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WM Project 1

Docket No.

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LPDR

July 9, 1984

Mr. Benard C. Rusche, Director  
Office of Civilian Radioactive Waste Management  
United States Department of Energy  
1000 Independence Avenue  
Washington, D.C. 20585

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GIARRANTA

Sent to Matthew w/o  
com ltr. from Austin, TX

Dear Mr. Rusche:

Governor Mark White has requested that I respond to a letter to him from the former Acting Director of the Office of Civilian Radioactive Waste Management. That letter dated May 7, 1984 solicited comment as required by Section 301(b) of the Nuclear Waste Policy Act on the April, 1984 draft Mission Plan for the Civilian Radioactive Waste Management Program. This letter and the attachments are the comments of the State of Texas on the document cited.

We view the Mission Plan as second in importance only to the Nuclear Waste Policy Act in establishing the program under which management of high-level radioactive waste will be carried out. We, therefore, take very seriously the review of this draft and the earlier December, 1983 version of the Mission Plan. The consideration of locations in Texas for possible disposal of high-level waste demands that we comprehensively review plans and activities of the Office of Civilian Radioactive Waste Management to identify and correct any deficiencies that could compromise the integrity of any site or facility that may ultimately be located in Texas. The attached comments were prepared from that perspective and we urge you to carefully consider and implement our suggestions.

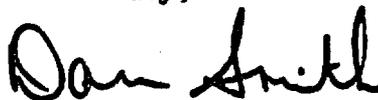
The comments are presented in three sections. The first section, General Comments, addresses concerns that apply to the document overall, or concerns that we consider of sufficient import to highlight in this first section. The next section, Specific Comments for Volume I, consists of a page-by-page presentation of particular points, some of which further support general comments. The third section of the response, Specific Comments for Volume II, was separated from the previous section simply to avoid confusion of the page references.

Mr. Benard C. Rusche  
July 9, 1984  
Page 2

As noted above, the Mission Plan is one of the critical documents of the national high-level waste management program. The Nuclear Waste Policy Act requires that after preparation of this document in cooperation with the affected States, Indian tribes, and relevant federal agencies and submission to Congress, the Department of Energy will conduct waste management activities in accordance with the program described in the Mission Plan. We are, therefore, vitally concerned that the Mission Plan prescribe a realistic course of action which (1) is fully consistent with the purposes and provisions of the Nuclear Waste Policy Act, (2) describes the required activities and procedures in sufficient detail and with sufficient clarity to avoid ambiguity and unending interpretation, and (3) is sensitive to the critical role of institutional interactions.

If any of the attached comments require clarification or amplification please let me know. We look forward to your response.

Yours truly,



for

Steve Frishman, Director  
Nuclear Waste Programs Office

Attachments

## GENERAL COMMENTS

### 1. Second Exploratory Shaft at Candidate Sites

The excavation of a second larger diameter shaft during the site characterization phase is an important new element in the Department effort to commence operation of a repository by January 31, 1998. The Department offers four reasons for the excavation of two shafts. First, they point out that for the safety of workers at the repository horizon an alternate exit route is necessary. But if mine safety is so critical that up to \$120 million is to be invested at each candidate site for a second shaft, the Department should plan to wait until the second shaft is completed before initiating in-situ testing. Nevertheless, twice in the Mission Plan (Volume I, p. 3-A-20, Volume II, p. 2-17) the statement is made that initially a shaft will be sunk so that in-situ tests can begin as soon as possible and then the second shaft will be sunk. The in-situ testing in salt is purported to take only eight months (Volume I, p. 3-A-32), and the second shaft which is planned to be large in diameter (finished inside diameter of 12 to 25 feet) will take several months longer than the first shaft. This difference of only a few months would occur if both shafts are initiated simultaneously. However, the time of initiation of the second shaft relative to initiation of the first shaft has not yet been determined (Volume II, p. 2-20) and, even worse, is suggested to be somewhat after the initiation of the first (see reference repository schedule, Volume I, p. 3-A-38). The safety argument for construction of a second exploratory shaft is not compelling.

A second argument put forward to support a second exploratory shaft is the demonstration of the ability to sink such large shafts. Such a large diameter shaft is being sunk at the Waste Isolation Pilot Project in New Mexico, and monitoring and review of that operation would seem to represent a more cost effective demonstration of large diameter shaft excavation than the investment of nearby half a billion dollars at three sites which may or may not even be used.

Third, the Department proposes that a second shaft would provide flexibility in the in-situ testing program. However, the additional testing suggested -- demonstration of mining techniques, adjustment and verification of design parameters -- are all functions that should be conducted in a Test and Evaluation Facility. The Congress has defined specific conditions under which such testing can occur and the Department should not attempt to circumvent the intent of Congress by conducting TEF activities under the guise of in-situ testing. Furthermore, as noted below, continuation of testing beyond the needs for site characterization is prohibited by the NHPA.

The fourth and final reason offered by the Department is irrefutably useful for repository construction, but is, nevertheless, contrary to NRC regulations and the NHPA. This fourth reason is the use of the shaft as a repository access shaft to accelerate repository construction. As shown above, the shaft serves no legitimate pre-licensing function and so its construction prior to granting a construction authorization would violate

the NRC prohibition on pre-license construction (10 CFR 60.3(b)). Also, the NWPA allows only such activities at a candidate site as are necessary to evaluate the suitability of the site for a repository (Section 113(b)(3)) so this action would also violate federal law.

