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TESTIMONY
of the
STATE OF UTAH
REGARDING THE DEPARTMENT OF ENERGY'S
IMPLEMENTATION OF THE NUCLEAR WASTE POLICY ACT OF 1982

RESPECTFULLY SUBMITTED

by

SCOTT MATHESON

to

HOUSE COMMITTEE ON
INTERIOR AND INSULAR AFFAIRS

October 8, 1984

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PDR WASTE
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SCOTT M. MATHESON
GOVERNOR

STATE OF UTAH
OFFICE OF THE GOVERNOR
SALT LAKE CITY

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October 6, 1984

Honorable Morris K. Udall
Chairman
Committee on Interior and Insular Affairs
U. S. House of Representatives
Washington, D.C. 20515

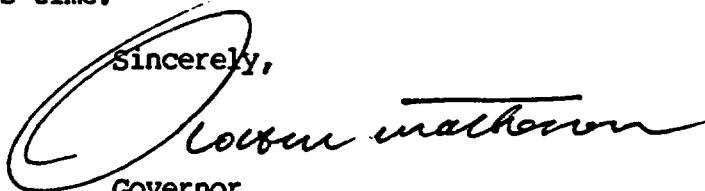
Dear Morris:

Enclosed is my written testimony for submission to the House Committee on Interior and Insular Affairs, outlining the State of Utah's concerns regarding the Department of Energy's implementation of the nuclear waste repository program established by Congress in the Nuclear Waste Policy Act of 1982. Attached as an addendum to my testimony is the technical testimony of a number of state officials and personnel who have been involved in the ongoing state review of the technical issues raised by the repository siting program. We have prepared this rather substantial written testimony in order to provide the Committee a relatively complete and specific account of the State's concerns. In providing the Committee this degree of detail, we hope to demonstrate that the State has reviewed the Department of Energy's site selection program thoroughly and dispassionately and that the State's concerns have a substantial basis in fact. The oral testimony which your Committee has graciously allowed myself and several other state officials to present on behalf of the State of Utah will, of course, substantially condense the written comments which are provided here.

The State of Utah sincerely appreciates your Committee's willingness to listen to the State's concerns regarding the progress of the nuclear waste repository program. We believe that consideration of the concerns raised by the State is especially timely at this stage of the site selection program. It is the State's conclusion that the manner in which the Department of Energy has implemented the site selection program has denied the State meaningful participation and input into site selection decisions. We have attempted to demonstrate the basis of this conclusion in our written testimony to the Committee. Reviewing the statutorily established framework for site selection decisions, it has now become apparent that the only opportunity which the State of Utah will have to review a fact-based Department of Energy analysis of the proposed Utah sites will occur only after the Department of Energy has collected data on those sites through site characterization and is preparing environmental impact statements in order to recommend a final repository

Honorable Morris K. Udall
October 6, 1984
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site. If the first meaningful state assessment of the Department of Energy's conclusions regarding the Utah sites occurs only immediately prior to the recommendation of the repository site, such review will almost certainly occur too late for the state's concerns to be effectively resolved. Therefore, revision of the site selection program to allow the state a meaningful role in that program is essential at this time.

Sincerely,

Governor

SMM:jh

encs.

GOVERNOR'S TESTIMONY ON POTENTIAL
HIGH-LEVEL NUCLEAR WASTE REPOSITORIES FOR THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

STATE CONCERNS REGARDING THE DEPARTMENT OF ENERGY'S
REPOSITORY SITE SELECTION PROCESS

INTRODUCTION

The State of Utah has been actively involved in reviewing the Department of Energy's ("DOE") efforts to identify a site for a high-level nuclear waste repository for over four years. Since passage of the Nuclear Waste Policy Act (the "Act") in 1982, the level of state activity has increased and has consumed substantial state energy and resources. In performing the "watch dog" role assigned to the state under the Act, we have experienced an ever growing frustration with DOE's site selection process and a growing conviction that DOE's implementation of the waste repository program does not conform to the provisions and intent of the Nuclear Waste Policy Act and will not result in the selection of a site that is licensable and demonstrably safe. An historical outline of the state's participation in the site selection process is attached as an addendum to this testimony. The history of the site selection process demonstrates that the state has, for many years, labored to make that process work and that DOE actions have frustrated meaningful state participation.

Our concerns regarding the repository site selection process will be outlined in five areas. First, we are convinced that the statutorily established deadlines for site selection activities and DOE time tables for meeting those deadlines will not allow sufficient collection and careful analysis of data to ensure a wise repository site selection. Second the site selection guidelines, now virtually finalized, do not provide an appropriate and effective framework for site selection decisions. Third, the Nuclear Regulatory Commission has mistakenly and unwisely limited its participation in the site selection process, when, in fact, the selection of a high-level nuclear waste repository, which lies on the frontier of technology, urgently demands the full participation of all parties. Fourth, the state's interaction with DOE over the past few years reveals that the process is not in accordance with the Act's provisions, will not result in sound site selection, and destroys rather than fosters public confidence in the site selection process. Fifth, by treating the states as obstacles to site selection rather than as partners in the site selection process, DOE has blocked or substantially inhibited state participation.

In conjunction with my statement state personnel have prepared testimony regarding technical issues involved in the waste repository site selection process. That technical testimony is attached as an addendum to these comments. The technical testimony, and the issues raised in these

comments, have not been brought before this Committee for the purpose of challenging isolated and discrete failures in DOE's site selection program. Rather, the intent of the technical testimony and the state's criticism is to demonstrate that the problems with the site selection program identify a pattern establishing that the entire site selection process is failing. The individual problems constitute only symptoms of that failure, and demonstrate that it is the process itself which must be repaired.

In view of the fundamental deficiencies in DOE's implementation of the objectives of the Nuclear Waste Policy Act, it is imperative that Congress act to restore integrity to the site selection program. Specifically, the State of Utah recommends that the statutory deadlines for site selection and construction of a repository be extended and that DOE be directed to begin construction of surface retrievable storage facilities to handle waste storage until a permanent deep-disposal storage facility can be carefully located and constructed. It is apparent now, that a carefully considered and factually supported site selection decision cannot be made within the statutory deadlines.

The state next urges that Congress clarify the Act by directing that a repository shall not be located in proximity to a national park unless no other site meets essential health and safety requirements. The state believes that this standard was intended by Congress in adopting the Act, that the Act requires adoption of such a

standard, but that DOE has failed to implement that congressional intent. Third, Congress should require DOE to collect all data reasonably available prior to the preparation of environmental assessments, and prior to the selection of sites for site characterization.

Fourth, Congress should require the Nuclear Regulatory Commission to review and concur in all DOE site selection guidelines and to review and concur in the environmental assessments prepared by DOE as part of the site selection process. Finally, DOE should be required to retrace certain site selection steps in order to implement appropriate site selection guidelines and to prepare thorough, data-based environmental assessments. The Nuclear Regulatory Commission should likewise be required to conduct full concurrence proceedings on all proposed DOE guidelines. These changes would not substantially alter the objectives and structure of the Nuclear Waste Policy Act, but would cure the most serious deficiencies in DOE's implementation of that Act.

It is both appropriate and necessary for Congress to consider rectifying the direction of DOE's site selection program at this time. Neither the states nor Congress can sit by any longer in the hope that the site selection program will become adequate as it progresses. It is now apparent that because DOE has deferred virtually all significant decisions with respect to the repository selection until site characterization, the state's sole

opportunity to review substantial site selection decisions will occur when DOE is preparing environmental impact statements in preparation for selection of a repository site. At that point, it will simply be too late for DOE to address state concerns. Our participation can be meaningful only if the site selection process is revised to require that adoption of site selection guidelines and preparation of environmental assessments reflects meaningful factual investigation by DOE and meaningful state review.

I. THE TIME-TABLES ESTABLISHED FOR THE SELECTION OF A HIGH-LEVEL NUCLEAR WASTE REPOSITORY ARE UNREALISTIC

The Act provides that approximately six months after its adoption, DOE shall issue general guidelines for the selection of repository sites. The Act further requires DOE to recommend three sites for site characterization by January 1, 1985, and by March 31, 1987, site characterization is to be concluded and the President shall recommend a site to Congress for location of the nuclear waste repository. The President, however, may extend the date for recommendation of a repository site by 12 months to March 31, 1988. The decision-making structure established by the Act requires that selection of a repository site be accomplished in a stepwise fashion; that a basis of factual investigation and public review be provided for the increasingly site-specific decisions outlined in the Act; and that site selection proceed in a methodical and orderly

manner. DOE's attempts to implement the Act's site selection deadlines have achieved none of these goals, and the deadlines themselves have not been met.

The first of these deadlines, issuance of site selection guidelines, has still not been fully met, because the proposed site selection guidelines have not been formally adopted two years after passage of the Act. It seems unlikely that the second deadline will be met, either. DOE working papers, prepared by DOE as draft sections of the environmental assessments (hereinafter referred to as "working papers") contain gaping holes and appear far from completion. The state has not been informed of any date for publication of those environmental assessments.

The actual delay that has occurred in the site selection program, however, is hidden. While DOE has gone through the formal steps required by the Act of preparing guidelines and environmental assessments, albeit behind the required deadlines, the actual progress of site selection work has been delayed even more. By deferring major portions of the data collection at potential repository sites and by deferring attention to difficult but critical site selection issues, DOE has been able to move the site selection process forward by ignoring its substance. By deferring data collection and the resolution of critical issues, such as the level of permissible impacts on national parks, DOE has virtually assured that future decisions made during site characterization will be hasty, poorly

supported, and subject only to very limited state review and consultation.

The collapse of DOE's schedule for site selection activities has yet a further consequence. States can no longer plan their review activities in accordance with any DOE decision schedule, because such a schedule does not exist. The decision-making process has become so jumbled that the states are unclear as to what decisions have been made by DOE and unclear even as to what stage of the process DOE is in. For example, because site selection guidelines have not been finally adopted by DOE, states have no idea whether DOE contemplates further comment on or revision of the guidelines and no idea when those guidelines may finally be adopted. Despite this, those unadopted guidelines are apparently serving as the basis for DOE's analysis of potential repository sites in its working papers. Thus, DOE busily prepares environmental assessments while the foundational guidelines remain uncompleted.

Carried one step further, DOE has given the states no guidance as to when the environmental assessments being prepared by DOE will be finalized, what public comment will be allowed on the published environmental assessments, and what revisions DOE will undertake in response to comments by states and the public. Similarly, DOE has not announced what criteria or even what decision process will be employed in deciding which sites will be the subject of environmental assessments and which three sites will be recommended for

site characterization. On a smaller scale, DOE has repeatedly promised that technical studies would be performed or data collected on technical issues and regularly those promises have not been kept because DOE has deferred or cancelled the studies.

Delays and confusion in DOE's site selection process are not isolated events. They are, by now, inherent in that process. The result has been to destroy any organization in DOE's own site selection process, and to cripple state efforts to prepare for and coordinate with the Department in reviewing Department decisions. For example, DOE has delayed its decision on the use of the repository for storage of defense wastes until 1985. Although allowed by the Act, DOE deferral of this decision has left the parameters of repository capacity and design undefined, and left the states unable to assess site suitability with respect to any factors that are dependent on repository capacity or design.

We recognize that this delay and disorganization may be partially attributable to breakdowns in DOE's management of this large-scale program. It appears, however, that a more fundamental problem is that DOE is grappling with statutorily imposed deadlines that are unrealistic and cannot reasonably be met. The construction of a long-term, high-level nuclear waste repository is a novel undertaking. To a great extent, the technology does not exist for such a repository and must be created. On the basis of currently

understood technical considerations, it is clear that substantial factual investigation must be conducted at potential repository sites if site selection decisions are to be well-grounded in fact. As an understanding of the technology involved in repository location grows, it is also clear that there will remain an ongoing need for data collection to resolve emerging technical issues. DOE's response to the problems of limited technical understanding of site selection issues and to data collection needs, however, has been the unwise choice of deferring resolution of all such issues to later stages of the process. The complex technical issues raised by site selection can be effectively met only if technical questions are vigorously explored and data is actively collected from the earliest stages of site selection.

The limitations in the technology associated with repository selection and construction are equally observable in DOE's site selection guidelines. Many of the site selection guidelines which have been proposed by DOE do no more than identify general aspirations or refer in general qualitative terms to issues which should be considered in site selection, because the technical knowledge necessary to sharply define guideline criteria often does not exist. The difficulty posed by guidelines that are formed as abstract and qualitative generalities, of course, is that such guidelines provide little guidance and little basis for states to review or challenge DOE judgments. The very

complexity of repository siting factors apparently requires that some flexibility be retained in the guidelines. DOE has gone far beyond any necessary flexibility in formulating the guidelines, however, by failing to define how the broad guideline criteria are to be applied in any meaningful fashion. Faced with these difficult problems, DOE has opted to keep the program moving, to attempt to meet deadlines, and to create the appearance of substantial progress in the site selection program. All this has been accomplished, however, at the expense of the integrity of the program.

The state's request that adequate time be spent now to secure adoption of appropriate guidelines for selection of a repository site and for preparation of thorough and competent environmental assessments means that the statutory deadlines for site selection must be pushed back. In the long run, however, some delay at this stage may well avoid more substantial delays at great expense later in the program. Inadequacies in DOE's site selection program create the possibility that the site selection process may fail to identify any suitable repository site, or that DOE may select a site that is unlicensable by the Nuclear Regulatory Commission. Either occurrence would necessarily result in a substantial delay in the entire repository program. Careful and methodical site selection decisions at the earliest stages of the process are simply a sensible means of avoiding the substantial delays that would result from a failure of that process.

It is clear, that in establishing statutory targets for completion of repository selection and construction, Congress intended that this important project not be unduly delayed. We do not believe that Congress intended that methodical, carefully considered, and carefully reviewed decision-making be sacrificed to achieve compliance with those deadlines. In view of DOE's inability to reach reliable, factually-based decisions within those time frames, and unwillingness to attempt to alter site selection deadlines, we call on Congress to reevaluate and to extend the deadlines for selection and construction of the nuclear waste repository. Only by so doing can Congress ensure that the best and safest site is selected, ensure that state concerns are properly addressed in that process, and ensure that the technical issues raised by repository selection and construction are identified, defined, and addressed through a thorough collection of data and careful analysis.

**II. SITE SELECTION GUIDELINES ISSUED BY THE
DEPARTMENT OF ENERGY DO NOT PROVIDE AN ADEQUATE BASIS FOR
DEPARTMENT OF ENERGY DECISION-MAKING OR FOR
STATE REVIEW OF DEPARTMENT DECISIONS**

A. The Guidelines Fail to Set Appropriate Standards for the Collection of Data.

Throughout the guideline adoption process, the State of Utah has challenged DOE's position that the Department may rely on existing data and reasonable assumptions regarding siting criteria in making decisions prior to site characterization. See e.g., General Guidelines for

Recommendation of Sites for Nuclear Waste Repositories, 11 (Nov. 18, 1983). In response to Nuclear Regulatory Commission ("NRC") criticism of the guidelines' data collection standards, DOE has modified the language of the guidelines. General Guidelines for Recommendations of Sites for Nuclear Waste Repository §960.3-1-4. These guideline revisions appear to address the form of NRC's and Utah's concern that DOE specify the data collection procedures it will follow. The revisions do not address, however, the substance of that concern. Thus, the revised data collection guideline includes an extensive list of the types of data required to support the nomination of a site as suitable for characterization. The guideline ignores the substance of the state's concern by again allowing DOE to substitute "assumptions" regarding data for the actual collection of such data.

From review of DOE's draft working papers for the proposed Utah sites, it is painfully apparent that little data is available with respect to Utah's potential repository sites. Indeed, it appears that significantly less geologic and geohydrologic data is available for the Utah sites than is available for other potential sites. This unevenness in data collection at the various sites will likely skew the site selection process because in comparing sites DOE assumes favorable geologic and hydrologic features at the Utah sites and compares this with the often less favorable actual data obtained at other sites.

Despite DOE's claim that geohydrology constitutes a fundamental siting factor, existing data on geohydrology is based on a single bore hole located miles from the proposed sites. Because an area's geohydrology may change over a space of a few meters, such data is virtually worthless. DOE has gathered no data that, under professional scientific standards, would support conclusions regarding geohydrology at the site. DOE's working papers nonetheless rely on this highly suspect geohydrologic data with little reservation.

This pattern is repeated with respect to DOE's failure to collect other types of data. For example, DOE has failed to collect even rudimentary socio-economic data, has relied on out of date and unreliable data, and has ignored the state's efforts to provide more current socio-economic data. Data with respect to air quality, night lighting effects on the parks, the impact of repository location on historical and archeological sites, and other environmental data have not been gathered by DOE even though such data could have been collected prior to site characterization. DOE has likewise not collected baseline data to determine pre-impact conditions. Nor has DOE outlined an appropriate methodology for the analysis of such data.

DOE's failure to gather and assess environmental, socio-economic, and archeological data substantially undermines the credibility of DOE's preparation of environmental assessments, inasmuch as it is clear that site characterization activities may adversely effect the

environment, society and archeological treasures surrounding the proposed Utah sites. Under the Act DOE is directed to collect such data prior to site characterization in order to assess the impacts of site characterization in its environmental assessments.

Because DOE has deferred collecting virtually all essential data, the state cannot critically assess DOE's working papers in terms of the Department's adherence to guideline standards. Under DOE's current program, virtually all essential data will not be collected at the proposed Utah sites until site characterization. Thus, the state will be unable seriously to review and comment on DOE's assumptions regarding the suitability of the Utah sites until the Department is in the midst of making its final site selection decision. Indeed, even when DOE has completed site characterization and is drafting environmental impact statements, it will be difficult for the state to assess whether DOE has selected a site in conformity with its guidelines, because the guidelines, for the most part, define factors to be considered by the Department only in general, qualitative terms.

The Act requires DOE to select a repository site in a step-wise manner. DOE began with nine sites for its initial site selection review. Following this initial screening, at least five sites are to be subjected to more intensive analysis through the preparation of environmental assessments. The Act's structure and terms dictate that the

analysis conducted in preparing environmental assessments be reasonably rigorous, inasmuch as the environmental assessments provide DOE a basis for selecting three sites for site characterization. Because site characterization involves a full-scale, intensive, intrusive, and expensive investigation of the suitability of three sites for the location of a repository, the initial winnowing of sites down to the three selected for site characterization requires reasonably careful deliberation.

We believe that the Nuclear Waste Policy Act was intended to require DOE to collect all data reasonably obtainable, and to adopt quality control standards to ensure the reliability of data, prior to preparation of environmental assessments. DOE site selection guidelines, however, set forth no standards defining the quantity of data required for the application of guideline criteria in the preparation of environmental assessments. Likewise, the site selection guidelines contain no standards to assure the quality of data relied on in site selection.

From its observation of the negligible data collection activities of DOE in Utah, and from its review of DOE's working papers, the state can only conclude that the site selection guidelines clearly, accurately, and unfortunately set forth DOE's policy of deferring, or ignoring altogether, essential data collection activities. By substituting assumptions regarding potential sites in place of the data which DOE has failed to collect, the Department has rendered

the preparation of environmental assessments on potential sites a hollow ritual that is not subject to effective review. The problem can be remedied only if DOE is required to adopt guidelines and data collection standards which establish objective checks on DOE judgments regarding the suitability of sites for the location of a waste repository. Data collection standards should specify both the quantity and types of data required as a basis for site selection decisions, as well as quality standards establishing the reliability of site selection data.

