiveness of the repository."

(5) Criterion 'e' should incorporate the word monitoring after "subterranean construction."

Proposed Criterion

"f. The geological medium should be such that chemical, radiological, and thermal effects of the waste on the repository will not compromise the long-term effectiveness of the repository."

(6) Criterion 'f' should define the meaning of "thermal effects" as it impacts on long term effectiveness.

Proposed Criterion

"g. The repository site should be shown to be geologically stable, i.e., it shall not have experienced geological events during the past 10^7 year period of a type and magnitude such that the long-term effectiveness of the repository could be compromised were similar events to occur at some future time."

(7) Criterion 'g' should delete the reference to 10^7 years. This figure is unrealistic and could preclude potential sites and even regions from consideration. The basis for this criteria should be a professional evaluation of the geological structure and the future use of the area.

Proposed Criterion

"h. The repository site should have characteristics such that the consequences of unplanned intrusions caused by either natural events or by acts of man will be as low as reasonably achievable."

(8) Criterion 'h' should expand the ALARA concept so that it specifies the minimum acceptable level for any risk.

Proposed Criterion

"i. Determinations of site suitability should consider the results of geological investigations extending to a radius of approximately 200 miles from the repository and should consider the potential effects and implications of such investigations on the integrity of the barriers to waste transport."

(9) Criterion 'i' should be clarified by rewording and the deletion of the 200 mile figure which would incorporate an area so large it is unrealistic and not justified.

Proposed Criterion

"j. The actual or potential resource value of the repository site should be such that it will not unduly deprive this or future generations of necessary and valuable resources."

(10) Criterion 'j' should be redefined to include the protection of potential resources along with aesthetic values such as the preservation of wilderness and recreational areas.

Proposed Criterion

"k. The site should be located with due consideration given to minimization of the risks associated with the transportation of wastes to the site."

(11) Criterion 'k' should be redrafted to demonstrate the major concern for transportation risks. This should include clarification of responsibilities for both federal and state activities.

Proposed Criterion

"l. Testing and exploration techniques used in the selection and/or development of the repository site should have been such that their potential effects on the long-term effectiveness of the repository will be insignificant."

(12) Criterion 'l' should be rewritten to present a more positive approach to protecting the long term effectiveness of a repository.

(13) Areas of concern which culminated as recommendations for additional criterion are:

a. A repository should not be located near a current or potential military target.

b. A repository should not be located in such a way as to incur international involvement.

c. Consideration to population centers and population concentrations should be given in the site selection process.

d. Consideration should be given to the potential benefits/risks in colocation of a reprocessing plant with a repository.

e. Siting a repository should not alter present land forms and biological life. Consideration should be given to effects of seismic events on ground water flow and direction.

f. Consideration should be given to the state of the art evaluations necessary to ascertain geologic stability.

g. Consideration should be given to the short and long term cost of developing a repository to insure that development costs do not dictate completion activities when it has been determined that the technical confidence in the site has been compromised.

ACRONYMS

AEC	Atomic Energy Commission (Development functions transferred to ERDA January 19, 1975) (Regulatory functions transferred to NRC January 19, 1975)
ALARA	As Low As Reasonable Achievable
CP	Construction Permit
DEIS	Draft Environmental Impact Statement
DOE	Department of Energy
DOT	Department of Transportation
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ER	Environmental Report
ERDA	Energy Research and Development Administration (Functions transferred to DOE October 1, 1977)
GEIS	Generic Environmental Impact Statement
HLW	High Level Waste
HLWRSSC	High Level Waste Repository Site Suitability Criteria
LLL	Lawrence Livermore Laboratory
LLW	Low Level Waste
NEPA	National Environmental Policy Act
NFS	Nuclear Fuel Services, Inc.
NRC	Nuclear Regulatory Commission
NWTS	National Waste Terminal Storage Program - (DOE program)
OL	Operating License
ORNL	Oak Ridge National Laboratory
OWI	Office of Waste Isolation, Union Carbide Corp. (DOE contractor)
Pu	Plutonium
rem	Roentgen - equivalent-man. Dose of any radiation supposedly having a biological effect equivalent to one roentgen
RRY	Reference Reactor Year
RSSF	Retrievable Surface Storage Facility
SAR	Safety Analysis Report
SURFF	Surface Unreprocessed Fuel Facility
TRU	Transuranic -- elements above uranium in the Periodic Table. All are artifically produced and are radioactive
USGS	United States Geological Survey
WIPP	Waste Isolation Pilot Project
10 CFR	Code of Federal Regulations, Part 10 - Energy