The construction of a second repository shaft amounts to circumvention of the NWPA and 10 CFR 60. The Department must alter the Mission Plan to eliminate this proposal or risk denial of a license for violation of the NRC regulations and/or appropriate penalties for violation of the Nuclear Waste Policy Act.

## 2. Draft Environmental Assessments

The draft environmental assessments (Volume I, p. 3-A-27) to be prepared in support of the nomination and recommendation of sites for characterization are the primary documents related to this phase of the siting process that will be available for review by interested groups and individuals. When in August of 1983 the Department agreed to include review of a draft EA in the process for selecting sites for characterization, the draft EA's were envisioned as the Department's best effort at preparation of the environmental assessments mandated by the NWPA. Following a reasonable public review period the comments received would be considered and incorporated if valid and the final EA's would then be published. Recent comments by some Department officials have clearly suggested that the draft EA's will not represent the Department's best effort to produce a final EA and that they will not include all of the elements required by the NWPA for the final EA's. The states did not request this EA review to simply obtain an opportunity to examine the EA's in whatever crude form is available two months prior to finalization and excluding whatever chapters the Department may regard as too sensitive because of assumptions that may be drawn regarding the sites to be recommended. The Mission Plan should specifically include in the discussion of the draft EA review process an explicit description of the condition and content of the draft EA to be submitted for review. Specifically, the Mission Plan must now answer the question, "If the Department had not agreed to submit a draft EA for review, would the final EA be identical to what will now be the draft EA?"

## 3. End of Site Characterization

Section 113(b)(3) of the NWPA permits the performance at a candidate site of only those activities necessary to provide data for evaluation of the suitability of the site for repository recommendation and for compliance with NEPA. Site characterization should therefore cease with the completion of data collection to be used in the Site Selection Report (SSR) and the EIS to accompany the SSR. However, the Mission Plan clearly specifies the continuation of investigations at candidate sites beyond the completion of data collection to support the EIS and recommendation of a site for the first repository (see Volume I, Figure 3-A-5, p. 3-A-38 and Volume II, Figure 2-1, p. 2-4). Figure 2.1 in

Volume II (Integrated Logic Diagram for the First Repository) most clearly shows that continued investigation at the candidate sites is to provide data only for the construction application authorization and will not even be used as a supplement to the final EIS. The Department must unambiguously define in the Mission Plan the end of site characterization consistent with the provisions of the NWPA and must revise the Mission Plan reference repository schedule logic diagram for the first repository, and the accompanying text to bring them into compliance with the NWPA.

#### 4. Test and Evaluation Facility Plans

The current draft of the Mission Plan states that the need for a Test and Evaluation Facility (TEF) is uncertain at this time, but that such a facility, if constructed, would be colocated with the repository. A key question raised by the previous draft of the Mission Plan is the validity of the Department proposal to begin excavation and outfitting of subsurface TEF workings prior to granting a construction authorization by the NRC. The Mission Plan must explicitly state the Department's current interpretation of the NWPA on this issue and must also specify the Department's plans should they elect to construct a TEF.

The previously expressed Department position is entirely unwarranted. First, it is totally illogical to assert that the construction of the relatively insignificant surface facilities for a TEF should be prohibited but that the construction of the critically important underground facilities of a TEF should be allowed. Second, the NWPA floor debate among Congressmen Fuqua, Ottinger, and Swift on November 30, 1982 (Congressional Record, p. H8581) clarifies that the language of Section 305 of the NWPA is not intended to permit construction of any part of a TEF except surface facilities but rather is intended to specifically prohibit the construction even of surface facilities for a TEF prior to the issuance of a construction authorization by the NRC. Third, among the purposes of the licensing reviews by the NRC is the review of construction plans and methods to assess whether they will produce a repository that will satisfy the required performance criteria. Circumventing NRC review of any repository construction plans even if supposedly for a TEF could irreparably compromise the integrity of the repository site. The interpretation and intention of the Department must reject construction of subsurface TEF workings prior to issuance of a construction authorization and statements to this effect must be added to the Mission Plan.

#### 5. Site Selection Report and Accompanying EIS

The site selection report and the environmental impact statement to support the final step in repository site selection are the two key documentary links to this step for the states, tribes, and the public. The only portion of the Mission Plan that offers any insight into Department plans to provide opportunities for the affected parties to review those documents is the Integrated Repository Logic Diagram (Volume II, Figure 2-1, p. 2-5). This chart indicates that public, state, agency, and Indian tribe review of the DEIS will be permitted. The SSR, according to this diagram contains no direct input from States

or Indian Tribes. This omission is contrary to the provisions of the NWSA (Section 114(a)(1)(F)) and should be modified to reflect those provisions. The text of the Mission Plan should also be altered to include discussion of opportunities for input on the EIS and the SSR.