B. The Guideline Standard for Disqualification of Sites in Proximity to National Parks is Inadequate and Inconsistent with the Nuclear Waste Policy Act.

The Nuclear Waste Policy Act directs DOE to afford particular attention to a number of factors as potential disqualifiers for proposed repository sites. Among the statutorily specified factors is proximity of a proposed site to a national park. Because Utah's Paradox Basin sites lie virtually on the edge of Canyonlands National Park, the State of Utah has been deeply concerned with DOE's treatment of this factor.

Apparently in response to the statutory directive in the Nuclear Waste Policy Act, the Department of Energy has adopted a guideline providing that a potential repository site will be disqualified only if the repository "would conflict irreconcilably with the previously designated resource preservation use of a component of the national park system." At best, this guideline standard affords only

meager consideration to the proximity of a national park to a repository site. Indeed, the guideline's reference to only "resource preservation" uses of national parks leaves it unclear whether DOE intends to consider conflicts of a repository site with the recreational values of national parks.

Even accepting this meager guideline standard on its face, however, it is difficult to discern how the guideline provides any usable guidance in weighing national park values against a proposed repository site. The term irreconcilable differences is inherently subjective and allows for no meaningful review by the state of DOE's judgment as to the "irreconcilability" of conflicts.

The problem with the park guideline, however, lies not so much in the ambiguities of the rule, as it does in the grossly inadequate attention devoted to national park values. DOE's site selection guidelines acknowledge that a repository located within the boundaries of the national park would be unacceptable. The location of a repository virtually on the edge of Canyonlands National Park would pose equal conflicts with national park value.

We believe the authors of the Nuclear Waste Policy Act intended far more substantial protection of national park values when they specified that proximity to a national park should be treated as a potential disqualifying factor. This conclusion is reinforced by the legislative history of the Act and an interchange between Representative John

Seiberling and Morris Udall. When questioned about the statute's reference to park proximity as a disqualifying factor, the author of that provision indicated that a site adjacent to an area such as a national park "should be designated as a site only as a last resort if none of the other alternative sites satisfy the essential (health and safety) criteria for a repository," Congressional Record, page 8778, December 2, 1982 (U.S. House of Representatives).

The State of Utah believes it is essential that DOE immediately correct its park proximity guideline, and bring that guideline into conformity with the intent of the Nuclear Waste Policy Act. This correction must be made without waiting for site characterization. It has become increasingly apparent that the activities associated with site characterization will have substantial, and possibly irreparable, impact on the national parks adjacent to the proposed Utah sites. The suitability of the Paradox Basin sites for location of a repository, at least in terms of their compatibility with national park values, is a question that can be resolved without site characterization. In view of the substantial impacts of site characterization, DOE should undertake a substantial and thoughtful assessment of the suitability of those sites in terms of their compatibility with park values before subjecting those sites to the impacts of site characterization. If DOE conducted a careful analysis of the impact of repository siting on the parks, DOE would disqualify the Utah sites without the

necessity of and damage resulting from site characterization.

III. THE NUCLEAR REGULATORY COMMISSION HAS FAILED TO PARTICIPATE FULLY IN SITE SELECTION ACTIVITIES AS REQUIRED BY THE ACT

Under the Nuclear Waste Policy Act, NRC is assigned a substantial role in site selection activities. Not only must the Commission ultimately determine whether licenses will be issued for the construction and operation of a repository, under the Act, the Commission is directed to review and concur in DOE's site selection guidelines. In May of this year, following public hearing, the Commission issued its concurrence in the proposed site selection guidelines.

During NRC's review of the proposed guidelines, the State of Utah and others urged the Commission to fully and carefully review all of the proposed guidelines. Instead, NRC limited the scope of its review to the guidelines' compliance with the technical requirements of 10 CFR 60 (NRC repository licensing regulations) and with the guidelines' effect on the Commission's ability to comply with NEPA. Thus, only a fraction of the guidelines were subjected to careful NRC scrutiny. This self-imposed limitation by NRC in its concurrence activities ignored the language of the Nuclear Waste Policy Act, which requires NRC to concur in the proposed guidelines, not to simply concur in some portion of those guidelines.

As a matter of common sense, thorough NRC review of the guidelines is highly desirable. NRC has substantial experience and expertise in virtually all areas relating to atomic energy. Because the location of a nuclear waste repository poses many novel and unexplored technical issues, full utilization of NRC's expertise in the site selection process is essential. Moreover, only by becoming fully involved in site selection activities at the early stage of guideline promulgation, can NRC ensure its ability to carry out its ultimate repository licensing responsibilities.

NRC's guideline concurrence process was also procedurally defective. Upon receiving the proposed guidelines from DOE, the Commission allowed states and interested parties to comment on the guidelines and held public hearings on those guidelines. In response to vigorous comments from the states and other interested parties, NRC issued a preliminary concurrence in the guidelines, subject to the requirement that DOE revise certain guidelines to satisfy a number of concerns raised by the states and NRC.

While NRC allowed the states to comment on the Commission's preliminary concurrence, NRC directed that commentators "should assume the Department of Energy adequately addresses the Commission's conditions" in commenting on the preliminary concurrence. Thereafter, states were allowed to observe certain negotiating sessions between DOE and NRC regarding revisions in the guidelines,

but were not allowed to participate in those negotiations. In effect, in its initial review of the site selection guidelines, NRC recognized the validity of many objections to the guidelines raised by the states. NRC refused, however, to allow us to participate in the revision of those guidelines to address those concerns.

Indeed, after NRC and DOE adopted certain revisions to the guidelines, NRC refused to hold further hearings to allow the states to comment on whether those revisions adequately addressed their concerns. This limitation on the State's involvement in NRC proceedings is not in keeping with the requirement of the Nuclear Waste Policy Act that guidelines be adopted in consultation with the states.

**IV. THE DEPARTMENT OF ENERGY SITE SELECTION
PROCESS DOES NOT HONOR THE REQUIREMENTS OF THE ACT
AND WILL NOT PRODUCE THE SELECTION OF A SITE THAT IS BASED
ON REASONED JUDGMENT AND ADEQUATE EVIDENCE**

The comments of state agencies and personnel engaged in a review of DOE's draft environmental assessments (attached as addended technical testimony to these comments) reveal a pattern of common failures in DOE's site selection process across the range of technical areas and issues. In virtually every technical area, state personnel have reported that communications with DOE and a review of DOE's working papers indicate that DOE has failed to collect, and has no intention of collecting, easily obtainable and essential data to incorporate into the environmental

assessments; that DOE has instead relied on dated and faulty data; that the Department has relied on professionally improper and untenable inferences from slender existing data; and that DOE has made implausible assumptions where data does not exist. Moreover, DOE has altogether failed even to address a number of technical issues, although the data required for such an analysis would not require site characterization. The effect of such a process is, of course, to destroy public confidence in the site selection process, and to render effective state consultation and review of that process impossible.

A. DOE has Consistently Failed to Collect Essential Data.

DOE has justified its refusal to collect data prior to preparation of its environmental assessments on the ground that such data will be collected at the time of site characterization. That explanation would make sense with respect to the collection of data requiring the drilling of bore holes, except for the fact that existing geologic and geohydrologic data on the proposed Utah sites is grossly inadequate to support even initial site selection decisions. In view of the inadequacy of the existing data on geohydrology, it is apparent that additional bore hole data is required for the preparation of competent environmental assessments. DOE's recognition of the need for additional bore hole data is demonstrated by DOE proposals, at various times during the past two years, to drill additional bore

holes. The additional bore holes were never drilled, however, because DOE abandoned the proposals.

No excuse explains DOE's failure to collect other data clearly not requiring site characterization. The technical testimony attached as an addendum to these comments describes in detail the massive gaps to be found in DOE's data collection, and thus in DOE's working papers. Moreover, where DOE has based its working paper conclusions on some body of data, often the quality of that data is so poor or its applicability to the potential sites so limited as to preclude responsible scientific interpretation. These comments will refer to those gaps in summary fashion to outline the pattern of shoddy factual investigation that has become DOE's practice.

1. Environmental Issues Data: Utah's Mined Land Reclamation Act (Title 40-8, Utah Code Ann. 1953) requires that a variety of data be collected by mining operators prior to approval of mining operations. Although site characterization activities, such as the drilling of test shafts, make it imperative that these studies be done prior to site characterization, DOE in this, as in other cases, has disregarded state law and procedures. The required data includes vegetation studies, wildlife studies and studies of the potential impact on wildlife populations, surveys of endangered species in the area, analysis of mitigation techniques for environmental impacts, and a complete plan of reclamation. From our limited analysis of these

environmental issues, it is apparent that potentially serious problems exist with respect to each of these issues. Yet, DOE has not begun to collect data to address these concerns. A similar analysis of environmental impacts on the transportation corridor to the site will also be required, but the state cannot even begin to assess the potential environmental problems involving the transportation corridor because DOE has not yet identified a transportation corridor to the site. We cannot review DOE plans because those plans do not exist.

2. Water Quality Data: Construction of a repository in the salt formation in the Paradox Basin will require removal of enormous quantities of salt. Although DOE's working papers correctly identify the most critical issue with respect to the Colorado River as its salinity, the working papers totally fail to address the impact of repository construction on Colorado River salinity. The disposal of salt removed during repository construction is of concern to each of the seven basin states that have worked together since 1960 in an expensive program to control Colorado River salinity and is also a concern of the Republic of Mexico. Uncertainties surrounding the question of the disposal of salt are intensified by DOE's inadequate analysis of the flooding potential in the region. This flooding potential creates a serious concern that salt removed from the repository cannot be disposed of and stored in the area of the site. In analyzing the flooding

potential, DOE has relied upon one storm in Blanding, Utah. The state believes that an adequate data base can be established only if at least 15 to 25 years of data are evaluated. DOE collection of data on water quality is also absent. Environmental studies should include at least a year of intensive stream and ground water monitoring prior to significant site disturbance. To date, no water quality data for Indian Creek is included in DOE's working papers which DOE provided to the state. Because DOE has deferred data collection, it appears likely that collection of a year of water quality data will further delay future site characterization activities.

3. Air Quality Data: Over two years ago a DOE official urged that a year's worth of air quality data should be gathered prior to site characterization at the Utah sites. For several years, the state has also requested that such data be collected. Instead of collecting air quality data, DOE has chosen to rely on existing data from nearby areas. The state, however, has not even been told what existing air quality data DOE will utilize.

4. Visual Resources: Despite the requests of the state and the National Park Service, DOE has not collected data on night illumination from construction activities at the repository site. Only preliminary and cursory study has been made of the visibility of the repository and associated transportation routes from points within and adjacent to the park.

B. DOE Has Relied on Dated and Faulty Data.

DOE has identified data on geohydrology as among the most crucial evidence to be analyzed in determining repository site selection. Yet, bore hole data for the Utah sites is woefully inadequate. DOE has drilled only a single bore hole in the vicinity of the sites. That bore hole is 3 1/2 miles northeast of the Davis Canyon site and 7 miles northeast of the Lavender Canyon site. Existing geologic data indicates that a number of dissolution features and faults exist within a seven mile radius of this one bore hole, strongly suggesting that data derived from that bore hole cannot be assumed to reflect the geohydrology at the repository sites. It is clear that DOE will be required to drill additional bore holes, if not now then at the time of site characterization. The existing data is so inadequate that DOE cannot say with certainty whether bore holes will be required within the park itself. Recognizing the potential that boreholes may be required in the park, however, DOE has identified potential drill sites in the park. The potential that site characterization may be required to be conducted within the boundaries of the park only emphasizes the necessity for immediate clarification of the park proximity site selection guideline.

DOE data with respect to socio-economic concerns is also inadequate. Rather than collecting current data, or employing data supplied by the State of Utah, DOE has chosen to rely on outdated population data and models that do not

even use an actual population baseline figure. DOE investigation of historic and archeological sites has been equally cursory. After a hurried review of archeological sites DOE has identified only four archeological sites, and none of major significance. The state's cultural resource studies indicate, by contrast, that as many as 1,000 archeological sites may be in the repository impact area and that over half of those sites may be of National Register quality.

C. DOE has Relied on Untenable Inferences From Data.

Because DOE has failed to collect the data necessary to prepare thorough and well-founded environmental assessments, the Department has been forced to rely on scientifically unsupportable inferences from the little data that exists, or to rely on assumptions. The most striking examples, of course, are DOE's assumptions regarding the geohydrology of the region. The existing data on geohydrology establishes at least two points with substantial clarity. First, the data demonstrates that very little is known regarding the geohydrology in the area of the proposed Utah sites. Second, existing data demonstrates that substantial faulting and dissolution features exist within approximately ten miles of the proposed sites. Because the geohydrology of an area may vary within the space of a few meters, DOE's assumption that no dissolution features or faulting exist at or near the proposed sites on the basis of a single bore hole located miles away from those sites is untenable.

An irresponsible reliance on assumptions is evident in virtually every area of DOE's site analysis. DOE assumes that environmental impacts, socio-economic impacts, and impacts on archeological sites resulting from site characterization activities will be minimal and easily mitigatable. Therefore, DOE has largely eliminated investigation and analysis of these factors from its working papers. Thus, by making gross assumptions that impacts will be minimal or mitigatable as to large numbers of siting factors, DOE defines the scope of its analysis in a biased manner and allows potentially serious issues to simply "fall through the cracks" of its plan of site investigation.

For example, DOE assumes, without justification, that transportation corridors to the site can be adjusted to avoid environmental impacts. Thus, DOE has not bothered to identify the transportation corridor or to analyze its impacts. DOE has also ignored long-term, postclosure impacts of the repository on the unwarranted, and apparently uninvestigated, assumption that such impacts will be minimal.

On a broader scale, DOE has weighted its guidelines by assigning decisive weight to geologic and hydrologic factors, and by virtually discounting the significance of other factors. As a result, DOE has afforded low priority factors little attention or research. This guideline weighting appears to be based on the unwarranted assumption that guideline factors other than geology and hydrology can

always be mitigated to acceptable levels. Finally, DOE has not only consistently failed to gather easily accessible data, DOE has further assumed, with respect to guideline disqualifying conditions, that an absence of unfavorable data constitutes a positive indication of site suitability.

By relying on assumptions, DOE defeats one of the primary purposes of site investigation--discovery of the unexpected. Invariably when DOE substitutes assumptions for investigation of the actual nature of proposed repository sites, DOE assumes that the uncollected data would be favorable or that any problems will be mitigatable. Such an approach cannot help but lull DOE into a dangerous complacency. A project as novel, mammoth and potentially dangerous as the construction of a nuclear waste repository demands the utmost rigor in the collection and analysis of data. DOE should be vigorously seeking to discover all potential or hidden obstacles to repository siting rather than casually assuming that such obstacles do not exist or can be easily overcome.

V. THE PROCESS ADOPTED BY DOE IN SELECTING A REPOSITORY SITE HAS BLOCKED OR SUBSTANTIALLY INHIBITED EFFECTIVE STATE REVIEW

The Nuclear Waste Policy Act assigned states containing potential repository sites substantial "watch dog" roles in the site selection process. By requiring states to review and comment on the Department's site selection activities and to consult with the Department prior to site selection

activities, the Act ensures that the Department will be aware of and able to respond to state concerns. Such review also serves as a healthy check on DOE's internal decision-making. Finally, by allowing the states an "open window" from which to view the decision-making process, the Act contemplates that the states and the general public will develop confidence that a safe and appropriate repository site will be selected.

The intent of the Act is laudible. Unfortunately, DOE has failed to carry out its review activities in a manner which will achieve any of these goals. Three problems in DOE's procedures are immediately apparent. First, DOE has failed or refused to coordinate with the state in the collection of data. Second, DOE has failed or refused to provide the state essential data and other information. Third, DOE has failed to respond to state concerns, and has, instead, from inception of the program treated the states as obstacles to be overcome.

The effect of DOE's attitude toward the states, at least with respect to the State of Utah, has been dramatic. The state has always maintained that the potential Utah repository sites were poor choices because of their proximity to the national parks. Initially, we believed that after careful review by DOE, the sites would be disqualified as potential repository sites. Despite the state's attitude toward the suitability of the Utah sites, for a number of years we supported and cooperated with the

site selection process in the belief that the program which Congress had adopted in the Nuclear Waste Policy Act should be given a chance to work. This effort to cooperate and support the process of site selection has resulted only in a thorough disappointment of our expectations. After repeatedly experiencing DOE's failure to carry out site selection decisions in a responsible manner, the state has concluded that the site selection process, as implemented by DOE, is not in conformity with the Nuclear Waste Policy Act and is unresponsive to state concerns. Public confidence in that process has likewise been shattered.

A. DOE's Failure or Refusal to Coordinate With the State in Data Collection

The state has repeatedly urged DOE to collect all reasonably obtainable data prior to site characterization to ensure that the environmental assessments prepared by DOE would be soundly based in fact. At the same time, however, the state has been concerned that data collection efforts conducted in the ecologically sensitive area in proximity to the national parks be carried out with as little destruction of the environment as is feasible. Thus, the state has also repeatedly urged DOE to present a complete plan of proposed data collection activities. On the basis of such a plan, the state and DOE could work out required state permitting for the proposed data collection and could also arrive at necessary mitigation measures to protect the environment. DOE has refused to present or implement such a plan, and,

instead, has conducted little data collection and has presented those few data collection requests to the state in a piece-meal fashion. This piece-meal conduct of data collection activities has created impossible problems for state government. Presented with only sporadic and piece-meal requests from DOE, the state is left with no idea of the scope of proposed DOE activities and no means of planning mitigation measures.

A single example will illustrate the problem. DOE's inventory of archeological sites in proximity to the repository sites is grossly inadequate. DOE's working papers for the potential Utah sites identify only four archeological sites. The state's Division of History predicts, on the basis of its sampling, that as many as one thousand archeological sites may lie within the project's impact area, and over half of those sites may qualify for National Register listing. The Division of History has, therefore, urged DOE to undertake adequate and appropriate inventorying of archeological sites. At the same time, the Division of History has requested that DOE enter into a memorandum of understanding to minimize the impact of DOE activities on archeological and historical sites. To date, DOE has refused to enter into or negotiate toward such an agreement, maintaining that its pre-site characterization activities entail no actual disturbance of archeological sites. Yet, as a result of DOE pre-site characterization

activities, at least two archeological sites have been damaged or destroyed, in violation of federal law.

With respect to socio-economic concerns, DOE has failed to gather rudimentary data on socio-economic impacts in the rural Utah site area. DOE appears to maintain, moreover, that site characterization activities will have no substantial socio-economic impacts on the area and for that reason no particular plans need to be made for site characterization. The state believes that the influx of several hundred workers to the area for site characterization activities will have substantial socio-economic impacts and that the area must prepare to meet those impacts. In this effort, however, the state has received virtually no assistance from DOE. To some extent, the Act itself contributes to this problem by precluding "up-front" mitigation payments to impacted communities.

B. DOE has Failed or Refused to Provide the State Site Selection Data and Other Information

The state has repeatedly requested information on particular technical issues from DOE so that the state could carry out its review activities. Too often, DOE does not provide this information. Perhaps the example of most intense concern to the state is the park impact study contracted by DOE through EBASCO services. This study, performed after we had urged DOE for several years to conduct a park impacts study, will apparently not be released for public review, despite the state's repeated

requests to review the document. Indeed, the state has concluded that DOE's refusal to release this park impact study is simply part of DOE's process of ignoring the entire park issue.

DOE's failure to provide information in its possession on park impacts is not an isolated occurrence. DOE's unwillingness to openly share technical information in a timely manner has, unfortunately, become commonplace. DOE's transportation business plan has been withheld from the state and from public distribution and comment even though that plan is in its fourth draft. It has been suggested to the state that the plan may be released for public comment only in a condensed and incomplete version. Copies of draft contractor reports have been made available for state examination at DOE-NRC data orientation meetings, but DOE has refused to allow copies of those reports to be distributed to the state. DOE has failed to provide the state with its most recent flood study of the Utah sites, a study scheduled for completion in May of this year. Again, DOE has failed, despite state requests, to outline in detail and with consistency the components of DOE's drilling program. In view of the emphasis placed by DOE on geohydrologic data, DOE's failure to clarify its plans for securing such data seriously inhibits the state's ability to participate in site selection activities.

As the state attempts to prepare for subsequent site selection decisions, the future prospect for DOE cooperation

appears equally bleak. Despite state requests, DOE has not identified the criteria it will employ in selecting sites for site characterization or explained the process by which that decision will be made. Likewise, DOE has not identified what role states will be allowed to play in reviewing and participating in site characterization activities. Nor has DOE outlined what process will be followed to allow state and public participation in the drafting and adoption of environmental impact statements following site characterization. The Act provides relatively little specific direction as to the resolution of these questions. In view of DOE's past failures to provide data and information to the state, even when clearly obligated to do so by the Act, the state can have little confidence that DOE will prove more cooperative in the future. Therefore, Congress should direct DOE to outline its process for selecting sites for site characterization and should further direct DOE to structure its site characterization activities in a manner that allows the state full and meaningful participation in those activities.

C. DOE's Failure to Respond to State Concerns

The criticisms of DOE's site selection process raised throughout these comments describe a process in which the states cannot have much confidence. A defensive attitude on the part of DOE and a resistance to even the most innocuous state requests permeates the Department's entire approach to the process. For example, DOE slipped its deadline for

submitting a mission plan to Congress, denying the states any opportunity for early review of this crucial document. Without justification, DOE then allowed federal agencies a longer time to review the mission plan than was granted the states. Two additional examples will suffice to demonstrate DOE's policy of frustrating and stifling state participation in the site selection process.

In the latter half of 1983, we submitted two formal requests for rule-making to DOE. These requests asked DOE to implement guidelines setting forth more adequate data collection standards for site selection activities, and to provide an appropriate criteria for disqualification of a site in proximity to a national park. These rule-making requests were ignored by DOE for some period of time. Finally, after repeated state inquiries regarding the status of the rule-making requests, DOE indicated that it would respond to the state's requests on adoption of the final site selection guidelines.

The site selection guidelines have not yet been finally adopted, and now, nearly a year later, Utah has still received no final response to its rule-making requests. The requests have neither been denied, with an appropriate rationale for the denial, nor were the requests incorporated into DOE's guideline adoption process. Such responses to state efforts to participate in the site selection process quickly give rise to a conclusion that DOE's conduct of site

selection activities is a formalistic process devoid of substantive content.

DOE's reluctance to allow the states meaningful participation in the site selection process is likewise evident in DOE's management of state impact grants. Careful and thoughtful consideration of site selection decisions requires the states to undertake a massive and technically sophisticated project. To review and respond to site selection decisions, the state has had to strain its financial and personnel resources. The Nuclear Waste Policy Act, of course, provides for financial grants to states to mitigate the drain on state resources caused by the state's review activities. Control of funding authority, however, rests in the hands of DOE. The state believes that DOE has used its control over these financial pursestrings as a means of stifling state participation.

In May 1984, the State of Utah, aware that we did not possess the expertise required to review several more technical aspects of the environmental assessments, requested supplemental grants from DOE. DOE denied approximately \$350,000 of the funds requested by the state, including funds for a review of DOE's performance assessment and for transportation and socio-economics studies. No rationale was given by DOE for the denial of funding. The effect of the denial is to preclude the state from effectively reviewing critical portions of the environmental assessments.

In view of the fact that DOE has defined its role in the site selection process as that of an antagonist to the states, Congress should direct DOE to fully and fairly fund impact grants to the states to assure continued active and meaningful state participation in the site selection process.

Finally, the Act provides relatively little guidance to DOE regarding the state's role in site characterization activities and preparation of environmental impact statements. State frustration at DOE's refusal to permit full access and a meaningful role in site selection decisions is likely only to become more intense as the site selection process moves into the site characterization stage. It is clear that the substantial impacts arising from site characterization activities will demand close coordination between DOE and the states. Yet, it is unlikely that such coordination will occur unless Congress directs DOE to afford the states full participation in site characterization activities.

• VI. CONCLUSIONS AND RECOMMENDATIONS

At least two substantial national policies can be discerned at work in the Nuclear Waste Policy Act. First, providing storage for high-level nuclear waste is an important national priority and a complex undertaking. The construction of a waste repository should, therefore, be carried out in an orderly, expeditious manner. The

statutory deadlines for completion of a repository provide a framework for achievement of that objective. Second, because the containment of highly toxic nuclear waste is an emerging technology, and because the consequences of a failure of a waste repository could be disastrous, the process of locating and constructing a waste repository must be conducted with the utmost care, thoughtfulness, and factual investigation.

It is apparent from the site selection process, that DOE is working with great effort, but only limited success, in honoring the first of those policies. In striving to meet statutory deadlines for site selection activities, DOE is sacrificing the substantive adequacy of the site selection process. If carefully considered and factually adequate site selection decisions cannot reasonably be made within the statutorily established deadlines, it is the deadlines which should be sacrificed rather than the adequacy of the decision-making process.

The Nuclear Waste Policy Act itself provides that, should DOE be unable to meet the statutory deadlines for construction of a repository, DOE should undertake work on facilities for the surface retrievable storage of nuclear waste. In view of the overwhelming problems in DOE's site selection process that are already manifest, we urge that the program deadlines be altered and that work be initiated on construction of surface waste storage facilities.

By allowing DOE additional time to conduct repository site location activities (1) the Department will be able to develop an adequate technology to assure safe repository construction; (2) adequate data can be collected to assure that an optimum site is selected; (3) with less frantic time frames for site selection decisions, states and other interested parties will have a more reasonable opportunity to review and comment on proposed Department decisions; and (4) public confidence in the decision-making process may be restored.

After reviewing the problems in the site selection process which have been detailed above, the State of Utah recommends that Congress direct DOE and NRC to undertake four actions. First, the statutory deadlines for selection and construction of a repository site should be extended. Second, DOE should be directed to provide that a repository not be located in proximity to a national park unless no other site meets essential health and safety requirements. Third, DOE should be directed to collect all data reasonably available, including borehole data if needed to prepare competent environmental assessments, prior to the preparation of environmental assessments and to utilize that data in its environmental assessments. Fourth, the Nuclear Regulatory Commission should be required to review and concur in all site selection guidelines and further be required to review and concur in the environmental

assessments prepared by DOE as part of the site selection process.

The Nuclear Waste Policy Act requires DOE to submit a mission plan to Congress that outlines in some detail the manner in which DOE proposes to carry out its task of selecting and constructing a high-level nuclear waste repository. The Act does not specify, however, what action Congress shall take with respect to this mission plan. DOE will soon submit the required mission plan to Congress. We request that Congress use the presentation of DOE's mission plan as an opportunity to thoroughly review the problems which have arisen in the site selection process. On review of the mission plan, Congress should revise DOE's site selection process in the respects outlined above. Finally, Congress should direct DOE to revise its mission plan to reflect the changes in DOE policy and practice which the state has recommended. This revised mission plan should be submitted to Congress, and DOE should further be required to update its mission plan on a yearly basis so that Congress can monitor the progress of the repository program.

The clarifications of the Act which the State of Utah has proposed represent, the state believes, changes which are consistent with the original intent of Congress in establishing the program for construction of a waste repository. The state further believes that Congress can restore integrity and public trust to that program only by

reforming DOE's site selection activities to remedy the problems which we have outlined.

GOVERNOR'S TECHNICAL ADDENDA TESTIMONY
FOR THE SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT:
HIGH LEVEL NUCLEAR WASTE
REPOSITORY SITING
PROGRAM

TECHNICAL ADDENDA CONTENTS

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SOCIO-ECONOMIC ISSUES

The decision to locate a nuclear waste repository in Davis or Lavender Canyon in San Juan County, Utah will have severe socio-economic impacts upon the area. The impacts, in relative terms, upon rural Utah are distinctly different than the same impacts upon the other salt state locations currently being considered. Because of this difference, it is imperative that the Environmental Assessment process adequately address the issues so that decisions are based on the best available data and made in an unbiased manner. An informed decision cannot be made if it is based on the data found in the Environmental Assessment working papers and supporting data (ONWI 471) which we have reviewed to date.

The Nuclear Waste Policy Act of 1982 does not consider socio-economics to be a "disqualifying" factor except for a reference concerning proximity to water supplies under the general heading of socio-economics (Title I, Section 112[a]). Because of the perception that these impacts will not play a role in the selection process, they have received only a token analysis. A disclaimer was made that a detailed analysis would occur during site characterization. We feel, however, that it is imperative to adequately characterize the socio-economic impacts in all of the proposed repository sites with a detailed analysis now prior to development of Environmental Assessments. The siting decisions can then be based on the most significant differences between these sites.

The inadequate process followed since inception of the Act and exemplified

in the Mission Plan (see state comments of July, 9 1984) has resulted in shallow representations of very serious problems. These problems should be taken into account during the current Environmental Assessment process and not be left to the site characterization phase. For example, in Chapter 11 of the Mission Plan, the parameters of the socio-economic study are revealed by stating that the test and evaluation facility "...is not expected to cause significant socio-economic impacts". (P.11-1 [Mission Plan April 1984]) Before the evaluations have even begun, an assumption has been made to preclude impact analysis of the test and evaluation facility which will necessitate the influx of 250 employees plus possible family members and significant numbers of support or service workers. It is important to consider in the Environmental Assessment that 200 to 250 direct employees in the Monticello area will trigger the regulatory requirements of Title 63-51 of the Utah State Code. Impact characterization and mitigation is then a regulatory issue. (The details of this law are found on page 3). To state that these people will live in a vacuum at the site and never interact with any county or state services is very unrealistic. There will be impacts to housing, health care, and especially law enforcement, as well as other facilities and infrastructure elements. Road building alone in site characterization will require more workers than DOE has forecast. These impacts must be evaluated and specifically mitigated during the planning process just for site characterization alone.

In evaluating the impacts of the repository construction, operation and post closure activities, the mission plan assumes a careful, non-committal posture stating that the impacts "could create special problems." (P.11-2 Mission Plan 1984) Instead of recognizing the intense impacts of providing

for an increase of at least 5,000 people, in a very rural area, (impact area population approximately 20,000) from the onset, the Mission Plan, DOE's principal program plan, lays the groundwork for an assumption that a 20-25% growth rate may be handled without severe impacts. While at the same time DOE admits that a growth rate of 3% or more can cause disruptions. Utah State Law (Title 63-51 UCA) defines significant impact as a growth rate of 5% or more. The Mission Plan philosophy further carries over into the draft working papers, and if left uncorrected ultimately into the decision making phase to result from the Environmental Assessments.

The logical conclusion, then, which the Environmental Assessments will arrive at, would be that socio-economic impacts are inconsequential and will be easily remedied in the negotiations following site characterization. This is an irresponsible position for several reasons. If an adequate socio-economic study were to be done, the decision to choose the three site characterization locations would be based on an adequate representation of the likely impacts. A second reason is, the state and local governments would also be able to have adequate, timely and complete data on which to make an informed decision concerning the development as required in the Act (11(a]). The discrepancies between the Utah sites and other candidate sites would be made clear and adequate comparisons could be made and mitigation costs anticipated. For example, preparing Southeastern Utah for a project of this magnitude will be distinctly different than doing the same preparation for the Texas and Louisiana sites. This comparison, because of the large discrepancies cannot responsibly be left to a later date after, for example, site characterization data is collected.

The state of Utah has previously delineated what an adequate socio-economic impact analysis would contain and referenced an element of the Utah Code dealing with large scale developments. The regulatory procedure is outlined in the "Utah Process" which can also be used to organize and document an adequate socio-economic Assessment. Title 63-51 Utah Code Annotated provides the legal basis for this Assessment. All natural resource developments in the state which have been developed over the last few years have complied with these requirements. The socio-economic impact information presented in the working papers which we have seen to date does not even come close to satisfying this requirement. We expected that these requirements would have been satisfied during the current Environmental Assessment process.

It is the intent of this testimony to present the major data omissions evaluated in the Environmental Assessment working papers. We feel these omissions are significant enough to warrant further study before a decision is made to choose three sites for characterization study. Furthermore, the data is readily available and could be easily collected. Adequate utilization of DOE generated information such as ONWI 471 would also help in improving the product.

Baseline Projection Models

The supporting data used to make the population distribution and economic conditions projection as well as the models themselves are outdated and are not compatible with our state and local projections or assessments of current conditions. The population projections do not utilize adequate methodology and do not use actual baseline figures.

The distribution model locates all of the in-migrating population into the three major communities above the 2500 population threshold. There is no allowance for location into associated unincorporated areas. For example, La Sal, a small community well within the impact area, is not considered. No recognition of unincorporated areas is evident. The interstate economic and service ties within Grand Junction and Cortez, Colorado are also not recognized. Finally, the Navajo and White Mesa Sites are not integrated into the distribution models adequately.

The gravity model designates a greater population influx into Blanding despite the fact that commuters will have to go through Monticello daily. We would suggest a different assumption percentage to allow for this.

The economic condition characterization also includes only the two county area and thus does not recognize the Colorado implication. Colorado needs to be involved in this Assessment and to have an opportunity to comment on the analysis.

The state of Utah has completed population projections for Grand County to the year 2020 contrary to the assertion in the working papers. However, significant changes have occurred in the area over the last two or three years and even these projections are now substantially inaccurate and not reflective of the situation.

Quantitative Analysis

Throughout the socio-economic characterization of the existing

conditions and needs assessments, the analysis deals only with total numbers and does not deal with quality or other associated needs.

Housing

The total number of existing, available housing data is identified but no data exists on the condition of the housing. Locally generated data on housing conditions is available and should be incorporated. There will be a need for a wide variety of housing including recreational vehicle parks, mobile home parks and motel rooms. The analysis of motel rooms is incorrect by 25% just in its counts of units alone. The summer vacancy rate is also not evaluated as a problem.

Health Care Services

Whereas the studies show the total number of doctors available and the numbers of beds in area hospitals, they completely omit public and mental health services, alcohol and drug treatment programs as well as the limited types of treatment available in these rural hospitals. Even the number of dentists required is completely missing. The difficulty in recruiting and keeping doctors is not identified.

Policy and Fire Protection

The studies identify the current and projected police and fire personnel. However, they omit completely any projections for new jails, fire stations and all required equipment.

Education

The study notes the total number of teachers which will be needed (63) but dismisses the number of additional classrooms, the largest cost, by saying each city "appears" to need additional new schools to accommodate the baseline and project-related growth. This kind of statement will really help state and local planners!

These are the most blatant problems, others include:

Water and Sewer

The water discussion does not identify what improvement will be needed to supply the additional 1.3 million liters per day in Moab as well as the increases in the other cities.

DOE should not assume that the excess capacity in either water or wastewater systems will be available for them. Other projects may come along over the next eight years which will take the capacity completely.

Recreation

The limited data we have seen on recreation states that potential effects on existing facilities cannot be evaluated due to the lack of data. The data, though, is available and must be collected and incorporated. The retention of workers without turnover problems especially during operations of the repository will depend on the life

style which is available. Recreation is one key element of this that cannot be overlooked. There is more to recreation than simply parks and playgrounds.

There is no mention, to date in the draft working papers or any DOE analysis, of city streets, non-government public utilities, planning and zoning capabilities, or administration to name a few.

Inter-industry Conflicts

The data which we have reviewed to date has not recognized the true character of the economic balance which exists in the San Juan / Grand County area. The interaction between a developing tourism industry and the repository should be recognized and evaluated. The studies that point out that motel rooms will remain after specific construction crew needs are filled fail to admit that virtually all rooms will be filled with repository related people. As evidenced in Emery and Carbon County during power plant construction, motel rooms were filled with utility construction crews, sales representatives, government inspectors and staff, company representatives, etc. There will be no tourist rooms available and the efforts to attract destination type tourists will have been nullified. The effect of the repository on the visitation to Canyonlands National Park is the object of another testimony included in this report, but it is important to note here that it will have a distinctly negative influence. This influence further degrades local efforts that employ tourism to diversify the economy.

Advance Impact Mitigation Funding

A major factor in preparing the impacted communities for the growth which will occur would be advance planning and "up-front" mitigation of impacts in the infrastructure before the in-migration begins.

The Act precludes "up front" mitigation payments and only allows assistance to be given after construction is initiated. (Sections 116[C][2][A] and 118[b][3][A]) The impact of this policy is completely omitted in the working papers for the Environmental Assessment.

Continuation of this policy would result in larger impacts upon Utah than the other candidate sites. The Utah communities that would be affected are very rural and have the most ground to make up before they could successfully integrate a repository work force. The Utah Environmental Assessments should specifically address how DOE plans to assist in mitigating this situation.

Local Employment Benefits

The local governments and some citizens are extremely interested in the economic development which the repository may bring. They currently endure high unemployment and relatively stagnant economies. Their economy has been dependant upon the uranium and tourism industries primarily. Mining and processing of uranium is in a slump. The repository could help certain sectors of the regional economy.

The draft working papers of the Environmental Assessments make a very

shallow attempt to characterize the benefits or impacts which would accrue from location of the repository. Less than 15% of the construction jobs and slightly higher secondary employment opportunities would be available during operation. DOE policies on contractor hiring procedures and specific training of local residents could have the greatest influence on how many of the locals actually find employment. An obvious omission in the data is a skill requirement chart which would document how many people of each skill and classification level would be needed. Training policies can all be developed at this stage which would help determine benefits locally.

The decision to select large, national construction companies will also have a negative influence on local employment unless DOE mandates conditions for hiring practices.

A careful, accurate depiction of a rapid growth situation needs to be portrayed in the Environmental Assessment. Many local existing businesses may be forced out of business due to national chain store competition. It is a misrepresentation to say that there would be \$70,000,000 of local purchases. The total assessed value of all of Grand County is \$60,000,000. A further omission is an Assessment of the local as well as the regional economies ability to respond to this magnitude of impact. The regional economic ties with Colorado will dilute the local benefits from these purchases.