#### 6. Full Characterization of Three Sites

The assertion that the Department can proceed with a recommendation to the President even if one or two of the three sites characterized proves to be unsuitable for further consideration is not justified. The only argument for this position offered in the Mission Plan is simply that a delay of three to five years would ensue if characterization of additional sites were required. Technical conservatism and program credibility should not be sacrificed for schedule. Furthermore, the Nuclear Waste Policy Act (Section 114(a)) provides that the Department of Energy shall prepare a final environmental impact statement "...including an analysis of the consideration given by the Secretary to not less than 3 candidate sites for the first proposed repository ... with respect to which site characterization is completed ..." (emphasis added). Also, in Subsection 114(f) the Secretary is required to consider for proposes of the National Environmental Policy Act of 1969 "...3 candidate sites with respect to which (1) site characterization has been completed under Section 113; and (2) the Secretary has made a preliminary determination, that such sites are suitable for development as repositories consistent with the guidelines promogated under Section 112(a)." That same section of the Act further requires that the EIS prepared by the Department of Energy will, to the extent practicable, be adopted by the Commission. The Commission, in reviewing the rationale for 10 CFR 60, specified that the important point in requiring the evaluation of alternate sites and the presentation of that analysis to the Commission was to allow them to evaluate real alternatives in a timely manner in compliance with the requirements of NEPA (46 Federal Register 13971). Furthermore, the NRC cautions in their regulations that "...in light of the significance of the decision selecting a site for a repository, the Commission fully expects the DOE to submit a wider range of alternatives than the minimum (3) required here" (10 CFR 51.40). The rationale above leads inescapably to the conclusion that in the event one of the three sites undergoing characterization is found to be unsuitable, the Department must select a replacement site and complete characterization on that site prior to submitting an application for repository construction authorization to the Nuclear Regulatory Commission.

#### 7. References and Sources

Throughout both volumes of the Mission Plan assertions are made and data are presented without reference to the sources of the information. Genuinely comprehensive review of the Mission Plan requires that such assertions or data be accompanied by explicit references to allow

examination of the original sources and to provide access to additional relevant background information. For example, on page 3-A-32 of Volume I and on page 2-21 of Volume II the assertion is made that at-depth testing in salt will require only eight months -- a rather startling statement which will require additional background and explanation to convince those concerned about the use of a salt site. Another example of the absence of references is the bedded salt repository cost figures on page 10-12 of Volume II. Substantial analysis must have led to those figures and the source of that analysis must be cited. Countless other examples of missing references appear throughout the Mission Plan. The failure to copiously cite sources for the information in the Mission Plan -- a document which can legitimately be considered second in importance only to the Nuclear Waste Policy Act -- must be attributed either to carelessness or to an attempt to thwart analysis and validation of the contents of the Mission Plan.

#### 8. Level of Design

Throughout the Mission Plan specific designations are noted for the level of detail in engineering design that the Department considers appropriate at various stages -- in particular, the levels of detail to be achieved in documents such as the license application to be submitted to the NRC. For example, the Department expects Level I designs to suffice for the site selection report, the EIS, and the construction authorization application. The Level II design for the repository is to be finalized during NRC review of the construction authorization application. The NRC licensing provisions of 10 CFR 60 do not specify the level of detail required for various stages of NRC approval for repository development. This lack of specificity makes clarification of the required level of design detail all the more necessary for expedient conduct of the NRC review process. Another related issue mentioned elsewhere in these general comments is the potential confusion that may arise from use of the term construction authorization application in the NWPA and the Mission Plan, but not in the NRC regulations. The Department must establish in consultation with NRC the required design detail for the required NRC reviews and must document the required levels of detail in the Mission Plan.

#### 9. Construction Authorization Application

Throughout the Mission Plan and the NWPA the term construction authorization application is used, but the NRC procedural regulations for repository licensing do not mention such a document. The NRC does, in general, issue construction authorizations but they are based on preliminary review of license applications. This inconsistency appears to be only a matter of semantics at this time but confusion resulting from this inexact terminology could result in major deficiencies in the initial application to the NRC if the DOE views that document as distinct from a license application and, therefore omits elements that should be included in a license application.

#### 10. Deadline for Waste Acceptance

In attempting to develop a schedule that achieves the 1998 deadline specified in the NWPA for initiation of waste acceptance, the Department

has developed a program that relies among other things on schedule acceleration through allowing inadequate time for proper attention to institutional issues and the assumption of minimum objection to Department activities even though lack of attention to these institutional issues will likely lead to profound institutional problems. For example, the Department bases the two month revision period for draft EA's on the assumption that comments received on the draft will not be voluminous and complex. The gravity of the high-level waste issue as well as consistently overwhelming response for review of earlier key documents for the high-level waste program makes the Department appear grossly uninformed. A similar poor judgement is the assumption that an EIS to support recommendation of a site for a repository can be completed in 12 months. Routine EIS's often require substantially more time, and an EIS for a project as controversial as this can not be realistically expected to take only one year.

Attempts have also been made by the Department to compress the schedules for investigations and construction with schemes which do not comply with statutory and regulatory requirements. As pointed out in accompanying comments, the Department intends to continue testing at candidate sites after the collection of the data necessary to establish suitability of a site as a repository (i.e., to support the site selection report and the associated EIS). In addition, several attempts have been made to improperly overlap development and construction schedules including excavation of an extra shaft during site characterization, two step construction authorization, and two phase license approval. A similar earlier proposal which the Department has not disavowed in the current Mission Plan is the proposal to begin construction of subsurface TEF workings prior to issuance of an NRC construction authorization. These schemes are inconsistent with statutory and regulatory provisions and are also inconsistent with sound scientific, engineering, and management practice. The Congress has agreed that the Department should not sacrifice the quality and credibility of the high-level waste program in order to meet the deadlines mandated in the NWPA and a number of earlier milestones have, in fact, been significantly delayed. Furthermore, several interim and longer term storage options are authorized under the Act in case the repository operation deadline specified in the NWPA cannot be met. The slavish adherence to the goal of repository operation by 1998 is severely straining the credibility of the high-level waste program and must be tempered by appropriate attention to other significant factors including scientifically conservative investigation and development, sound management, and recognition of and attention to legitimate institutional issues.