Local Fiscal Analysis

There is a totally unacceptable analysis of the local fiscal conditions in the working papers of the Environmental Assessment. These simply include a

statement that impact funds will be available. It is assumed, we surmise that these funds will pay for everything. It is necessary to identify in the Environmental Assessment what funds are to be used for mitigation and where the funds come from. The working papers assume that the state will make a detailed analysis of fiscal impacts and have them approved for mitigation funding. Furthermore, they state that new tax increases will be available to pay for increased service costs. Finally, although ONWI 471 contains a large amount of data which should be incorporated into decision making documents, it needs to be updated.

It would be easy to update the 1980 economic data contained in ONWI 471 to make available to decision makers the economic standing of the affected areas. It is not responsible to simply state, in effect, that this data is not valuable because of the mitigation funds which will be allotted.

Mitigation is an unresolved issue at this time and should not be allowed to be left out of the Environmental Assessment. The constant reference to mitigation in all working drafts of the Environmental Assessments and supporting data leaves the states hanging without any idea of what is going to occur or if, indeed, mitigation will solve all of the problems. The Environmental Assessment should contain a detailed time frame, process and cost analysis which can be evaluated by decision makers.

Mitigation

Mitigation efforts appear to be extremely important to DOE because they apparently feel these payments will solve all of the socio-economic impacts.

However, the mitigation process will not be implemented until the site characterization phase according to the mission plan. This is, in and of itself, unacceptable. The analysis omits any substantive discussion of mitigation following decommissioning and excess infrastructure capacity. We suggest that a detailed impact monitoring program be developed for implementation in the very beginning of the development process. It should be described in the Environmental Assessment and implementation should not be delayed until site characterization like everything else appears to be. Mitigation specifics are needed in order to accurately compare the costs of one site with another. If it costs 10 or 20 million to mitigate impacts in Texas and it costs 50 to 60 million in Utah, then this should be a factor in the decision.

CULTURAL ISSUES

The Utah Division of State History; namely, the Utah State Historical Society, the State Archeologist, and the State Historic Preservation Officer, finds the present method of study and evaluation of impacts related to the DOE repository siting process inadequate and faulted for several reasons:

1. DOE's current method is not producing the information needed to evaluate the locations under review for cultural resources. Neither the quantity nor quality of cultural resources will be known when the pre-site characterization study is completed. Yet DOE claims that the data are being generated to make pre-site characterizations.

The principal problem is one of perspective. DOE's rationale claims that pre-site characterization does not require in-depth information on cultural resources, since no actual disturbance of sites occurs in pre-site characterization itself. DOE also refuses to acknowledge that pre-site characterizations do in fact imply a much higher probability of eventual threat to cultural resources. However, in order for any valid, professional judgment to be made for pre-site characterization, the total project impact on cultural resources must be considered, rather than their piece meal, step-by-step kind of sampling. The staff of the Division of State History do not accept DOE's samplings as adequate, nor its process professionally valid.

For example, DOE's Environmental Assessment pre-characterization of potential nuclear waste repository locations in Utah notes only four archeological sites, none of which appears to have major archeological significance. However, cultural resource studies undertaken by the State Archeologist and staff predict there likely will be as many as 1,000 archeological sites in the project's "impact" area when all areas of disturbance (such as transportation corridors) are considered. Some 50% to 70% of those sites may qualify for National Register listing and have both national and international significance.

The problem for historic sites is similar, as State History's study shows. DOE to date has conducted no detailed literature search, let alone the oral histories and field work needed to determine accurately the numbers and historical quality of the estimated 100 historic sites (30 of which are already known) in those locations. Both the historic Kelly Ranch and "Home of Truth" a communal experiment of the 1930's are in this general area, yet DOE's Environmental Assessment does not consider them adequately.

DOE's current investigative processes are generating neither sound professional data on cultural resources, nor in quantities extensive enough to make professional location pre-site characterizations for a nuclear waste repository. It should be remembered that all cultural resources are unique, they are not simply a "kind of site." Hence, any process which does not identify cultural resources with some specificity and with predictability, is both inadequate and invalid. DOE's fragmented approach in no way addresses the overall impact of the proposed project on

cultural resources on potential locations.

Furthermore, DOE's approach severely biases the selection process, since it implies there will be little or no impact on cultural resources. It is readily apparent that by making it appear that there will only be the disturbance of four relatively insignificant cultural sites as opposed to the disturbance of a thousand or more significant ones, the DOE can essentially eliminate cultural resources as a factor in choosing the location of a waste repository. Since it is the intention of the DOE to select locations in differing geological settings for further study, it is probable that only one salt site will be selected. Hence, in comparing possible salt repositories, the only time cultural resources will be a factor in the selection process is in the pre-site characterization. By postponing the study of overall project impacts, it appears there will be little or no disturbance of cultural resources. That is clearly not the case. We think the disturbance of hundreds of nationally significant archeological and historical sites should definitely be a factor in selecting which of nine locations are to be studied further.

2. With its current method, DOE is already damaging cultural resources in the area. For example, we have documented adverse effects to archeological sites 42Sal0695 and 42Sal1244. Both sites have been affected by vandalism and excavation. We believe DOE is already clearly in violation of federal laws, and federal regulations as outlined in 36CFR800-8. Furthermore, DOE neither admits to nor addresses the secondary impacts to cultural resources due to their study or impacts caused by more people being in the area.

The facts are, however, that DOE's methods of investigation are already having adverse impacts on cultural resources.

3. Because of the scale of this nuclear waste repository project, State History can understand why DOE may be reluctant to study all areas now under review thoroughly and in detail. However, Utah feels that a nuclear waste repository project with the potential consequences to a state, its people, and to the nation as a whole, as a nuclear waste repository, must be scrutinized with the greatest care.

It is for these reasons that State History has recommended the signing of a memorandum of agreement between DOE, the Advisory Council for Historic Preservation, and our State Historic Preservation Office. This agreement would assure professional methods of cultural resource investigation, while allowing DOE to phase in its studies as much as possible. Cultural resources would be properly identified and evaluated both during the investigative stages and during later development stages, should a Utah location be chosen. To date DOE has argued that their current specific activity and investigative processes are adequate. However, the Utah Division of State History disagrees strongly.

In summary, we reiterate (1) DOE's investigative procedures are not generating the information needed to form sound, professional judgment about cultural resources on the Utah locations being reviewed as sites for a nuclear waste repository, nor will they give DOE the total picture on cultural resources they need for pre-site characterization. (2) DOE's investigative procedures have

already damaged cultural resources in the area; and (3) finally, State History recommends the signing of a memorandum of agreement to assure that professional procedures will be implemented while DOE is acquiring data on both cultural resources and other matters, and while managing the data obtained during both the investigative stages and the later project development stage, should a Utah location be selected.

TRANSPORTATION ISSUES

The transportation of high level nuclear wastes to a repository is a national health and safety issue which has, to date, received inadequate attention by the Department of Energy. While the state of Utah agrees that the safe containment of waste after closure of a repository is of extreme importance, the safe transportation and emplacement of waste also deserves serious treatment.

Using definitions which are too general for meaningful application, the siting guidelines provide for the comparative evaluation of sites on the basis of overall costs, risks, and impacts associated with transportation requirements for repository development. The application of the transportation guideline (10 CFR 960.5-2-7), by DOE's own classification, does not require site characterization and should, therefore, play a role in the early determination of site suitability. To date DOE has completed insufficient work to make even the most basic transportation decisions. For example, in regard to the mode of conveyance, lack of adequate analysis prevents a review capable of assessing risks and impacts. We do not know whether nuclear wastes will be transported by truck, by rail or by both. That lack of information precludes us from determining many public safety and emergency preparedness needs and from ascertaining the lead time necessary to acquire appropriate personnel and facilities. It precludes us from determining virtually all Environmental, socioeconomic and park impacts. And further, it precludes us from considering the feasibility of adequate

mitigation for some of these impacts.

For evaluation of costs, risks, and impacts, a potential site must be viewed from at least two perspectives. Nuclear waste transport will affect the transportation system of the west and it will have more direct impact locally. This analysis must be considered in both the context of a transportation system and on local and access routing factors.

Utah is part of a regional transportation network and must be seen in the context of this system. Regional transportation problems are important factors in the determination of site suitability. The ramifications of consistently bad weather conditions, rugged terrain, lack of safe havens, limited options for alternate routing and inadequacies in emergency response capabilities along routes to a Utah repository affect the suitability of the Utah site. Early identification of transportation bottlenecks which could inhibit the orderly flow of the entire repository operation is necessary. These could also cause undue risks to individuals along routes and thus are critical to making responsible siting decisions.

DOE must consider factors that will determine our ability to respond to emergencies and minimize hazards. They must also determine conditions which could cause delays in transporting wastes; this is important because stop time is a very sensitive risk factor. In fact, stop time is the critical issue in risks related to potential sabotage and diversion of wastes, and to exposure of population to radiological emission from the transport vehicles.

Since most high level waste is generated in the east, long transportation

corridors would be necessary to ship waste to a western repository. Transport corridor considerations affecting cost, socioeconomic effects, and institutional burdens have received relatively little attention and should be addressed more fully in the siting program. These impacts and risks would be most acute near the end of this waste funnel (i.e. the repository). Not only will transporting wastes down long corridors expose more communities to impacts, the likelihood of problems will be multiplied. The longer the routes the riskier the transport. More data needs to be collected and more analyses need to be completed to determine local and access routing conditions and issues. Geologic hazards, rugged terrain, and other physical problems will make it difficult and costly to the point of making it infeasible to build and maintain safe transportation access to a particular repository site.

For example, there is a lack of physical space around the city of Moab to route waste and repository related transportation. One solution might be to place waste on a train at Potash. Because of the stop time associated with this maneuver the local population would be subject to greater radiological risks. And, if wastes from the East were routed through Salt Lake City, then an entirely greater magnitude of hazard would need to be considered. DOE has failed to consider this possibility in their analyses.

If Utah is selected for further repository development, the access route for site characterization and probably for repository construction, operation and closure will be along SR-191 and SR-211. According to Utah's Department of Transportation (UDOT) SR-211 was constructed as an access road to a recreation area with pavement design intended for use by light traffic. Mid way on this route a sustained grade of between 6 percent and 8 percent reduces

the capacity by 60 percent over a section of approximately one and one-half miles in length. Severe changes in horizontal alignment reduce the operating speed significantly on a few sections.

Current traffic on SR-211 is approximately 45 vehicles per day with an average of one heavy truck per day. Using DOE projections, the phase of exploratory shaft construction approximately would increase that flow to 340 commuter and 28 truck trips to be made each day.

UDOT officials think that these estimates are conservative particularly because these projections do not include thousands of shipments necessary for salt disposal and shipments of fresh water.

The impact of significantly increased traffic, both from site characterization and further repository development, will seriously tax the existing transportation system. Ironically, the measures needed to relieve this strain, such as building additional access corridors, greatly increases adverse impacts to the fragile environment, the parks, cultural resources, and the tourism industry. In conclusion, there is no justification for the inattention given to the issue of transportation.

AIR QUALITY ISSUES

The Department of Energy (DOE) is required by the Nuclear Waste Policy Act of 1982, to develop the criteria for an acceptably located high level nuclear waste repository. DOE is currently involved in that activity. There are many concerns which have been raised regarding the proposed repository location in Utah. Many of those concerns are a direct result of the site being located adjacent to Canyonlands National Park. The Bureau of Air Quality, Utah Department of Health is one of the agencies reviewing DOE's progress in site analysis.

The Bureau is a regulatory agency, and has permitting authority for any air pollution source wishing to locate within the state. The agency also provides expertise to evaluate air impacts that may go beyond permitting activities. This review is needed to insure proper decision making concerning major projects. We are concerned that the existing process, developed by DOE, is not adequate to allow an appropriate analysis to be performed to identify an environmentally acceptable repository site. While the repository is expected to have significant air quality impacts, the DOE has failed to even complete basic analyses to meet our permitting requirements. or to evaluate the cumulative impacts the repository and other potential developments will have on the rest of the park. The guidelines, mission plan and 4th draft of the working papers for the Environmental Assessment which have been prepared by DOE do not require the collection of sufficient data to allow the kind of evaluation necessary for an adequate review. The three sites selected for

site characterization should be able to pass all permitting requirements. Demonstration of that adequacy thus should be contained in the Environmental Assessments. The significance of the decisions reducing the number of sites from nine to three mandates that sufficient data on air quality impacts be available. If a site is not suitable because of adverse air quality impacts, this fact must be known prior to site characterization. This is not an extraordinary expectation since these data are routinely collected for use in decision making for projects of similar magnitude. For example, the siting of a power plant or leasing of coal go through comparable reviews prior to site selection. Our concern and the need for adequate air quality analysis is heightened by the close proximity of Canyonlands National Park with its Class I air quality designation and by the difficulty of modeling air impacts in complex terrain.

Furthermore, DOE preliminary work indicates that national ambient air quality standards would be violated during site characterization and repository construction. The data gaps which currently exist in DOE's decision making process, and which are reflected in the working drafts of the Environmental Assessments, do not provide for adequate permit review. It is appropriate to have sufficient information included in the decision making process to assure that permitting would be possible; otherwise, one or more of the sites selected may not qualify for a permit.

The Utah Air Conservation Act requires a review of all sources that have the potential to emit air pollutants. In response to that act, the Utah Air Conservation Regulations (UACR) have been developed. They identify the

procedure that the review process must follow.

Sections 3.1.6, and 3.6, UACR, requires that prior to any on site activities an extensive amount of information be provided so that an acceptable review can be performed. The regulations require all available engineering information that relates to the air pollution emissions related to the repository be included in the permit applications. The required information must include the estimated emissions and design specifications from secondary sources such as the cement plants which provide the cement for the shaft lining and the asphalt plants providing the asphalt for road pavement. Sufficient information must be gathered to develop an emission inventory that can be used as input for computer modeling to determine the impact the repository is predicated to have in relationship to applicable standards. Because of the complex terrain in the area, and proximity to the park it is essential to collect on site meteorological and ambient air data to be used as model inputs. Data from other locations will not be sufficiently site specific to allow an acceptable review. This site specific information must be provided by DOE.

An essential part of the review procedure must consider any adverse impacts on the air quality related values, including, among other things, visibility, that the repository or site characterization may have in Canyonlands and Arches National parks. The Park Service has considered some air quality related values in each state that may require impact analysis. No specific consideration of these air quality related values has been given by DOE and, therefore, no evaluation of the action necessary to insure their protection has been undertaken. Because of the proximity of the proposed

repository to the Park, significant impacts to the air quality related values identified for the parks may occur. The impact of the site characterization and the repository on the values can be evaluated and, in fact, has typically been evaluated where development has been adjacent to other parks. For example, the NPS, BLM and the state of North Dakota have evaluated such impacts from coal leasing and power plant construction near Theodore Roosevelt National Park.

To assess all park impacts, DOE must also review the cumulative impacts the repository and potential energy development on the rest of the park will have. The review required under regulation must also assure that the state's best available control technology requirement is met throughout all phases of repository activity.

The Department of Energy must also obtain a Prevention of Significant Deterioration (PSD) permit for repository siting activities. The PSD requirements are contained in Section 3.6 of the Utah Air Conservation Regulations. To demonstrate that all phases of the repository will meet the PSD requirements additional data must be provided for modeling input. The information must include a year of meteorological data and a year of ambient air data. These required data have not been collected and, therefore, an adequate PSD review cannot be performed. Because of the proximity of the proposed location to the Canyonlands National Park, it appears appropriate to have all necessary data collected to allow an adequate PSD analysis prior to the final selection for site characterization. It has been demonstrated in previous documentation (ONWI 477) that the potential exists for repository activities to have a significant impact on the Canyonlands National Park and

on the prevention of significant deterioration increments. Screening level review of the proposed 12 foot exploratory shaft determined that the NAAQS and PSD increment would be violated in Canyonlands National Park. What will a complete evaluation of all 5 shafts show?

In developing the Mission Plan, guidelines and the working papers for the Environmental Assessments the Department of Energy has not required that all the air quality issues be considered before a site is determined acceptable, nor did they include the criteria which must be considered in the decision.

In summary:

1. Significant air quality impacts to the park may occur which deteriorate air quality to levels which do not meet the National Ambient Air Quality Standards.
2. Data can readily be and should be collected to determine air impacts from both the proposed site characterization and repository siting for inclusion in the Environmental Assessments.

WATER QUALITY ISSUES

1. The siting process has not demonstrated that alternative disposal methods and locations with less potential salinity impact have been included in a comparative analyses of the Utah sites.

A very fundamental and basic question that must be resolved, relative to the proposed High Level Nuclear Waste Repository Project in Southeastern Utah, is that of suitable surface containment or disposal of the mined salt. Estimates of the volume are extremely large (10 to 20 million tons) and the fact that the two locations under consideration are in the Colorado River drainage makes this question extremely critical. There is not room in the Colorado River Basin for any new source of salinity.

The seven basin states (Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada and California) have been cooperatively working together since 1960 on a salinity management and control program. The Colorado River Basin Salinity Control Forum, in its present form (which includes the basin states), was created as a formal organization in 1973 after passage of the Federal Clean Water Act with the objective of maintaining salinity at or below numeric standards established at three locations in the lower basin. These numeric standards along with a Plan of Implementation have been adopted by each of the Forum states as an enforceable part of their water quality standards and have each been approved by the Federal EPA.

The Forum implementation plan acknowledges the existing sources of salinity and includes a number of federal and non federal measures to meet and maintain the adopted salinity standards in the lower basin. Many of the identified measures are very expensive to implement. This plan does not include allowance for any salinity contributions from construction or maintenance of a high level nuclear waste repository in the Colorado River Basin. Bringing salt up from 3,000 feet below the surface significantly increases the salt discharge potential. Such a facility would not only be a Utah concern but would be of concern to the other basin states in addition to the Republic of Mexico.

Unless there can be an absolute guarantee of total containment of the produced salt and unless such containment can be accomplished on a perpetual basis, this facility should not be constructed within the Colorado River Basin. The potential for total salt containment must be determined before project feasibility can be judged.

The state feels the risk of additional salt reaching the Colorado River from flooding, surface storage, windblown salt and salt transportation from this location is an adverse Environmental conditions and should be used to disqualify the site from further consideration as a repository site. Because of the existing salinity problem in the Colorado River Basin and the increased salinity potential which would be created by a repository at the Paradox Basin sites, other locations outside of the Colorado River Basin should be rated environmentally more favorable than the Utah site. Therefore, the salinity evaluation of the Paradox Basin sites must include a description and comparison of alternative locations

outside of the Colorado River Basin. The evaluation must include a discussion of the practicability and estimated costs of salt containment at the other locations.

Different disposal methods which would not involve salt storage and thus not potentially increase the Colorado River salinity also need to be included for comparative evaluation of this site. A description of the alternatives, discussion of practicability, and estimated costs and discussion of salt disposal during and after operation for the Paradox site will need to be reviewed by the state.