## 11. Transportation Analyses

The treatment of transportation in Volume I states that the Department will undertake generic analyses of the safety and environmental impacts of various storage and disposal facility siting options. Interpretation of this statement is difficult because analyses of the "various ... siting options" suggests site-specific analyses and yet the analyses are referred to as generic. The transportation discussion in the "Information Needs" chapter of Volume II provides some clarification but the conclusion to be drawn is unacceptable. This discussion indicates that the Department does

not see a need for information on the national system of highways and railroads, but does see a need for a determination of whether access routes can be constructed from local highways and railroads to the site without causing unacceptable risks to public health and safety or unacceptable environmental impacts.

Further clarification of the Department's plans for transportation analysis was sought in the cross referenced (see Table 2-2, p. 2-54, Volume II) sections of Chapter 2, Volume II, "Plans for Obtaining the Information Needed to Site, Construct, and Operate a Repository". Interestingly, the cross referenced sections do not even mention transportation and, at best, can be interpreted to be only remotely related. Finally, continuing difficulty in obtaining specific information from the Department on the codes to be used for transportation analyses makes review of this issue extremely difficult.

Reasonable site evaluations must include analyses of all segments of the transportation network. A methodology for projecting the proportions of rail shipments and truck shipments is necessary. The appropriate routes (national and local) for sites will exhibit differences in condition, terrain, nearby population density, and other parameters and the resulting variations in cumulative population dose and transportation risk must be considered in assessing the suitability of the potential sites. In order to permit legitimate site comparisons, the Mission Plan must be revised to provide for route specific transportation analyses based on credible projections of the mix of rail and truck shipments.

## 12. Lack of Parity in Technical Information

Sections of the Mission Plan that, on the basis of potential host rock, review information available and to be obtained, frequently indicate far less information available and to be obtained for salt than for the other two host potential host rocks being considered for the first repository (see, for example, Volume II, pp. 2-9, 2-14, 2-21 through 2-22, 2-23 through 2-34, and 2-35 through 2-36). Legitimate comparison of the potential sites must be based on comparable quantity and quality information for all of the potential sites. The necessity for establishing information parity among the potential sites is especially critical in view of the Department's frequent assumptions of suitability--that is, if no information on a parameter or characteristic is available, it is assumed to be acceptable. The Mission Plan must contain an explicit commitment to and development of equitable information bases for the media under consideration.

### SPECIFIC COMMENTS ON OCRWM MISSION PLAN, VOLUME I

13. Page 1-1, paragraph 2 and Program Objective No. 1. Twice on this page statement is made that the Department of Energy is required "to license" repositories for high-level radioactive waste. This phrase should be modified to read "to obtain licenses" to avoid the possible misconception that the Department is authorized "to grant licenses".

14. Page 1-1, Objective No. 3. The Department's disposal contracts with Nuclear Utilities do not explicitly specify that acceptance of waste for disposal will commence on January 31, 1998. Therefore, it is inappropriate to cite those contracts as a mandate for commencement of disposal in 1998.
15. Page 1-2, last paragraph. The last sentence of this paragraph refers to the Department's intent to subject all revisions of the Mission Plan to review by various entities. To the list of reviewers should be added the Nuclear Regulatory Commission and other governmental agencies deemed appropriate by the Secretary. Furthermore, Section 301(b) of NWPA requires that objections raised in these comments which are not addressed by the Secretary in the revision of the Mission Plan be published in the Federal Register. Because this feature is unusual and extremely important, it should be explicitly stated in this introduction to the Mission Plan.
16. Page 2-3, paragraph 2. The amount of defense waste generated through the year 2020 is described as being "equivalent to approximately 10,000 MTU of commercial waste". Equivalence in this context could refer to any of a number of parameters including heat generation, Curie content, volume, and weight. The equivalence intended here must be explicitly stated.
17. Page 2-4, paragraph 2. This paragraph states that the Department will consider reprocessing proposals. The impact of reprocessing on cask needs and other transportation requirements should be reviewed either at this point in the report or in the later section 3.C, Transportation.
18. Page 2-4, paragraph 3. Rather than stating "the department believes that a second repository will be necessary" reference should be made to the later section of the Mission Plan (Volume 2, Chapter 9) which quantitatively establishes the need for a second repository and explicitly states the assumptions underlying the projections presented. A similar reference to the need for two repositories appears in the first paragraph on page 2-5. That statement will also be strengthened by a reference to the waste generation projections mentioned.
19. Page 2-6, paragraph 1. The second set of public hearings referred to here is required by the Nuclear Waste Policy Act and should be identified as such.
20. Page 2-6, paragraph 2. The opportunity provided by the Nuclear Regulatory Commission for comment on the guidelines was not a public hearing and should not be mentioned here. This language leaves the impression that it was a portion of the DOE consultation process on the guidelines.
21. Page 2-6, paragraph 1. Public review and comment and public hearings to be held on draft environmental assessments are not required by the NWPA. This recognition by the department of the value of public input to the repository development program is encouraging and should be promoted throughout the program.
22. Page 2-6, paragraph 2. Referring to "a site characterization plan" (emphasis added) may leave the impression that a single generic plan will be prepared for all sites recommended for site characterization. This sentence should refer to "plans" rather than a single "plan".

Mission Plan Comments

Page 9

23. Page 2-6, paragraph 5. We fully concur with the Department's recognition of the need for agreement by the Nuclear Regulatory Commission on the site characterization plan and would adamantly object to deletion or alteration of this statement.
24. Page 2-7, paragraph 5. The Department has complied with many of the consultation and cooperation requirements of the Act but the activities have exhibited and continue to exhibit deficiencies. Therefore, the absolute statement that the Department has met and will continue to meet the spirit and letter of the law is unjustified and this statement should be modified accordingly.
25. Page 2-8, item e. This statement should specify which entities within a state are authorized to request establishment of outreach programs.
26. Page 2-8, paragraph 3. Because of the possibility that the Department may elect to construct a test and evaluation facility and the earlier assertion by the Department that subsurface TEF construction may begin prior to issuance of a construction authorization by the Nuclear Regulatory Commission, this discussion must include an explicit statement of the Department position on subsurface TEF construction. As pointed out in our letter of February 8, 1984 commenting on the December draft of the Mission Plan we totally disagree with and adamantly oppose the earlier position expressed by the Department of Energy.
27. Page 2-8, paragraph 3. A critical element of the test and evaluation facility program, should it be pursued, is the NWPA requirement for public hearings. The importance of that element dictates that it be explicitly mentioned in any TEF strategy.
28. Page 2-9, paragraph 3. Typographical error, line 3: ...canisters (vice cask as discussed above) ...
29. Page 2-10, paragraphs 4 & 5. This brief discussion of the monitored retrievable storage alternative indicates that the Department will not submit three alternative MRS sites in the proposal to Congress on or before June 1, 1985. In spite of the arguments presented on page 3-B-2 of this Mission Plan, we believe that the Department's interpretation is incorrect and that the three alternative sites can and should be identified earlier than is planned by the Department. Additional comment on this point is provided addressing the material on page 3-B-2.
30. Page 2-12, paragraph 1. In order to be consistent with the first paragraph in this section on Transportation, this paragraph should specify that federal services will be considered only in cases when the private sector is unable or unwilling to provide the needed equipment or services at reasonable cost.
31. Page 3-A-3, paragraph 5. The discussion of the purposes for which engineered barriers will be used, must be altered to reflect the agreement reached between the NRC and DOE during the final discussion of the guidelines on June 22, 1984. Specifically, engineered barriers will only be examined in the context of containment problems which they may precipitate through interaction with natural barriers.

Mission Plan Comments  
Page 10

32. Page 3-A-3, paragraph 6. Because of the critical importance of review and comment as well as public hearings on the draft environmental assessments these activities must be explicitly stated in this paragraph.
33. Page 3-A-5, paragraph 2. The statement that the site characterization plan "will also be available for public review and comment" should, because of the statutory nature of this requirement, be altered to read "must according to NWA be available for public review and comment".
34. Page 3-A-5, paragraph 4. The Department has no intention of meeting the statutory deadlines for recommendation of the first and second repository. Statements in the Mission Plan which refer to those dates should therefore specifically mention the alternative dates which the department has established rather than perhaps leave the impression that the statutory deadlines will be met.
35. Page 3-A-6, paragraph 3. Because of the key role played in the repository siting program by Environmental Protection Agency standards, the Department should attempt to predict when these final standards will be available and should provide that information in the Mission Plan.
36. Page 3-A-7, first item a. The NRC retains the authority to select the required containment time within the range of 300 to 1,000 years. This statement should note that such authority remains with the NRC.
37. Page 3-A-7, first item b. The allowable release rate should be specified as "one part in 100,000 per year (of waste remaining after 1,000 years of decay) after the containment period".
38. Page 3-A-7, paragraph 2. This paragraph should state that actions will be taken "to make the NRC rule consistent with the EPA rule" rather than simply "to take the standard into account".
39. Page 3-A-7, item d. The imperious statement that after site characterization repository sites can ultimately be "accepted by the states and affected Indian tribes" is misleading, inappropriate, provocative, and condescending and must be changed to "considered" or "reviewed".
40. Page 3-A-12, item (a). Alternative media must be reexamined in a timely and useful manner. These alternatives should be considered for the first repositories as well. Consideration of alternative media should include an explicit statement that large geologic formations for which consideration was discontinued earlier in the program for political reasons should be re-examined.
41. Page 3-A-18, paragraph 3. The reference to the development of written consultation and cooperation agreements should specify that only one of the potential host states for the first repository has undertaken the negotiation of such an agreement and several issues such as liability and conflict resolution threaten to prevent completion of the agreement.

Mission Plan Comments

Page 11

42. Page 3-A-18, paragraph 4. This paragraph should include a commitment to comprehensive investigation of impact avoidance methodologies. Conspicuously absent is any mention of transportation subsidies to help control the distribution of in-migrants and modification of construction and development schedules to minimize fluctuations in the required workforce.
43. Page 3-A-19, paragraph 3. This paragraph includes a commitment to development of a Quality Assurance Program to be applied to data collection. If data collected during the earlier region and area characterization phases are to be utilized, this paragraph must also include a commitment to subject those earlier data to a comparable review for quality assurance.
44. Page 3-A-20, paragraph 3. The version of the guidelines cited in this paragraph has been superceded by the finalized version and this paragraph should be modified accordingly.
45. Page 3-A-20, paragraph 4. Although this paragraph mentions most of the hearings to be held in conjunction with the nomination of sites for characterization, the hearings on the draft environmental assessments are not mentioned and should be added.
46. Page 3-A-23, paragraph 4. The capacity of the first repository is limited to 70,000 metric tons of spent fuel until operation of the second repository commences. A legitimate well-defined process for establishing the ultimate capacity of repositories must be included in the Mission Plan.
47. Page 3-A-23, paragraph 4. The basis for the decision to decontaminate and dismantle surface facilities at the repository after the underground facility is decommissioned must be presented.
48. Page 3-A-23, paragraph 4. We fully agree with the intention to conduct post-closure monitoring and surveillance. The plans for such activities must also specify that the facility license will remain in effect throughout the period of responsibility for monitoring.
49. Page 3-A-26, paragraph 3. Because of the gravity of the high-level waste disposal program and the unfortunately high turnover rate among Department personnel dealing with this issue, informal dialogue and pledges should be treated with great care and this paragraph should caution that all significant understandings and agreements should be committed to writing.
50. Page 3-A-26, paragraph 4. A major category of socioeconomic work which has been overlooked here and must be added is that of impact avoidance.
51. Page 3-A-26, paragraph 6. This paragraph should list the parties who will be involved in the discussions mentioned. Substantially more detail should be included in both this section and Chapter 11 of Volume II describing the planning process for identifying and coping with socioeconomic impacts.