State memoranda of November 22, 1983 and January 4, 1984 addressing these potential salinity impacts and comparisons of alternative disposal methods have not been responded to by the Department of Energy. Copies of these memoranda were given to Mr. Taylor of the DOE in a January workshop in Utah. The information was again requested by the state in the May 4, 1984 workshop in Utah. The 4th draft working papers of the Environmental Assessments provided to the state do not address the comparative analyses requested by the state. To date there has been no written communication from DOE to the state on this critical issue.

The potential impact on streams is not included in the 4th Draft working papers. Data has not been provided on the amount of salt which might be blown from the salt pile and the potential for salt spills during transportation and the resulting impact. Data are also missing on the expected concentration of runoff and seepage from areas where chemical stabilizers might be applied for dust control.

A cost estimate of the downstream salinity impacts from all project related activities should be provided prior to any construction. This project involves millions of tons of salt. The Bureau of Reclamation has estimated that each ton of salt reaching the Colorado River system above Parker Dam has an adverse impact of approximately \$57 in terms of the costs associated with reduction in crop production and for treatment of water for its intended use.

The final disposal location of excess salt has not been identified in the working papers. Onsite disposal or removal to any surface location in the Colorado River Basin is a major concern to the state. Since the location has not been identified, neither has the potential impact been evaluated.

2. The potential flooding of the two sites has not been adequately addressed by the Department of Energy. Drawings of repository surface facilities indicate that they will be located in the existing flood plain. A description of methods and engineered structures to prevent flooding have not been sufficient to satisfy the state's concern on this issue. The state's concern was expressed to DOE in the May workshop. The proposed sites are in canyons where it may not be practical to locate adequate diversion structures to sufficiently protect the surface facilities.

The methodology used to arrive at a precipitation value for the Probable Maximum Precipitation (PMP) was unacceptable considering the nature of this project. One storm in Blanding, Utah was used for the calculated PMP. Fifteen to twenty five years of data should be evaluated instead of the brief period considered. DOE should also collect on site data for

comparison prior to issuing an Environmental Assessment. The flood zones indicated for the 3 sites in Lavender Canyon and the one site in Davis Canyon are further questionable due to the lack of on-site investigation of stream channel configuration, soils, vegetation, and geology. The DOE contractors indicated in May that a more recent flood study was being prepared. Although the report was to have been completed within a few months, the state has not received a copy. The Environmental impact of these diversions, and the ability to reclaim areas where the flow would be diverted is unclear and should be addressed in the Environmental Assessment.

The HLNW Act indicates that a certain amount of nuclear waste may be placed on-site for experimental purposes during siting activities. Considering the amount which will be prepared and disposed of on-site during site characterization activities and repository operations, the state feels that a highly detailed risk Assessment of flood potential at the sites is warranted.

3. Section 6.2.1.6.3 of the 4th draft working papers implies that DOE considers that a favorable condition is found in meeting state environmental requirements. The State Bureau of Water Pollution Control does not agree with that statement because of the failure of DOE to evaluate potential salinity impacts to surface water and groundwater and flooding problems.

Another deficiency in the process is inadequate water quality information. Environmental studies should include at least a year of

intensive stream and groundwater monitoring prior to significant site disturbance for all facilities associated with the siting process. The data should then be included in the Environmental Assessment and at least 30 days provided for public and state review and comment. To date no water quality data for Indian Creek, Davis or Lavender Canyons is included in the working papers for the Environmental Assessments. Parameters to be monitored are also missing from the report. Baseline data is needed to evaluate the impact of potential spills, flooding and other events.

4. The disposal method for sanitary wastewater is unclear. Flow estimates, treatment methods and expected impacts are not clearly indicated. Different DOE statements have implied package treatment plants, septic tanks, haulage, discharge, and reuse. Since the method of disposal is uncertain its potential impacts and feasibility cannot be evaluated as they should be in the Environmental Assessment prior to site nomination. Disposal methods and potential impacts of wastewater containing radioactive substances must also be discussed.

VEGETATION/WILDLIFE

The Siting Guidelines for Environmental Quality (revised May 14, 1984) list conditions which could qualify or disqualify a site for a nuclear waste repository. In order to analyze these conditions as they apply to a specific candidate site, certain types of baseline information are required. The state of Utah feels that even the minimal baseline information (outlined in Appendix IV of the siting guidelines) necessary to make the Environmental quality guideline applications is lacking at this time. Biotic data are particularly lacking with regards to a description of existing terrestrial and aquatic vegetation and wildlife, and the location of any identified critical habitats for threatened or endangered species. Without adequate baseline data, impacts cannot be carefully assessed and appropriate mitigation cannot be developed. Therefore, a determination of whether or not a site qualifies as a potential repository site cannot be made at this time.

Conditions included in the Environmental Quality Guideline (10 CFR 960.5-2-5) address the ability to meet or comply with local, state or federal Environmental requirements within time constraints of the repository siting schedule (Favorable Condition #1, Potentially Adverse Condition #1). Based on available data, the state of Utah does not feel the Environmental requirements can be met. From the standpoint of the State of Utah Mined Land Reclamation Act (Title 40-8, Utah Code Annotated 1953), there is no evidence that conditions of the Act can be met, since the type of information required for a mining permit has not been gathered as yet and could not be gathered within the next few months.

Several types of information will be required on all potentially impacted areas associated with the repository siting activities, e.g., facilities, drilling sites, transportation and utility corridors, etc. These will include: 1) characterization of the vegetation on the proposed areas and routes, including measurements of total vegetative cover, cover by individual species, and the amount of acreage of each vegetative habitat type to be disturbed, 2) Baseline information on wildlife population density and habitat requirements, and 3) A thorough survey of each area of proposed disturbance for threatened or endangered species or their critical habitats, or species or habitats of particular importance to the state. After baseline data is gathered, a thorough analysis of impacts of repository siting will be necessary to develop mitigation techniques to reduce or negate all impacts. A complete reclamation plan to restore the area to as-near natural condition as possible must then be submitted. A complete reclamation plan takes into account site-specific vegetation information, soil characteristics and post-project land uses, and proposes specific methods for regrading, re-topsoiling, seeding and monitoring the success of the reclamation over time.

Conditions of the Guidelines address in more general terms, the need to protect the quality of the environment and to mitigate, to either an acceptable degree or an insignificant level, Environmental impacts of the repository (Qualifying Condition #1, Favorable Condition #2 and Potentially Adverse Condition #2). The state feels that the baseline information required to assess Environmental impacts to the area has not been gathered. Since the size, duration and quantity of impacts, and their combined effects, cannot be determined, mitigation strategies cannot be developed to deal with the impacts. Therefore, it is not known if or to what level impacts can be

mitigated.

On a qualitative level, the fourth draft of the working papers for the Environmental Assessments for both Davis and Lavender Canyons (Chapter 6) list noise, air quality and visual impacts as effects that can not be mitigated, based on the data available. The state feels that other impacts that can not be mitigated may be found to occur, when impacts of the repository facilities and transport systems on the vegetation and wildlife resources of the area are quantified. These impacts include potential extirpation of the local deer herd and the fishery in Indian Creek, increases in turbidity and sediment in the surface water system, damage to flora and fauna from windblown salt, impacts of the rail route on the Colorado River System and animal movement patterns, and destruction of threatened and endangered species including those of the Colorado River System and loss of roosting habitat for bald eagles and nesting habitat for peregrine falcons.

While analysis of impacts of the repository facility is inadequate given the paucity of quantitative data, attempts to analyze transportation corridor impacts using assumptions based only on representative methods and routes are almost meaningless. The same types of quantitative data required for a site facility mining permit (see discussion above) would be required to evaluate transportation methods and corridors. Any suggestion that transportation decisions can be delayed and that corridors can be adjusted to avoid serious Environmental impacts is questionable in light of cost, safety and engineering problems associated with transportation over the rugged, unstable terrain in the Lavender - Davis Canyons vicinity. The transportation problem is just one example where assumptions used to apply the guidelines cannot be verified.

Other assumptions of particular importance to biological impacts regard the feasibility of off-site disposal of salt and stabilization of the on-site salt pile through salt encrustation.

In addition to needing site specific, quantitative evidence to evaluate the repository's impact on environmental quality, the state of Utah feels that DOE must take a holistic view in its analysis of the environment. Significant impacts are difficult to pinpoint when an area is dissected into parcels (facilities, boreholes, transportation corridors, etc.) and when each issue (wildlife, vegetation, protected species, historical resources, etc.) is analyzed separately. Davis and Lavender Canyons are part of a regional resource area which includes a National Park, a proposed Wilderness Area, three Wilderness Study Areas, a primitive area, a State Historical Monument and several special resource areas not yet given protected status. This latter category includes Beef Basin, renowned for its cultural resource; Lavender Mesa, an area of pristine vegetation protected to date by its inaccessibility and the beautiful and rich Manti-LaSal National Forest. While the negative impacts of noise, dust, windblown salt, constant human presences or any other individual factor might seem small, (even if sufficient data were available for evaluation), the combined impact of these factors on the biological resources of these special areas is unacceptable. The immense natural resource of this corner of Utah cannot be allowed to deteriorate through a process that ignores the whole as it dissects both the land and the issues.

For all these reasons, the state of Utah feels that the Environmental Quality Guidelines for Nuclear Waste Repository siting cannot be accurately

applied to the proposed Davis and Lavender Canyons sites at this time. Until enough data are gathered to accurately assess impacts and determine if these can be acceptably mitigated, a favorable condition for siting cannot be rendered.

GEOHYDROLOGY AND GEOLOGY

As noted repeatedly by the state and again in the August 5, 1984 Petition for Rulemaking sent to the DOE, "[t]he Nuclear Waste Policy Act of 1982 does not provide for a standard governing the extent of physical investigations, testing, boring and other data collection and data analysis required to establish the factual basis for application of the site selection guidelines in site nomination and in the supporting Environmental Assessment". The siting guidelines only partially identify the geologic and geohydrologic issues which are to be evaluated in the Statutory Environmental Characterization Studies.

The Department of Energy has drilled one geologic borehole which is located 3.5 miles northeast of the Davis Canyon site and 7 miles northeast of the Lavender Canyon Site. Regional information obtained from this one borehole has been extrapolated to describe the geologic and geohydrologic setting for the two sites under consideration. The result is that a number of assumptions are used to make the finding that the geology and geohydrology of the two sites are similar to that which is found at the borehole site. The state of Utah feels that this approach does not meet the professional standards and procedures normally followed in an exploration program to determine the geologic and geohydrologic characteristics of a site considered for the development of minerals, oil and gas or for other purposes of characterization.

Many geologists feel that geologic barriers are the key components of a waste isolation system because engineered barriers cannot guarantee waste containment with present technology. Thus, when the engineered barriers fail, the geologic barriers must isolate the waste from the accessible environment until the radionuclides have decayed to acceptable levels of radioactivity. If geology, not engineering, is relied upon for waste isolation, then the entire geologic environment needs to be fully evaluated. Different rock types, hydrologic settings, geochemical characteristics and geometry of the rock units provide different types of barriers. The goal should be to find the geologic environment with the largest number of effective, independent and multiple barriers to the environment. Defining the total geologic and geohydrologic environment is not easy and requires intensive field studies and sophisticated modeling. While the geology of the Lavender and Davis Canyon sites appears "simple", detailed studies could disclose complications that are potential weaknesses or "fatal flaws". Furthermore, any comparison of sites and any determination to include or exclude a site from site characterization must be based on a compilation of technically sound evidence and thorough review of the geologic and geohydrologic parameters of all proposed sites.

If we assume, as the DOE apparently has, that the geology and geohydrology of the sites is homogenous over the 7 miles southwest of the GD-1 borehole within which the Davis Canyon and the Lavender Canyon sites are located, then should this assumption also be carried through for the 7 mile radius of the borehole? Within the 7-mile radius of GD-1, there is the potential for subsurface geologic features to exist which could seriously discredit or disqualify a site. Some of the geologic features of instability or salt movement relatively near Gibson Dome include:

1. The Grabens extension zone which is located 12 miles from the proposed repository sites. A 2000-foot-thick section of rock above the Paradox salt is gradually sliding towards the Colorado River. The faults in this section of rocks could provide hydraulic connection between the surface water, groundwater, and the top of the salt. It has not been conclusively shown that Gibson Dome is beyond the eastern limit of the zone of sliding and fracturing.
2. The Gibson Dome sites are a few miles from the axis of Gibson Dome and Indian Creek syncline, which show thinning and thickening of salt. Thinning and thickening in the past can indicate a potential for similar salt movements in the future, depending on future geologic conditions.
3. The sites are 13 miles from Lockhart Basin, which is an active dissolution collapse structure. Why dissolution has occurred at Lockhart Basin and the rate of dissolution are not known. It is also not known whether similar conditions exist in the Davis and Lavender Canyon sites.
4. The sites are 11 miles from the Shay Graben complex. Shay Graben is a potential area for groundwater movement down and to the salt along faults. Therefore, it is a potential dissolution area. How Shay Graben affects ground water flows has not been established nor has the maximum displacement of the fault.
5. The sites are 18 miles from Beef Basin which is a dissolution collapse structure. This feature is not well understood.

6. The Dark Canyon fault complex, about 30 miles away from the sites, is thought by some investigators to be a discharge area for the lower hydrostratigraphic unit. This is approximately 120 miles closer than Marble Canyon in Arizona, which DOE investigators have identified as the discharge area.

Groundwater is a likely pathway for radionuclides to escape to the environment. Except for human intrusion or catastrophic events, the most likely way that radionuclides will reach the environment is by dissolution of the waste and groundwater transport of the radionuclides in solution into an aquifer or into a surface discharge area. Because groundwater flow paths and flow velocities are critical to understanding escape routes into the environment, these measurable hydrologic characteristics must be understood and be amenable to modeling.

The characterization of the hydrostratigraphic (groundwater containing) units at the sites draws on drill stem tests and geophysical information produced from GD-1 and other oil and gas exploration wells in the region. Hydraulic data obtained for the two sites is tentative at best due to the extrapolation of information from such remote drilling locations which are not adequately described. Hydraulic properties within hydrostratigraphic units are known to change significantly between wells drilled within a hundred feet of each other even though the geologic units are continuous. The reason for this is the jointing, fracturing and variable porosities which may exist over the distance between two wells and which may drastically alter groundwater flow. Professional geohydrologists agree that for this region, data on geologic stratigraphy may be correlated for wells up to 32 km (20 miles) apart

as the DOE has done. However, hydraulic properties cannot be correlated over such distances.

Broad assumptions have been made on the recharge and discharge relationships of the 3 preliminary hydrostratigraphic units identified. There is little data available to support assumptions made concerning the middle and lower units where dissolution features and/or faults have been identified (WCC, 1982a, ONWI-290II, p 9-82).

Should leakage into the host rock formation from the Honaker Trail Formation occur the potential exists for an accelerated rate of deterioration of the cannisters. The reason for this is that although DOE is assuming a low magnesium (Mg) concentration in the host rock for the evaluation of cannister failure, their own tests with water containing 130 ppm Mg, a highly corrosive concentration, have shown accelerated deterioration. This would be exacerbated in the Paradox Basin because water quality evaluations for the Honaker Trail formation, the lower hydrostratigraphic unit, have shown the Mg content to be 2,000 ppm.

The potentiometric levels and directions of groundwater flow for the 3 preliminary hydrostratigraphic units identified are based once again on extrapolation of the data obtained from oil and gas exploration boreholes in the region. At best, the assumptions made are tentative. The nearest datum for the lower hydrostratigraphic unit are about 40 miles south of the sites and about 80 miles to the southwest. The potentiometric surface drawn between such distant points is of very limited value in making determinations of groundwater levels and flow directions.

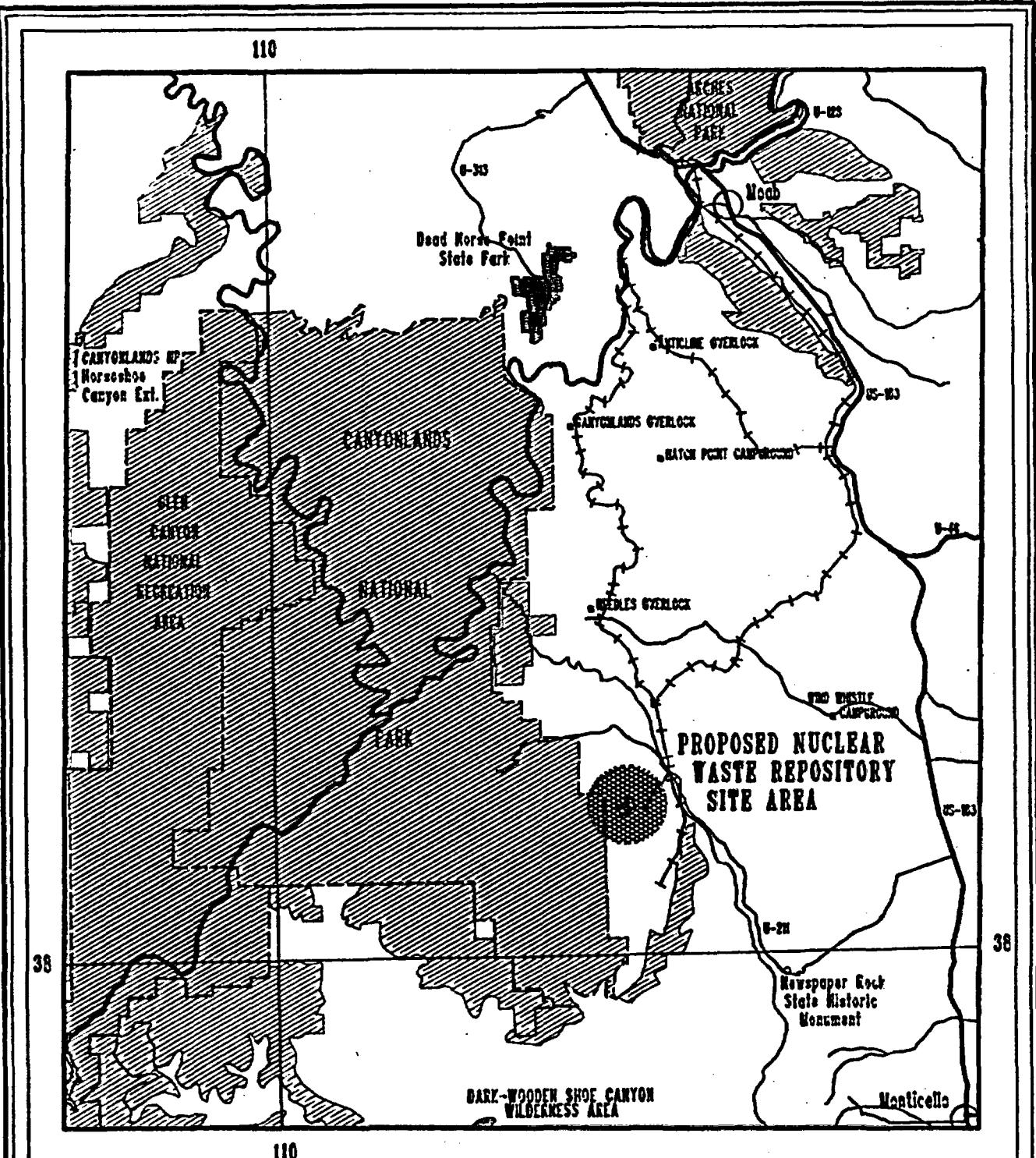
DOE's use of non-committal phrases to describe the geohydrology of the sites only serves to highlight the uncertainties involved and confuse interested members of the public. In the working drafts of the Environmental Assessments and supporting documents, there are alarmingly frequent uses of phrases such as "probably is", "thought to be", "may be", "tentatively is", "assumed to be", "estimated to be", "appears to be", "as presently defined" and "apparently is". These phrases are predicated on insufficient data.