52. Page 3-A-27, paragraph 5. This paragraph should be altered to reflect the recent concurrence of the NRC in siting guidelines and the subsequent issuance of final guidelines by the Department.
53. Page 3-A-28, Table III-A-1. Under the phase entitled "Characterize Sites" the first and most critical element, Acquire Necessary Land And Leases, must be added. Under the phase "Select Site And Obtain Site Approval" the third item should refer to a site selection report rather than a site recommendation report. The sixth item in that phase must recognize that Congress may or may not override a disapproval by a state or tribe and an additional item should be added to describe the additional steps in the event a disapproval stands. Under the phase "NRC Licensing Review" the first item should note that DOE submits a construction authorization application to NRC rather than the DOE issues a construction authorization.
54. Pages 3-A-27 through 3-A-32, Phase 1. At no point in the discussion of alternative phase 1 cases is there any time allocated to consultation on the methodology for selecting sites to be recommended from the slate of five nominated. We have long contended that such a methodology should have been specified in detail in the siting guidelines. Because that was not done, we are even more adamant that this section of the Mission Plan should include an explicit plan for development for such a methodology in consultation with the affected states and tribes.
55. Page 3-A-31, paragraph 1. The case described here (Case 1-C) is identified later in this Chapter as the basis for the Department reference repository construction schedule. An underlying assumption of this schedule is that comments on the environmental assessments not be voluminous or complex. Based on the gravity of the nuclear waste disposal issue and on the volume and complexity of the comments submitted on earlier critical program documents, this assumption is totally unwarranted and is inconsistent with the earlier statement on page 2-7 of the Mission Plan stating that the reference repository schedule is "based on the shortest time duration set of assumptions that the Department can confidently predict at this time as being achievable" (emphasis added). Case 1-C should not be selected as the phase 1 case for the reference repository schedule.
56. Page 3-A-32, Case 2-A. In view of the gravity of this project and the explicit requirements of the Nuclear Regulatory Commission, the presentation of this case is absolutely ludicrous. It serves no purpose other than the presentation of a case of shorter duration than the one selected by the Department for use in describing phase 2 of the referenced repository schedule.
57. Page 3-A-32, Case 2-B. The assertion that only eight months of in-situ testing will be required to support a salt site recommendation is startling at best. Because this case has been selected to represent phase 2 of the reference repository schedule, references specifically citing studies, plans, or other documents substantiating this short in-situ testing period must be included in this paragraph.
58. Page 3-A-33, Case 2-D. The statement is made that the Secretary must make a preliminary finding of suitability for a repository at the time of nomination. In fact, the NWPA (Section 112(b)(1)(A)) merely specifies that the Secretary make a finding of suitability for characterization at this stage.

This same conclusion was reached during the deliberations concerning NRC concurrence on the guidelines and the discussion should be altered to reflect this interpretation.

59. Page 3-A-34, Case 3-A. This case was utilized as the basis for the reference repository schedule and includes the assumption that a draft environmental impact statement can be prepared within six months of completion of testing for site recommendation and, furthermore, that a final environmental impact statement can be completed six months after the draft. Past experience with the preparation of environmental impact statements, especially for an extremely complex undertaking such as high-level waste disposal, clearly indicates that such an ambitious schedule is not credible. Case 3-C which includes an additional nine months for preparation of the final environmental impact statement is more likely and should be utilized as the basis for phase 3 of the reference repository schedule.
60. Page 3-A-36, Case 5-A. This case was adopted as the basis for the reference repository schedule and includes a first step for construction and licensing of facilities sufficient to allow receipt of waste at a rate of 400 metric tons per year and subsequent construction and licensing of additional facilities to increase the rate of receipt to 3,000 metric tons per year. This piecemeal licensing process is unwarranted and should be rejected as a credible alternative for phase 5.
61. Page 3-A-37, paragraph 8. This paragraph simply states that the Department selected the alternative cases which would lead to limited operation of a repository by January 31, 1998. This statement is totally inconsistent with the statement in paragraph 4 of page 2-7 which states that the reference repository schedule was based on assumptions that the Department could confidently predict as being achievable. These statements are inconsistent and the one on page 3-A-37 should be deleted accompanied by revision of the assumptions underlying the reference repository schedule to reflect a time duration that the Department can confidently predict as being achievable.
62. Page 3-A-38, figure 3-A-5. The planned beginning and end for construction of the second exploratory shaft should be indicated to give an appreciation of the full sequence of major site characterization steps and their inter-relationship.
63. Page 3-A-39, paragraph 3. The third specific milestone described for site characterization includes projected dates for completion of the initial exploratory shafts. Several reasons for the different completion dates for different media could be surmised from the accompanying text. The specific reasons leading to these differences should be explicitly stated.
64. Page 3-A-40, paragraph 1. Clarification of the necessity to have three suitable sites at the end of site characterization would indeed make a delay less likely because of the importance of this issue. The Department should develop a strategy for this clarification and present that strategy in the Mission Plan.

65. Page 3-A-41, paragraph 3. Included in this paragraph is the blunt statement that alternative Case 5-A was selected for the reference repository schedule "because it provides a mechanism for initial acceptance of waste in January, 1998". Use of this rationale disregards all other critical factors such as scientific conservatism, institutional processes, and economic feasibility. The rationale is totally unacceptable and should be rejected in favor of a less simplistic rationale which considers other legitimate criteria.
66. Page 3-A-41, paragraph 4. The basis for the Department's "belief" that exploratory shafts can be used in construction and operation of the repository should be presented and substantiated.
67. Page 3-A-43, Alternative Schedule 4. This proposal while referred to as a "two step construction authorization" is identical to the earlier proposal referred to as a "limited work authorization" which was soundly rejected by many of the involved parties including the Nuclear Regulatory Commission. The discussion does, in fact, point out that this alternative would require modification of the NRC regulation 10 CFR 60, but does not mention the very relevant comments regarding the strong opposition by the Commissioners themselves to such an approach. This discussion should either include sufficient relevant information to permit informed decisions on the likelihood of making the necessary modifications to 10 CFR 60 or alternative schedule 4 should not be presented in the Mission Plan.
68. Page 3-A-43, paragraph 5. The Department would be remiss in its responsibility to develop a waste disposal system if they did not attempt to anticipate legal challenges to decisions and strategies. The stated reluctance to examine these possibilities is particularly puzzling in view of the recent statement by a DOE official who feels that all possible litigation will be exercised by the states to slow down the program. Furthermore, Section 301 of the NWPA specifically instructs the Department to include in the Mission Plan an evaluation of legal problems that may impede the implementation of the Act and "...the plans of the Secretary to resolve such problem ..." Section 3.6 of Volume II of the Mission Plan was prepared in response to Section 301 of the NWPA, but inadequately addresses that statutory mandate.
69. Page 3-B-2, paragraph 3. The argument presented in this paragraph is a legitimate reason for not selecting a final MRS site. It is, however, not legitimate in the case of identification of the three potential sites required by the Nuclear Waste Policy Act. This paragraph and other appropriate sections of the Mission Plan should be altered to include in the MRS report to Congress in June, 1985 three specific potential sites as required by the NWPA.
70. Page 3-C-1, paragraph 4. The Department commitment to addressing and resolving transportation concerns expressed by federal, state, local and tribal officials is commendable. However, the limited success states have had obtaining access to specific computer codes designed for use by the Department for transportation analysis compels us to insist that this section include an explicit commitment to providing detailed transportation information and access to analysis codes as requested by federal, state, local and tribal officials and the public.

71. Page 3-C-2, paragraph 1. The statement that radioactive waste will be transported in accordance with all applicable federal regulations is apparently based on recent federal court decisions finding that the DOE regulation HM-164 preempts New York City radioactive waste regulations. The courts did not, however, find in that case that DOT radioactive waste regulations will preempt all possible state and local regulations. This portion of the Mission Plan should therefore note that the transportation of commercial radioactive waste will be performed in accordance with all applicable federal, state and local regulations.
72. Page 3-C-3, paragraph 2. The Department commitment in this paragraph to comply with all advance notification regulations in effect should include a specific commitment to compliance with federal, state, and local regulations.
73. Page 3-C-4, paragraph 4. The Department commitment to deal directly with States through which commercial waste will be transported is vague and should be clarified. This paragraph should include an explicit commitment to deal with access states on an individual basis and to the extent requested by each state.
74. Page 4-7, figure 4-3. This organizational chart should be revised to reflect the structure in place at the time of publication of the final Mission Plan.
75. Page 4-9, paragraph 1. The Secretary's insistence on a high-level of excellence in the report from the Special Advisory Panel on Alternative Means of Financing and Managing Radioactive Waste Facilities is praiseworthy but is not a legitimate reason for the Department's inability to meet the statutory January 7, 1998 deadline. The panel was, in fact, not appointed until December, 1983 which precluded the possibility of presentation of any report at all on January 7, 1984, regardless of quality.

#### SPECIFIC COMMENTS ON OCRWM MISSION PLAN, VOLUME 2

76. Page 1-1, paragraph 3. The reason for the necessity to present information on operation and permanent closure of a repository in much less detail is not apparent. A more explicit statement justifying the lesser detail on these activities must be presented.
77. Page 1-3, paragraph 1. As has been stated elsewhere in these comments, the necessity for more than one exploratory shaft for purposes of collecting in-situ test data has not been demonstrated. The last sentence of this paragraph should be altered to read "For these tests, it will be necessary to construct an exploratory shaft".
78. Page 1-8, paragraph 4. This discussion specifies that the repository should be so situated that it will not be exposed by surface erosion during the next million years. This period seems reasonably long, however, the absence of rationale here or in previous literature for selecting this particular time makes it appear somewhat arbitrary. Substantiation for its selection must be presented.