In January of 1982, the Department of Energy submitted an application to the Utah Division of Oil, Gas and Mining for exploration borehole drilling within the Davis Canyon site. In February of 1982 the Division granted an exploration permit. The borehole, GD-2, was never drilled. Subsequently, because the DOE failed to submit Environmental reviews on disturbance associated with siting activities according to federal requirements, the Governor of the state of Utah placed a moratorium on permitting. In June and again in August of 1982, the DOE submitted exploration permit applications to drill GD-3 and GD-4 in areas immediately adjacent to the sites. The Division reminded the DOE of the moratorium on permitting that would exist until an Environmental review as required by federal law was completed. The DOE did not complete the Environmental review and therefore did not obtain exploration permits and consequently did not conduct the drilling studies. It is not clear why the DOE did not complete the Environmental Assessment work required for the exploration program.

The "Aqua Summit" held in July of 1983 was a two day exchange between state, federal (DOE, USGS) and private geologic and geohydrologic specialists on the geohydrologic issues of the Lavender Canyon and Davis Canyon sites.

The conclusions of this joint meeting were to drill a cluster of drill holes downgradient from GD-2, close to, but outside the park boundary; conduct geophysical work designed to indicate the regional structural setting and geochemical work designed to characterize potential discharge areas. The Governor of the state of Utah invited the DOE to negotiate with the state during the planning phase so that these activities could be completed during the fall and winter of 1983-1984. The surface studies were initiated although the boreholes have not been drilled. The state realizes that if the exploration programs had been completed, there would have been a significant difference in the amount of site specific geologic and geohydrologic data that would be available for the application of subparts C and D of the guidelines at this nomination for site characterization phase.

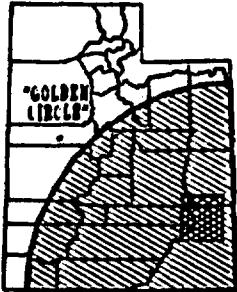
The state of Utah feels that there is a gross inadequacy of geologic and geohydrologic data, and that the conclusions presented in the DOE documents concerning Lavender and Davis Canyons lack sufficient evidence and are therefore highly speculative. The cost-intensive studies associated with site characterization studies are not justifiable based on the uncertainties of current information. Because the DOE is still trying to evaluate candidate areas without any real standard for obtaining and evaluating data, the state feels it must continue to oppose the actions and decisions made by the DOE in the nuclear waste repository siting process until such time as a comprehensive standard exists.



EXPLANATION

- The legend consists of five entries, each with a small square icon followed by text. The icons represent different land management areas:

 - STATE PARK OR HISTORIC SITE**
 - NATIONAL PARK OR RECREATION AREA**
 - U.S. FOREST SERVICE WILDERNESS AREA**
 - B.C.C. WILDERNESS STUDY AREA**
 - B.C.C. PROPOSED RAIL ROUTE ALTERNATIVES**



CANYONLANDS NATIONAL PARK AND SURROUNDING AREA

COMPILED BY

UTAH AUTOMATED GEOGRAPHIC REFERENCE
STATE LAND OFFICE, P.O. BOX 114
SALT LAKE CITY, UTAH 84114

HIGHSCALE 1:500 000

PRIMARY SOURCE MAP: OLD LAND STATUS AND AREAS OF RESPONSIBILITY 1877

SECONDARY SOURCES: ONTARIO 231,404 AND OTHERS
U.S.G.S. FOREST SERVICE MAPS

POTENTIAL IRRECONCILABLE CONFLICTS FROM
REPOSITORY DEVELOPMENT AT THE UTAH CANYONLANDS SITES

OVERVIEW

All of the sites in Utah that have been actively investigated for location of a high level nuclear waste repository (Salt Valley, Elk Ridge and Gibson Dome) lie adjacent to or are surrounded by national parks, monuments, forests or areas designated or managed as part of the wilderness system or wild and scenic river system. Yet after ten years of geologic and other studies, the DOE has failed to consider either the impacts of siting a repository in such close proximity to these designated areas or the impacts a repository would have on the regional identity.

Since 1980, when the first public meetings were held on the Paradox Basin studies, the general public, the state of Utah and others have repeatedly raised concerns about the impacts of the repository on both individual recreational units and on the region as a whole.

In fact, the only "parks" screening criteria used to arrive at the current phase of the DOE siting effort, in which "potentially acceptable sites" were identified, is the disqualifying factor that a repository could not be located inside the boundaries of a park, wilderness or other similar protected area. The impacts of park proximity were never identified or considered during the screening process which led to the identification of the Utah sites. Nor were they considered by the Department as a potential disqualifying factor.

Further, the basic environmental suitability of the two sites in Utah has never been determined. A cursory comparative evaluation of environmental impacts was all that was performed during location phase selection.

The two sites judged "potentially acceptable" are the Davis and Lavender Canyon sites and both overlay the Gibson Dome. These sites, by virtue of their proximity to Canyonlands National Park and by virtue of their location in the heart of the region popularly called the "Canyonlands" are now and will become increasingly identified as the Canyonlands sites. Such identification, when coupled with the real and perceived public apprehension about nuclear wastes will permanently effect the recreational image of Canyonlands N. P. and of the Canyonlands area. They may also permanently alter the nation's perceptions of the Colorado Plateau, which contains all of Utah's five national parks---Zion, Bryce Canyon, Capitol Reef, Arches and Canyonlands---as well as Grand Canyon and Mesa Verde National Parks.

Pre-Act screening efforts by DOE failed to address either regional impacts or the specific impacts on individual protected land units, and furthermore, little additional data has been collected by the DOE. The best example of this failure to collect adequate data is the failure to consolidate the impacts on the parks and protected areas into a comprehensive study, as first requested by the state in 1981 and repeatedly agreed to by DOE since 1982. This failure has occurred even though such data would be relatively inexpensive to collect and non-disruptive when compared to other studies such as core drilling and shaft construction.

A brief evaluation of the fourth working draft of the Environmental Assessments (EAs) on the sites and of the other supplemental data reveals the

grossly inadequate information base upon which DOE now plans to recommend sites for intensive characterization activities. The limited data that does exist suggests that both individual impacts (air quality, noise, visual resources and visitor enjoyment) and cumulative impacts may create irreconcilable conflicts with the intended uses of the parks and other protected areas and upon the region as a whole.

DOE's response to the issues created by potential disqualifying information of this kind has been the adoption of policies of unrealistic mitigation, piecemeal consideration, and deferral of meaningful analysis until the preparation of an Environmental Impact Statement when a site is recommended for repository construction later in the process. These policies threaten to bring unwarranted and unacceptable impacts to the Canyonlands area from site characterization activities; will postpone consideration of delicate environmental issues until our national siting options have been greatly reduced and intense political pressures have been brought to bear on the remaining sites; and, may foster legal challenges in response to the improper resolution of the issues relating to proximity to the protected areas mentioned above.

The state requests that Congress intervene to halt DOE from continuing unrealistic mitigation, piecemeal consideration, and deferral of meaningful analysis of impacts to parklands. DOE should be asked to, instead, prepare a comprehensive regional study on the impacts on parks and other protected areas prior to site selection for characterization. Several legal and technical justifications that support this request are contained in the body of the paper to follow.

ELEMENTS OF DISCUSSION

I. PROGRAM HISTORY AND BACKGROUND

- a. The site screening program
- b. Early park proximity concerns

II. THE SITES AND THE REGION

- a. The Canyonlands Identity
- b. The Golden Circle of parks and the Colorado Plateau

III. PROGRAM INADEQUACIES

- a. Inadequate data
- b. The DOE approach
- c. Hazards of continued deferral

IV. THE NEED FOR A COMPREHENSIVE PARKLANDS STUDY

- a. Technical reasoning
- b. Legal rationale
- c. Regional ties

V. CONCLUSIONS AND RECOMMENDATIONS

APPENDIX:

TESTIMONY ON PROGRAM DEFICIENCIES WITH THE DEPARTMENT OF ENERGY'S
CONSIDERATION OF ENVIRONMENTAL QUALITY SITING GUIDELINE 960.5-2-5

I. HISTORY AND BACKGROUND

a. The Site Screening Program

Though contact with the state of Utah was initiated in the mid 1970's, the focus of the program did not turn to the sites at Gibson Dome until 1982.¹

The first major field activities in the Paradox centered on the Salt Valley area² and this area was to remain, for awhile, the primary concern of both DOE and USGS who were performing drilling and other field studies. By the late 1970's, when an adverse geological condition was found at the Salt Valley site, the program focus in Utah switched to the Elk Ridge Area. Notably, the Salt Valley site, like Gibson Dome, was located directly adjacent to a national park, in this case Arches N. P.

By 1980 the focus of the DOE's program had shifted to the Elk Ridge location, which was also located adjacent to a unit of the national park system, in this case, National Bridges National Monument. In September, 1980, public meetings were held by DOE, with BLM and state participation. In 1982, based on the reasoning contained in ONWI-291, Paradox Area Characterization and Location Recommendation Report, the Elk Ridge site was deferred and Gibson Dome became the focus of all the studies in the Paradox.

(1) Both ONWI-291, Paradox Area Characterization and Location Recommendation Report, and UT-060-SJ-2-II, Environmental Assessment of DOE Proposed Location and Baseline Studies in the Paradox Basin, Utah, were released by DOE in 1982, the latter document in conjunction with the Moab BLM office.

(2) In July of 1978 the first hole drilling in the Paradox was initiated at Salt Valley (source, DOE's Chronology of Major Interactions Between DOE and the state of Utah).

On February 2, 1983, Secretary of Energy Donald Hodel, in accordance with the provisions of the Nuclear Waste Policy Act informed Utah Governor Scott Matheson that a "potentially acceptable site" existed in Utah. The only basis specifically listed for such determination was ONWI-291, Paradox Area Characterization and Location Recommendation Report.³

The factors used in ONWI-291 for screening the Gibson Dome area and determining suitable locations for potential sites were 1) depth to salt, 2) thickness of salt, 3) distance to faults, 4) distance to boreholes, and 5) area within (emphasis added) dedicated lands.⁴

The other primary basis for screening decisions at that time was the NWTS Program Criteria for Mined Geologic Disposal of Nuclear Waste, Site Performance Criteria, DOE/NWTS-33-2. The criteria state that 1) the site shall be located with due consideration to: potential environmental impacts; air, water, and land use; and ambient environmental conditions.⁵ The draft of the above document was available for public comment in January 1980. This is significant since the first public meeting DOE held in Utah was in September of 1980. Therefore, the criteria was established before any public awareness of the program in Utah. The criteria make no reference

(3) "Portions of the Gibson Dome and Elk Ridge locations have been identified by the Department as warranting additional characterization (Paradox Basin Location Recommendation Report, ONWI-291), and two sites within the Gibson Dome location, Davis and Lavender Canyons are preferred. Therefore, based on the information acquired thus far, we believe that Utah contains a potentially acceptable site." Letter, Secretary Hodel to Governor Matheson. Feb 2, 1984.

(4) ONWI-291, Paradox Area Characterization and Location Recommendation Report, pg. 4-15. Bechtel. August, 1982.

(5) NWTS Program Criteria for Mined Geologic Disposal of Nuclear Waste, Site Performance Criteria, DOE/NWTS-33 (2 NWTS Program Criteria for Mined Geologic Disposal of Nuclear Waste, Site Performance Criteria, DOE/NWTS-33 (2)). DOE. February 1981.

to park proximity as a guideline and the Park Service Organic Act is not listed as one of the laws to be addressed in considering land use conflicts.⁵

Further environmental considerations were made between the Elk Ridge and Gibson Dome areas. But these were only comparative--no determination of minimum environmental suitability was ever sought. For instance, in the area of archeology, DOE states: "The Elk ridge location contains archeological resources that promise to yield substantial information, ... while at Gibson Dome the site density appears to be low, [comprised] of mostly chipping stations with a few campsites."⁶ A more complete data analysis from the State Historic Preservation officer indicate that this is an extreme underestimation of cultural resources at Gibson Dome (see archeological testimony).

Similarly, for visual impacts only a relative comparison of the two sites is performed. The comparison states, "Canyonlands N. P. is west of the Gibson Dome location, ...Natural Bridges National Monument is located west of Elk Ridge, ...The Elk Ridge location has a greater potential for visual impact because it is situated on the open plateau, ... This inability to conceal a repository contributes to a preference for the Gibson Dome location."⁷

(6) ONWI-291, Paradox Area Characterization and Location Recommendation Report, pg 5:65. Bechtel. August, 1982.

(7) ONWI-291, Paradox Area Characterization and Location Recommendation Report, pg 5:65. Bechtel. August, 1982.

A final flaw with the screening process is that the data used for criteria and comparison factors in ONWI-291, Paradox Area Characterization and Location Recommendation Report, goes back further, to the regional studies phase.⁹ In effect then, all of the DOE's siting decisions related to park proximity to date have been based, to a large extent, on data developed on regional studies over four years ago.

The DOE's approach of using limited screening factors, employing comparative procedure for determination of overall environmental suitability and relying on sparse data which for the most part is drawn from literature searches does not substantiate the DOE statement that "considerations of environmental impacts were primary concerns during the site selection process."⁹

b. Early Park Proximity Concerns

The proximity of the Paradox study areas, locations and sites to dedicated lands has always been a major issue of concern at the Utah sites--perhaps the most controversial and pertinent of all the issues. Several comments regarding both general and specific concerns about the environmental impacts in the Paradox Basin were expressed during the comment period on the Elk Ridge

(8) Fourth Draft of The Working Papers For The EA, Davis Canyon, pg. 6-42. DOE. April 1984.

(10) "Data in this section have been derived largely from Bechtel National Inc. (1981) Regional Environmental Characterization Report for the Paradox Bedded Salt Region, Utah Study Areas." ONWI 291, Paradox Area Characterization and Location Recommendation Report, pg. 5:1. Bechtel. August 1982.

September 1980 Environmental Assessments.¹⁰ These should have been incorporated into the scope of work called for at Gibson Dome, particularly comments regarding impacts on wildlands recreation. The continued history and intensity of concerns related to dedicated lands can also be seen in transcripts and other records from subsequent meetings.¹¹ Internal correspondence indicates that DOE was also aware of the intensity of this issue.¹²

Concerned over the magnitude of the public concerns about the park, the state first asked for a park specific study in 1981.¹³ DOE promised on several occasions to complete the report requested by the state (see PROGRAM INADEQUACIES-Inadequate data).

(10) Citizen's and other comments other comments on Elk Ridge sent to BLM. September and October 1980.

(11) This list includes the public meetings held in September 1980, November of 1981, August 1982, May 1983, May 1984."

(12a) A trip report on public meetings Utah, November 10-13 , 1981, circulated widely in ONWI and DOE and transmitted to [Utah Nuclear Waste Repository Task Force] NWRTF stated that " none of the issues were surprising but the intensity of feelings about the location's (Gibson Dome) proximity to the national park " Memo, D. Keller, J. Mountain to internal DOE distribution. November 16, 1981

and, (12b) Preliminary comments analysis for location studies EA , Gibson Dome, indicate concerns over park expressed throughout the comments. Rhea, Moab BLM to R. Moleski ONWI and L Casey, DOE. April 22, 1982.

(13) "The critical concerns surrounding the National Parks are being considered in a number of different elements of the study. It may be that some critical concerns may fall through the cracks with such an approach. The Environmental Work Group of the Utah Nuclear Waste Repository Task Force suggests that the issue of concern surrounding the National Parks should be a separate study element". Letter, J. Byrne, Chairman, Utah Nuclear Waste Repository Task Force Environmental Work Group to Leslie Casey, Project Manager, DOE NWTS Project. November 12, 1981.

This concern about the parklands in the area is not surprising and many members of Congress have also sensed the dominant nature of this issue during testimony and hearings. What is surprising is the current level of data and analysis of this issue in the light of this repeated, intense concern. (see Data Inadequacies)

II. THE SITES AND THE REGION

a. The Canyonlands Identity

It is inaccurate to think of the two Utah sites under consideration as the Davis and Lavender Canyon sites, or the sites at the Gibson Dome location as they are officially denoted in the DOE's lexicon. A growing number of people know these sites as the Canyonlands sites--their significance, geographically and psychologically, is derived both from the neighboring Canyonlands National Park, in which both of these canyons originate and from the surrounding "Canyonlands" region which contains them. Later, this text will discuss the significance of Canyonlands as part of an even larger region, the Colorado Plateau. But for now it is sufficient to say that the sites are and will always be identified with Canyonlands and development of a repository at the Utah sites will adversely impact that identity.

This identity has been acknowledged and fostered for some time. This region is officially known to the Utah Travel Council, to tourists and to local residents, as the Canyonlands. A tourism display in the Utah State Capitol, beckons visitors to visit "CANYONLANDS U.S.A., ... a classic section of the world's red rock country, Canyonlands is a gigantic monument to the power of erosion." Significantly the display emphasizes and places the significance of the Canyonlands region in a national context. (See attached maps of the region and sites).

Ironically, "CANYONLANDS U.S.A." is defined in the display as "the two southeasternmost counties of the Beehive state.", precisely the same regional definition the Department of Energy uses in socioeconomic analysis of the sites. It is symptomatic of the inadequacies in the DOE program that the Department has failed to address the regional image question in a region which is economically tied to that image.

In Moab, Utah which lies north of the site in Grand County, evidence of strong local connections with the land-based regional identity is easily found. An evening river tour which never enters Canyonlands N. P. is just the same called "Canyonlands by Night." Other tourist related businesses are "Canyonlands Tours", "Canyonlands Campark", "Canyonlands Motel", and "Canyonlands Cafe.". The regional identity also exists in businesses not directly or indirectly related to tourism such as "Canyonlands Auto Parts", "Canyonlands Contracting" and "Canyonlands Texaco." In fact more businesses in Grand County contain the word Canyonlands than contain either the words Grand or Moab which are respectively the county and city political subdivisions.¹⁴ This lends evidence to the contention that the regional land-based identity transcends, these political boundaries. Similar regional identities can be readily seen in the towns of Blanding, Bluff and Monticello to the south. And a survey of the businesses in the region reveals an abundance of river outfitters, tour companies, motels and other businesses directly related to tourism. Any serious consideration of the impacts of a repository must include a comprehensive analysis of the impacts on the region.

(14) Moab Utah Phone Book. Continental Telephone Co.. June 1982.

b. The Golden Circle of Parks and the Colorado Plateau

Special Designations. The identity of southeastern Utah has been linked with the "Canyonlands" area. However this identity goes further still, for the Canyonlands is but one component of a much larger system of erosional landforms, the Colorado Plateau which is comprised of portions of Utah, Colorado, Arizona and New Mexico. Nearly seven million acres of national parks, monuments and recreation areas, state parks, and areas under wilderness protection lie on the Plateau. Over five million of these special designated acres are contiguous, straddling the Colorado and Green Rivers, symbols of the erosional forces that created the Plateau.