79. Page 1-14, paragraph 4. In view of the substantial amounts of water that will be used in repository surface facilities for cooling and waste handling operations it is unclear why the assertion is made that releases that could reach people through water pathways are very unlikely. This section should either present substantiation of that statement or delete the statement.
80. Page 1-18, paragraph 3. Though it may be legitimate to separate transportation issues to separately deal with existing highways and railroads on the one hand and additional highways and railroads which must be built to the actual repository site on the other hand, it is not at all appropriate to ignore transportation on existing highways and railroads. Factors such as total transportation distance, condition of railroads and highways, and other parameters will have a direct bearing on the overall risk associated with specific sites and these issues must be addressed.
81. Page 2-5, figure 2-1. According to this diagram, testing for construction authorization applications will continue beyond the point at which the package of information for preparation of the environmental impact statement is completed. It seems illogical to prepare an environmental impact statement to support a construction authorization application which contains a different more comprehensive range of information than the EIS itself. The logic diagram should be modified to complete testing for the construction authorization applications and then to utilize the full range of information for development of the environmental impact statement.
82. Page 2-7, paragraph 2. At this time, the Paradox Basin confirmatory borehole mentioned in this paragraph is not finished and may not be completed in early FY '85 as stated. The sentence should be modified to reflect the status and current projections for that borehole.
83. Page 2-14, paragraphs 3 through 5. The discussion of hydrologic studies in salt presented in this section are minimal and significantly less thorough than the comparable discussions of hydrologic studies in basalt and tuff. The discussion of hydrologic studies in the vicinity of each of the salt formations under investigations should be presented in greater detail in this section.
84. Page 2-16, paragraph 2. Meteorology and air quality are both important factors in the site selection process. This paragraph indicates that equipment for monitoring those parameters might be installed at some sites when plans should definitely require such installations at all sites. This paragraph should be altered to state that such monitoring equipment will be installed at all sites.
85. Page 2-29, Salt Discussion. The tremendous importance of seal development and performance to the overall integrity of a repository in salt demands that this discussion of the program for obtaining the needed information and validation be far more extensive than that presented here.
86. Page 2-33, paragraph 4. The performance of waste containment materials in each of the media under consideration is a relevant factor in selection of the site to be recommended. The long-term engineering-scale containment materials testing in the presence of packing materials should be completed before repository recommendation rather than four years afterwards as these plans provide.

87. Page 2-42, paragraph 5. The validation of performance assessment codes for salt after recommendation of the site for the first repository takes place is unacceptable. An informed repository recommendation cannot be made on the basis of information of questionable validity.
88. Page 2-44, paragraph 1. It is entirely unreasonable to expect the NRC to undertake comprehensive rigorous evaluation of a construction authorization application when the information provided by the Department is insufficiently validated and subject to alteration. The codes for subsystem modeling must be fully validated prior to their utilization in preparing a construction authorization application.
89. Page 3-5, Acquiring Access to or Control of Land. Information must be presented in this section regarding specifics of the Department plan to acquire binding leases for the purposes of protection of sites being characterized.
90. Page 3-7, paragraph 1. The assertion that state laws and regulations affecting the geologic repository program "may not be permissible under the constitution" is unsubstantiated, unwarranted and prejudicial. Such regulations may also be permissible under the constitution. The last sentence of paragraph 1 should be deleted.
91. Page 3-8, paragraph 1. The planned program-wide information procedures would certainly promote communications between the Department and the affected parties. The past 18 months should have been sufficient time to establish such a program or at least to develop comprehensive plans for one. A detailed description of that information program must be included in the Mission Plan.
92. Page 4-1, The Test and Evaluation Facility. This section should describe the Department's interpretation and intentions regarding construction of subsurface TEF facilities prior to the granting of a construction authorization by the NRC.
93. Page 5-13, paragraphs 4 & 5. The presence of more prolific oil and gas fields in areas surrounding the Palo Duro Basin has absolutely no bearing on the potential for exploration for those resources in the Palo Duro Basin itself. The Department's rationale regarding potential for mineral resource production must be revised to consider absolute potential for resources as opposed to potential relative to nearby rich resources.
94. Page 6-1, Guidelines for Recommending Sites for Repositories. This discussion should be revised to reflect the latest developments in the preparation of siting guidelines.
95. Page 9-2, paragraph 2. In view of the burden assumed by each State in which a repository is constructed, a commitment by the Department to build additional repositories rather than to dispose of more than 70,000 metric tons in each of the first two repositories is necessary. The situs states cannot reasonably be expected to forever shoulder the burden of high-level waste disposal for the entire nation.

96. Page 9-2, Section 9.2.1. This section examines possible implications for a repository of a reprocessing fuel cycle, but overlooks two relevant issues. In a reprocessing cycle, the waste package will in all likelihood be significantly different in shape and size from a package for spent fuel. The length of the waste package in particular could have significant bearing on the required thickness of the host rock formation. The second significant point is the much shorter average half-life of the waste to be disposed if plutonium is removed through reprocessing. This difference in average half life would have a significant impact on obtainable repository performance and definition of the control zone surrounding a repository. Both of these factors should be addressed in the Mission Plan.
97. Page 9-3, table 9-1. The column headings on this table are misplaced and should be corrected.
98. Page 11-1, Socioeconomic Impacts. Although the NWPA explicitly requires only an identification of possible adverse impacts, it would seem prudent in this chapter of the Mission Plan to also present in substantial detail activities and plans for impact avoidance and mitigation. With the designation of sites for characterization certain impact mitigation provisions of the NWPA are triggered and detailed information on those issues will be critical to the affected States and localities.
99. Pages A-1 through A-44. Appendix A should present the siting guidelines as concurred in and finalized in June of 1984.