Utah's five national parks are among these units. Utah shares with California, the distinction of containing more national parks than any state in the lower forty-eight. All of these Utah national parks are concentrated on the Colorado Plateau in the southern half of the state. All have been nominated as World Heritage Sites under a United Nations program (UNESCO).¹⁵ Two other parks on the Plateau, Grand Canyon and Mesa Verde, have been approved as World Heritage Sites. In fact, so impressive is the Colorado Plateau, when taken in its entirety, that it was used as the example of a "thematic nomination", one manner in which lands are nominated for the World Heritage System. ¹⁵

(15) "Significant portions of certain, closely related properties may be nominated together to represent an important theme; i. e., rather than nominating individual examples of the erosional landforms of the Colorado Plateau, portions or all of Arches, Bryce Canyon, Canyonlands, Capitol Reef and Zion National Parks, and other areas may ultimately be proposed as a single thematic nomination."

A popular consciousness of these special qualities has grown as the number of protected areas has increased. The Plateau region was first dubbed the "Golden Circle" by former Secretary of Interior Stewart Udall who marveled in 1961 that the Utah, New Mexico, Arizona and Colorado parklands on the Colorado Plateau "contain the greatest concentration of scenic wonders to be found in the country if not the world."¹⁶

Tourism. The concept of the golden circle stuck and has became a central theme for both transportation and tourism development in southeastern Utah.¹⁷ Currently the Del Webb recreational corporation is marketing the same theme under a slightly different name, the "Grand Circle Adventure". The brochure on the Grand Circle reinforces a common theme--that a park experience transcend the boundaries of a park.¹⁸

(16) Congressional Record, pg. 1455. U. S. Senate. 1962.

(17a) "A wonderland with few access roads, ... centered around a point common to Arizona, New Mexico, Colorado and Utah are more than 40 outstanding scenic and natural attractions, a "Golden Circle" of parks. Most would be less than a half a day apart if there were access and connecting roads." Access roads for THE GOLDEN CIRCLE--America's Newest Playground, pg. 2. Utah Department of Transportation. 1966

and, (17b) "Utah is a land of unparalleled recreational opportunity, ... Within a 200-mile circle--the Golden Circle of the Southwest--are Utah's five National Parks." Official Highway Map. Utah Department of Transportation. 1979.

(18) "Canyonlands National Park--Needles District. (leaving) U. S. 163-191, ... Utah Highway 211 leads west through 38 miles of scenic canyon country, ... 12 miles in the roadway cuts through Indian Creek State Park, ... one of the best preserved and most intriguing collections of petroglyphs (indian writings) in the Southwest, ... the numerous inscriptions, ... span a thousand years, ... as you head west through a variety of colorful canyon formations, two historical landmarks, North and South Sixshooter Peaks, are plainly visible." If a repository is constructed at the Davis Canyon site it too will be plainly visible according to visual impact studies performed by the state of Utah.

Cultural Importance. Tremendous cultural importance exists on the Plateau and can be measured by any of a number of rules; through art, literature, American Indian sites and artifacts.

Novelists that have relied prominently upon this setting range from Zane Grey and Edward Abbey to John Nichols. A substantial number of photographic books, such as Slickrock and The Colorado Plateau, have been devoted entirely to the landforms on the Plateau and virtually every depiction of the full spectrum of our national wildlands is heavily devoted to the Plateau. Poets Gary Smith and Gary Snyder have drawn their inspiration on the Plateau. Song, personal histories, research reports, travel books--all have focused on the Plateau, and many specifically on the Canyonlands.

The legacy of historical and cultural sites representing American Indian cultures is perhaps the greatest cultural heritage found on the Plateau. It has been officially designated and protected on the national register of historic places and in national and state parks and monuments throughout the region, several such sites lie in close proximity to the repository, including Newspaper Rock State Park which lies respectively nine and twelve miles from the two Canyonlands sites, and adjacent to the only road access now existing.

4. Protection of the Plateau

Authorization has been denied for several major development projects proposed for lands on the Colorado Plateau. The list of denials includes, the Kaiparowits Coal Project, the Henry Mountains Coal Development, the Alton Valley Coal Project, and the Intermountain Power Project (the latter project was eventually sited off the Plateau). In all cases environmental concerns were a major issue and may have been the deciding issue. Though the state sent an extensive bibliography of documents covering these and other projects on the Plateau and specifically requested that the EBASCO study incorporate an analysis of the reasons for denial, the DOE refused to study these park proximity issues¹⁹ even though the outcome of other projects' impacts on designated lands would have direct application in determining if irreconcilable conflicts existed with siting a repository at the Canyonlands sites.

(19) "[State] Comment The [EBASCO] case study must consider all proposed projects in the Canyonlands area that were not licensed. [DOE] Response the objective of the case study is to determine how industrial developments, ... in proximity of the national parks, ... have affected the use of such parks, .. including the tourism industry of the neighboring communities. The licensing history of the projects proposed but not constructed in the Canyonlands area will not be included." Letter, Ted Taylor, DOE to L. Pickerell, Utah. June 28, 1984.

III. PROGRAM INADEQUACIES

Inadequacies with the manner in which the DOE program has addressed the parklands proximity issue can be roughly broken down into two areas: 1) inadequacy of the current data base and 2) inappropriate attempts to force decisions without adequate data. These inadequacies if continued will in turn result in deferral of important issues.

a. Inadequate data

The Park Specific Study. The most obvious example of inadequate data collection by DOE is the continued failure of the Department to perform a comprehensive assessment of localized and regional impacts on parklands and tourism in the area.

In 1981 the state of Utah first requested such a study. The justification (which is still a primary justification, see THE NEED FOR A COMPREHENSIVE PARK STUDY- Technical Rationale) was that result of the DOE's ongoing piecemeal approach to park impacts would be that "...some critical concerns may fall through the cracks."²⁰ In 1982, six months after the state request, DOE had committed to a park specific study.²¹

(20) "The critical concerns surrounding the National Parks are being considered in a number of different elements of the study. It may be that some critical concerns may fall through the cracks with such an approach. The Environmental Work Group suggests that the issue of concern surrounding the National Parks should be a separate study element." Letter, J. Byrne, Chair Environmental Work Group to L. Casey, Project Manager, DOE NWTS Project. November 12, 1981.

(21) "Environmental Topical Reports, ... Impact on Canyonlands National Park, 250 copies [will be] available October 28, 1982." Memo, S. Goldsmith ONWI to J. Neff, DOE, Reports Dealing With the Paradox Basin. April 27, 1982.

The commitment would be repeated throughout the years that ensued and was apparently made in response to citizen's during this period.²², ²³

Though a park study has yet to be produced the state raised several concerns about the outline for a proposed study contracted through EBASCO services by DOE.²⁴ In addition, though DOE had agreed to respond in writing to the concerns raised in a joint EBASCO, DOE, state of Utah, and National Park Service meeting, the response took over three months, an extreme delay considering the accelerated target date for release of the EA six months after the date of the meeting. When the response finally came from the Department it was clear that, although DOE had promised

(22) "Plans were initiated and progressed in the following areas, ...-The air quality impact analysis, ...-The Canyonlands draft impact report." Technical Progress Report for the Quarter, October 31-December, 1982 pg 68. ONWI/Battelle.

(23) Question (citizen), "1) are there any preliminary reports on what the [Environmental] impact would be in the southeast Utah area?; 2) Have any of the areas you are looking at been designated Wilderness Study Areas?; 3) Would this, or any other land classification, make any difference?"

Answer (DOE), "the potential impact of locating a repository adjacent to a national park is to be addressed in the next [location] study phase." Letter, J. Neff, DOE Program Manager, in response to a letter from S. Conrad, Citizen. October 26, 1981.

(24) Specifically, the proposed study failed to address "intangible values [derived from park visitors], ... [the "fast track" schedule for the last minute study] precluded the collection and analysis of essential data, ... existing data [in the areas of archeology, visual intrusion, night lighting, air quality, noise, socio-economics, and tourism] is insufficient to support a thorough park analysis [regardless of the analytical method employed], ... analysis is handicapped by incomplete or highly tentative planning of the major elements of the repository and of preliminary site characterization, ...and the proposed "case study" appears designed to minimize the protection mandated for national parks." Letter, L. Pickerell, Utah to J. Neff, Program Manager, SRPO-DOE. April 28, 1984.

a comprehensive parks impact study for two and a half years, the final product would not reflect the scope that the state had recommended nor would it be responsive to the central issues of parklands proximity.²⁵ In effect, no meaningful consideration of these issues will be reflected in the EAs for nomination of sites for characterization.

In the case of the Canyonlands sites this unresponsiveness, if continued, will defer consideration of a major question of national land use until long after the question is, to borrow from the language of the National Environmental Policy Act, "ripe" for consideration. Deferral may also force decision making in a future climate of extreme political pressure and greatly reduced national siting options.

(25) A criticism raised by the state: "The study fails to address the range of intangible values, perceptions, and experiences derived from the parks or the potential consequences to those intangible values from development of a repository." Letter, L Pickerell to J. Neff. April 28, 1984. It was answered with the response "DOE does not intend to address the psychological impacts of siting a repository in close proximity of a national park." Letter T. Taylor to L. Pickerell. June 28, 1984.

Specific Examples of Inadequate Data. The list of inadequate data begins with the consideration of the areas that DOE apparently feels do not need to be investigated. Thus far DOE has largely limited consideration to only three types of impacts on dedicated lands--air quality, noise, and visual impacts. The state has maintained that impacts to the adjacent Canyonlands National Park and other designated areas in the region extend past beyond the scope of these three areas. The following impacts have either not been addressed at all or with insufficient information:

1. Impacts on visitor use such as access restrictions, crowding, loss of solitude, conflicts over appropriate recreation uses in the parklands, changes in resource quality affecting expectations and producing dissatisfaction with recreation experience in Canyonlands and other recreational areas;
2. Impacts on the identity of the region particularly on tourism, changes in lifestyle, impacts on local industries such as jeep tours and river running, impacts on national appeal to tourists, river running, avoidance of the area/region by current users;
3. Postclosure security requirements, infrastructure and institutional designations. Impacts here include use of the rails and utility infrastructure after the repository has been closed, the impacts of special land designations to warn future generations not to drill [such a warning would increase the negative impacts on the regional identity];
4. Revegetation, wildlife, endangered species, development of mitigation techniques (see Testimony on Vegetation/Wildlife);

5. Study of other proposed projects in the region as requested by the state. DOE has declined to study this issue even though it has a direct bearing on the determination of "irreconcilable conflicts" under the pre and post closure environmental guidelines.

The second category of data inadequacies centers on the areas that DOE claims it has concentrated on even though the state feels there are still extensive data gaps:

1. Visual Impacts. No site specific data has yet been sent to the state on night illumination, on visual impacts of trains day or night (the rail route analysis was restricted to the rails themselves), and on visual impacts along the stretch of the rail route from Harts Draw to the repository (this is a critical stretch where the rail route will cross the entrance road to Canyonlands National Park). Furthermore, analysis of mitigation of visual impacts is at this time unsubstantiated. For instance, the BLM Visual Resource Management guidelines require determination of possible mitigation only after an analysis by a "certified landscape architect". DOE has, without the benefit of this certified analysis determined that the visual impacts of the rail route along the Colorado river can be mitigated. In addition, all visual impacts are based on preliminary designs which are still changing. And, finally expected impacts have never been quantified so it is impossible to determine the overall visual impacts or whether these impacts can be mitigated;²⁶

(26) These insufficiencies are based on data gaps evident in ONWI-454, Visual Aesthetics Study: Gibson Dome Area, Paradox Basin, Utah.

2. Air Quality (see also testimony entitled "Air Quality Issues"). DOE committed to publishing an air quality document on repository operation and construction by August 1, 1984.²⁷ However, no document has yet been produced on air quality impacts of the repository, or of secondary emissions of site characterization activities;

3. Noise. DOE committed to publishing a noise analysis for repository operation and construction by August 1, 1984.²⁷ As in the case of air quality data the only data the state has seen on this is for shaft construction, the evaluations were based on one shaft [a second shaft has been added to the plans] extrapolated from a 6-day baseline [a years worth of data is the norm] and modeled based on a site in Texas. Only one of the two Canyonlands sites, Davis Canyon was evaluated in the report.²⁸ Current indications are that no new data will be gathered prior to release of the EAs. All evaluations will be modeled using the inadequate existing information.

(27) From Catalog and Procedures for Requesting Unanalyzed and unprocessed Data/Information form the NWTS-Salt Repository Project in Columbus, Ohio.

(28) From Paradox Basin Noise Study, Field Measurement of Ambient Noise Levels and Predictions of Exploratory Shaft Construction Noise Levels, Davis Canyon, ONWI-60. Bechtel Group Inc. April, 1983.

b. The DOE Approach to Insufficient Information

The DOE response to this lack of data has been deferral, piecemeal consideration and adoption of unsubstantiated mitigation strategies.

Deferral The clearest evidence of the near total deferral of park related impacts is seen in ONWI-519. In this document DOE in effect states consideration of virtually every concern raised by the public and the state during the May 1983 scoping hearings--air quality, land use, water, noise, aesthetics, archeology, biota, and park proximity will be deferred until after sites have been selected for characterization [multiple shaft construction].

For example:

Land Use: "detailed information, ... requires completion of detailed engineering plans and site investigations. This information will be included in an Environmental Impact Statement;"²⁹

Air Quality: "studies are in progress to predict the air quality impacts that would accompany exploratory shaft drilling, ... and repository operation, ...The results of these baseline investigations , ... will be incorporated in an Environmental Impact Statement;"²⁹

Noise impacts.: "The DOE is currently conducting studies to measure the existing sound levels, ... and evaluate the potential noise impacts of repository construction and operation at each site, ... the results of these studies will be included in an Environmental Impact Statement;"²⁹

(29) From Response Report from U. S. Department of Energy Hearings on Proposed Salt Site Nominations, BMI/ONWI-519

Impacts on Dedicated Lands: "Repository siting and design considerations have a high priority to assure protection of the environment. Details on mitigative measures needed at any site must await formulation of engineering plans. This information will be included in the Environmental Impact Statement;"²⁹, pg 111

Aesthetics: "Analyzing possible visual impacts of a repository, ... requires completion of site characterization plans, ... and the formulation of engineering plans. Such information will be included in the Environmental Impact Statement."²⁹, pg. 106

Unrealistic Mitigation The other manner in which DOE is avoiding the consideration of important issues is the unrealistic reliance on mitigation. The DOE view that mitigation can be accomplished by avoiding, minimizing, rectifying, reducing or compensating, leads to the appearance that virtually anything can be mitigated.³⁰ This philosophy is echoed in the consideration of visible impacts of rail routes which assumes mitigation to avoid recognized

(30) "Mitigation (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree of magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environmental; (4) reducing or eliminating the impact over time by preservations and maintenance operations during the lied of the action; or (5) compensating for the impact by replacing or providing substitute resources or environments." Preliminary EAs, 4the Draft, pg B-27. June 5, 1984. DOE.

impacts will be effective or that alternative routes can be selected even though the costs and geologic hazards associated with such routes have not been discussed.³¹

Such a view of mitigation is unrealistic and allows the DOE to continue deferral of important siting issues merely by assuming they can be mitigated.

c. Hazards of Continued Deferral

To move ahead with siting decisions based on the current inadequate levels of environmental and socioeconomic data threatens to waste a substantial amount of financial resources which might be better used in other siting endeavors.

This is particularly inappropriate in light of the relatively small commitment of monies that would be required to complete an extensive, comprehensive analysis of the impacts on dedicated lands in the region.³² Such studies would also be relatively non-disruptive to the environment.

Continued deferral would have several other detrimental effects. First it could automatically place a site near Canyonlands in the next round of repository consideration and force decisions regarding environmental quality to be made in a climate of political expediency. Once a site has been

(31) Visual Aesthetics Study: Gibson Dome Area, Paradox Basin, Utah.
ONWI-454. March 1984. Bechtel Group Inc.

(32) For instance the cost of a 52-week meteorology and air quality program, one of the most expensive of the environmental data gathering activities, was estimated at \$ 182,399 in 1982. Memo, F. Moleski ONWI/Battelle Paradox Project Manager to W. Madia, ONWI/Battelle. May 4, 1982.

selected for characterization there is no guarantee by DOE that any process will be followed in which site characterization would cease at a site based on new available environmental or other evidence.

The selection of the site for characterization may also mean that DOE could continue to defer answering the parks question by deferring the entire site for consideration as the site for subsequent repositories.³³ Continued consideration will mean continued uncertainties in the management objectives of the area and perhaps the region.

(33) Section 112 of NWPA allows for the continued consideration of a site chosen for characterization but not selected as the first repository site.

IV. THE NEED FOR A COMPREHENSIVE PARKLANDS STUDY

a. Technical Rationale

Every aspect of the siting program is associated in some manner with impacts to parks and other protected areas. Some are obvious, for instance visual impacts are largely impacts to viewpoints in and around Canyonlands National Park; impacts from night illumination are largely impacts to vistas in Canyonlands and Glen Canyon National Recreation Area; air quality impacts are largely impacts to Class I air in Canyonlands N.P.; tourism impacts are largely impacts to users of the surrounding national parks, wilderness areas and national forests and to users of the stretches of the Colorado and Green Rivers that have been recommended for wild and scenic river designation. Similarly the transportation and utility systems may have impacts in terms of visual impacts, noise, air quality impact from construction and cut and fill operations, etc..

Other impacts are indirectly connected. Greater use of the area may precipitate vandalism to primitive rock art, Indian ruins and other cultural resources.

The underlying point is that the impacts upon the parks create a vast technical web reaching across several different siting factors and issues. This complex web of impacts is precisely the reason the state first requested a parks specific study. It may also be seen in the BLM statement in February 1980 that "[p]iecemeal approaches to carrying out activities for DOE's project are fast becoming overwhelming". In addition, we have no way of assessing the actual impacts of the project if we are to receive only small portions at a time of the total picture.³⁴ This categorical problem still exists. Park impacts have been addressed piecemeal in various documents. This fragmentation is so pervasive that it is difficult for even the most informed reviewer to piece together the entire puzzle and gain an understanding of the overall impacts to parks and protected areas. A comprehensive parklands report would alleviate this inadequacy.

b. Legal Justification

Several legal considerations also point to a need for a region oriented park study.

(34) Memo, K Rhea, Moab BLM to State Director, BLM-Utah, pg. 1. February 14, 1980.

Section 112 of the Nuclear Waste Policy Act (NWPA) identifies several important concerns of Congress, justifying the need for a park specific study. A point by point analysis follows:

--The guidelines used for site selection "shall specify factors that qualify or disqualify any site, ... including factors pertaining to proximity to components of the National Park System, ... the National Wild and Scenic Rivers System, the National Wilderness Preservation System, or National Forest Lands (NWPA Section 112 (a))."

All of these recreational units are found in the region. Though Canyonlands National Park is geographically the closest, all recreational units in the region will to a degree be impacted.

--The Environmental Assessment which shall accompany sites nominated for characterization "...shall include a detailed statement of the basis for [nomination] and of the probable impacts of the site characterization activities planned for such site, (NWPA Section 112 (b)(E))."

According to the preliminary EA's on the two Utah sites, the term "site characterization activities" translates into an extensive exploratory drilling program which will take place along the entire eastern boundary of Canyonlands. Two shafts will also be constructed to a depth of 3,000 feet. If the site in Davis Canyon is selected shaft construction would proceed within a half mile of Canyonlands National Park. Several boreholes would lie equally close to the park. Further DOE has identified potential drilling sites inside Canyonlands N. P. The state maintains these activities would have

adverse impacts on the region's parklands and would be an integral part of a larger study covering impacts from the other phases. No "detailed statement" will be possible without a detailed analysis upon which to base the findings in such a statement.

The emphasis on Canyonlands here should by no means imply that other impacts would not occur. For instance, the visual impacts would be equal or greater on elements of the BLM Canyon Rims Recreation Area. From these vantage points on the rim to the east of the Canyonlands sites, drilling and other exploration activities would be evident as visitors look out across 200 foot meteorological data gathering towers and headframes for the exploratory drilling equipment.

--The Environmental Assessment which shall accompany sites nominated for characterization "shall include, ... an evaluation of whether such site is suitable for development as a repository under each guideline that does not require site characterization as a prerequisite for application, (NWPA Section 112 (b)(E)(ii))

Guidelines not requiring sites characterization as a prerequisite to application are those that do not contribute to establishing the geologic conditions at a site and predominantly concern surface conditions.³⁵

(35) Chapter 6, Statutory Environmental Assessment for Lavender Canyon Site, Paradox Basin, San Juan County, Utah-Fourth Draft, pg. 6-6. DUE. June 5, 1984.

None of the guidelines applicable to impacts on parks require site characterization--an issue the state has raised throughout scoping and the guidelines process. Such consideration should not be deferred until site characterization. The impacts not contingent on characterization should be evaluated in a detailed study on regional and local impacts prior to release of the EAs.

--The Environmental Assessment which shall accompany sites nominated for characterization "shall include,... an evaluation by the Secretary of the effects of the site characterization activities at such site on the public health safety and the environment, (NWPA Section 112(b)(E)(iii)."

This section supports a detailed study of impacts on the environment in and around the parklands. These impacts are documented in other elements of this testimony.

--The Environmental Assessment which shall accompany sites nominated for characterization "shall include, ... an assessment of the regional and local impacts of locating the proposed repository at such site (NWPA Section 112(b)(E)(vi))."

The links between this provision of the law and the need for a specific analysis of impacts on regional designated lands and on regional identity are implicit.

--The Environmental Assessment which shall accompany sites nominated for characterization "shall include, ... a discussion of alternative activities relating to site characterization that may be undertaken to avoid such impacts (NWPA Section 112 (b)(E)).

The DOE view is that mitigation can be accomplished by avoiding, minimizing, rectifying, reducing or compensating; virtually anything can be mitigated.³⁶ This view is echoed in the consideration of rail route visual impacts which assumes without any substantiation, mitigation measures to reduce impacts along the preferred Colorado River rail route will be effective. According to DOE if this assumption is not correct an acceptable alternative will be found.³¹

Such a view of mitigation is unrealistic and allows the DOE to continue deferral of important siting issues merely by assuming they can be mitigated. Detailed consideration of mitigation, as called for in this section of NWPA would either substantiate or invalidate these assumptions. Also, the impacts on parks must be specifically outlined if mitigation before the determinations of mitigation under this section can be made--without first analyzing the park impacts in an extensive, comprehensive document, it will be impossible to determine if the overall impacts on designated lands listed in NWPA can in fact be mitigated.

(36) "Mitigation (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree of magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservations and maintenance operations during the life of the action; or (5) compensating for the impact by replacing or providing substitute resources of environments." Appendix B for The Fourth draft of The EAs, pg B-27. June 5, 1984. DOE.

One last aspect of the legal justification for preparation of a park specific study is recall of an exchange between Representatives John Seiberling and Morris Udall, who drafted the language regarding park proximity. The exchange suggests strong congressional intent to protect parks and other dedicated lands:

Mr. Seiberling. [I] helped in the drafting of the legislation, ... if one of the identified alternate sites were adjacent to an area, ... such as a national park, is it not the intent that it should be designated as a site only as a last resort if none of the other alternative sites satisfy the essential criteria for the repository?

Mr. Udall. Yes, I would agree with the gentleman.³⁷

c. Regional Ties

The final argument for preparation of a parklands study is evidenced in the strong connections between the communities of southeastern Utah and the regional image provided by the surrounding lands. In general, impacts from the repository can be seen as impacts on the Canyonlands. The park proximity issues may be the largest most important issue at the Utah sites. A detailed report on the impacts to national parks, forests, monuments and other dedicated lands in the region is long overdue.

(37) Congressional Record, pg. 8778. December 2, 1982.

V. CONCLUSIONS AND RECOMMENDATIONS

a. Conclusions

Even in the face of gross data deficiencies there is strong evidence to suggest that irreconcilable conflicts with Canyonlands National Park and other protected lands near the Utah sites may be found. For example:

- 1) Screening level reviews of the proposed 12 foot exploratory shaft determined that the National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) increment levels would be violated in Canyonlands National Park (from Utah testimony entitled "Air Quality Issues").
- 2) A preliminary survey of park visitors showed that 82% of the visitors polled responded negatively to the construction of a repository adjacent to Canyonlands National Park, indicating that it would affect future visits and that they would be less likely to return.³⁸
- 3) A preliminary noise document covering only the impacts from the exploratory shaft indicate that under most conditions construction noise levels will be audible at "some points along the eastern boundary of Canyonlands National Park."³⁹

(38) Letter, Pete Parry, Superintendent, Canyonlands National Park to Juline Christofferson, Utah Governor's Office. November 18, 1983

(39) Paradox Basin Noise Study, Field Measurement of Ambient Noise Levels and Prediction of Exploratory Shaft Construction Noise Levels, Davis Canyon, pg. i. April 1983.

- 4) After closure of the repository future generations will be made aware of the repository to prevent inadvertent human interference. To accomplish such notifications, DOE apparently plans on using permanent, obvious site markers and widely disseminated written notices and records in several languages.⁴⁰ The need to notify the nation about the existence of radioactive wastes in the area may bring permanent adverse impacts to the recreational image of the area.
- 5) The preliminary visual impacts study indicates the DOE's preferred rail route would be visible from all but one of the overlooks evaluated. The repository would be visible from portions of the back-country in Canyonlands.⁴¹
- 6) The possibility that adequate site characterization may necessitate a drilling program inside Canyonlands National Park is mentioned in the fourth draft of the working papers for the EAs.⁴² Such exploration within park boundaries might, in and of itself, represent an irreconcilable conflict with the intended uses of the park.

(40) ONWI-454 Visual Aesthetics Study: Gibson Dome Area, Paradox Basin, Utah
Pp 19, 20 and 51. March 1984.

(41) From BMI/ONWI-537, Reducing the Likelihood of Future Human Interference Activities That Could Affect Geologic High-Level Waste Repositories. May 1984.

(42) Chapter 4, Statutory Environmental Assessment for Lavender Canyon Site, Paradox Basin, San Juan County, Utah-Fourth Draft, Section 4.1, Site Characterization Activities. DOE. June 5, 1984 and; Chapter 4, Statutory Environmental Assessment for Davis Canyon Site, Paradox Basin, San Juan County, Utah-Fourth Draft, Section 4.1, Site Characterization Activities. DOE. June 5, 1984

b. Recommendations

In light of the extensive evidence contained in this and other testimony by the state of Utah regarding DOE's failure to collect and evaluate an adequate amount of data, the following recommendations are made:

- 1) A comprehensive report assessing the site specific and regional impacts of siting a repository at the Canyonlands sites is required to fulfill the intent of the NWPA and to fully evaluate the guidelines which do not require site characterization as a prerequisite for their application.
- 2) A national survey be commissioned to determine whether a repository site next to a national park is acceptable to the public
- 3) Request congressional clarification to determine whether it was their intent that a repository be sited next to a national park or other unit under special natural resource protection.
- 4) Public scoping hearings be conducted to further identify issues of concern on the siting of a repository at Canyonlands and that the issue identified in these hearings be used as the basis for the studies and surveys recommended above.
- 5) The draft studies, recommended above, be made available for public review and comment consistent with the applicable public process.
- 6) The DOE timetable for decisionmaking be adjusted to allow time for these recommendations to be carried out prior to the decision to select sites for characterization.

APPENDIX

TESTIMONY ON PROGRAM DEFICIENCIES
WITH THE DEPARTMENT OF ENERGY'S CONSIDERATION
of
ENVIRONMENTAL QUALITY SITING GUIDELINE 960.5-2-5

Introduction

A. The Environmental Assessment - fourth draft

The EAs were originally scheduled for release, as draft documents, in August 1984, but the EA timetable has slipped until now they are expected sometime in November 1984. The state has received pre-draft EA's to enable us to only begin a review process and to become familiar with the basic format and style of the document. Even though these pre-draft EA's are considered to be preliminary and subject to change there are many criticisms of style and content which can be made now.

Assumption used and data uncertainties identified in these documents which were used in applying the guidelines can be discussed to illustrate what we believe to be basic deficiencies in the DOE siting program. In Chapter 6 the EAs are supposed to evaluate the "Suitability Of The Nominated Site For Site Characterization and For Development As A Repository." The evaluation of the site using the guidelines is broken up into two categories: those guidelines which require site characterization in order to apply them and those guidelines which do not require site characterization as a pre-requisite for

their application. The EAs assume that the information required to apply the guidelines which do not require site characterization may be obtained at any time before or during site characterization. The EAs state (p.6-7) that "the appropriate question..... is whether, based on an evaluation of those guidelines, the site is suitable for further study. For these guidelines it is only at the completion of site characterization that the question of suitability for repository development can be addressed."

This statement, although not stated as an assumption, nevertheless, is an assumption by DOE. The guidelines which do not require site characterization to be applied contain Disqualifying Conditions and therefore must be fully evaluated before site characterization. Furthermore, the statements quoted above appear to be in contradiction with each other. On the one hand applying these guidelines will result in a determination as to whether "the site is suitable for further study." On the other hand, the next statement says that it is "only at the completion of site characterization that the question of suitability for repository development can be addressed." However, if the Disqualifying Conditions in these guidelines can be shown then further study for suitability of the site is neither necessary nor required. Therefore, a complete evaluation of those guidelines is essential to avoid a needless and unacceptable environmental impacts due to site characterization activities.

The state of Utah has, since the Gibson Dome location was identified as having Potentially Acceptable Sites (PAS's), repeatedly urged DOE to conduct studies and evaluations of impact on the Canyonlands National Park, the surrounding recreational lands and the tourism industry due to repository development at the Utah PAS's. The state has consistently maintained that

development of a repository at one of the Utah "PAS's will produce an irreconcilable conflict with the prior establishment and use of the Canyonlands National Park and regional tourism and that this demonstrates the Disqualifying Condition under these guidelines. The DOE, however, has to date, refused to conduct the necessary studies to make a determination of whether this condition is met or not, as indicated in the pre-draft EAs.

On p. 6-9 of a pre-draft EA it states "The evaluation process (of the guidelines not requiring site characterization) is not meant to imply that sufficient information is available at this time to fully evaluate compliance of the site with the intent of these guidelines." This assumption by the DOE is entirely unfounded. Repeated delays and refusals by the DOE to respond to the state's requests for studies of the Park Issue have contributed to this situation. There has been plenty of time and opportunity for the DOE to gather the necessary information to make a determination of the Disqualifying Condition as required in the EA, but they have not chosen to do so. The assumption quoted above from p. 6-9 is qualified by the statement which follows that "The distinction (to fully evaluate compliance of the site with the intent of these guidelines) is based solely on the definition of site characterization." But, "site characterization" so defined in the Act is designed "to establish the geologic condition and the ranges of the parameters of a candidate site relevant to the location of a repository." There is nothing in this definition which implies that the DOE is not required to obtain sufficient information to fully evaluate compliance of a site with the intent of the guidelines which do not require site characterization. None of the information required to accomplish this task needs to be derived by site characterization activities. It can all be obtained prior to site

characterization and as the state has repeatedly urged must be done so.

Environmental Quality Guideline 10CFR 960.5-2-5

This technical guideline is to be evaluated to fulfill the intent that "the repository shall be located so that public health and welfare and environmental quality will be protected now and into the future, and significant adverse environmental impacts can be successfully mitigated" (p. 6-42, Davis Canyon EA).

It is evident from this statement that if significant adverse environmental impacts can not be successfully mitigated then the site fails to satisfy the Qualifying Condition under this guideline. However, nowhere is "significant adverse environmental impact" or "successfully mitigated" defined so as to eliminate ambiguity in interpreting the application of this intent.

The statement is made in the discussion of the Evaluation Process (p. 6-42 Davis Canyon EA) that "... considerations of environmental impacts were primary concerns during the site selection process." The evidence to support this statement is lacking, however. Under Assumptions and Data Uncertainties (p. 6-45 Davis Canyon EA) it states that "Onsite studies must be performed during detailed site characterization to obtain specific information on air quality,, aesthetics, (etc.)..." and "Certain assumptions are necessary because of the limited site - specific data."

If environmental impacts were primary concerns during site selection and presumably during development of the EA's then why is it that little, if any

new data were collected to evaluate these issues? The state has, since the location phase of on site selection been communicating to DOE the need to collect relevant data on the environmental and park related issues which are of great concern to us and which will present the greatest degree of conflicts with locating a repository at Gibson Dome. For instance there is no excuse for DOE not to have collected the 52 weeks of air quality data needed by the state permitting process since it has been over two years from the first official notification of this requirement. To date DOE still has not complied with the state's request for an air quality monitoring plan.

Can DOE explain why onsite studies (of environmental impact issues) must be performed onsite during detailed site characterization in order to evaluate and apply guidelines which do not require site characterization in order to assess site suitability? Under the Environmental Guideline 10CFR 960.5-2-5 the Qualifying Condition must be met and the Disqualifying Condition must not be found. The state of Utah has on many occasions stated that an irreconcilable conflict exists between the purposes, values and uses for which Canyonlands National Park was created and using the Gibson Dome for a repository site. This condition if found constitutes a Disqualifying Condition and the site is not to be considered further. Also, we have stated that there will be significant environmental impacts which cannot be successfully mitigated and therefore the Qualifying Condition cannot be met.

In either case the issue could be completely evaluated with all the necessary data collected without detailed site characterization, as defined by the Act, but the DOE has chosen not to do this. Instead, these studies and evaluations will apparently be done concurrently with site characterization.

Favorable Condition

Although the EAs we reviewed only are only pre-draft documents and are subject to revision we can use them to illustrate the points made above. There are two Favorable Conditions to be analyzed. One is found and one is not found. The one not found refers to whether significant adverse environmental impacts can be mitigated to an insignificant level. The EAs state that this condition refers to only three types of impacts; air quality, noise, and visual impacts. The state has maintained that there are more than three. Such as impacts on visitor use, (at Canyonlands N.P.), i.e. access restrictions, psychological factors affecting expectations of primitive and unconfined recreation and psychological impacts related to a change in identity of the Canyonlands area as a pristine, primitive park, security operation permanent land use changes, and discussed wilderness values.

Potentially Adverse Conditions

Although a favorable condition is not found and the EA states that there will be significant adverse environmental impacts which "cannot be mitigated to an insignificant level", a potentially adverse condition is not found because apparently, these impacts can be mitigated but not to an insignificant level. This is an ambiguity in the application of the guidelines. Without more detailed guidance and definition of terms these conditions of the guidelines are ambiguous and the findings are arbitrary in that the findings are merely state (in the absence of more specific data) DOE's opinion rather than conclusions resulting from detailed analysis.

A potentially adverse condition (number 3) is found for the Davis Canyon site because of its proximity to Canyonlands National Park. However, the DOE then concludes, without analysis or supporting documentation which addresses the many specific issues raised by the state, that, "there do not appear to be any irreconcilable conflicts with activities undertaken in the Park." This particular issue is the subject of a Disqualifying Condition but not this Potentially Adverse Condition number (4) is not found according to the EA (Davis Canyon p. 6-55). The finding that only main impacts, resulting from site characterization activities is disputed by the state. There is insignificant detail in the document to evaluate impacts due to site characterization, particularly transportation impacts on the Newspaper Rock State Historical Monument on Utah Highway 211. This issue also includes Potentially Adverse Condition number (5).

Disqualifying Conditions

According to the pre-draft EA (Davis Canyon) the first two disqualifying conditions are not found while it states that the third "is not expected." All three of these conditions rely on the findings stated for the Favorable and Potentially Adverse Conditions discussed above. Due to the plans pointed out above, in the analysis of these conditions the finds for the Disqualifying Conditions are also planned.

The first disqualifying condition refers to environmental impacts which would result in unacceptable adverse impacts which cannot be mitigated by reasonable measures. The conclusion is that there are no environmental impacts which cannot be mitigated to acceptable levels. However, the

Favorable Condition (2) was not found because "...significant adverse environmental impacts....cannot be mitigated to an insignificant level." What is the relationship between the terms "insignificant level" and "mitigated to acceptable levels?" The most that can be concluded from the analysis is that the Disqualifying Condition (1) cannot be determined. This follows from the substantive challenges made above on the Potentially Adverse Conditions conclusions and the stated lack of specific data upon which the environmental impact analysis depends.

Disqualifying Condition (2) is also not found because the document concludes that "...no part of the site is located within the boundaries of a component of the National Park System..." However, the EA states (p.4-141 Davis Canyon) that boreholes may be required to be drilled within the Park boundaries. This would possibly change the finding for this disqualifying condition. Therefore, the conclusion for this disqualifying condition is premature and does not reflect the potential existing that it may be found.

Disqualifying Condition (3) "is not expected" to be found (p. 6-58 Davis Canyon) according to the document. This conclusion is based on the stated conclusions for the other conditions under this guideline and chapters 4 and 5 of the EAs. Unless the issues raised in the review are thoroughly analyzed and supported by data this conclusion is also not qualified.

Given the deficiencies, discussed above, in the application of the Environmental Quality Guideline 10 CFR 960.5-2-5 there can be no conclusion that the Qualifying Condition "is expected to be met" as stated in the EAs.

As stated (p. 6-59 Davis Canyon) "The disqualifying condition on land use is not found based on available information", this may be true, however, we have repeatedly urged the DOE to obtain the necessary information. The "available information" is entirely inadequate to fully evaluate the parameters of this guideline as conceded in the EAs.

This guideline along with all other guidelines which do not require site characterization must be fully evaluated, including any and all data generation and analysis required, before site characterization activities are undertaken. Because these guidelines contain disqualifying condition they must be fully evaluated before site characterization. Otherwise extensive costs and environmental impacts will be incurred needlessly if after the fact of disqualifying condition is found. The DOE could not justify such a waste of money and resources if this situation were to occur.

Mission Plan

The Mission Plan fails to address most of the substantive issues raised by the state of Utah with respect to siting a repository near Canyonlands National Park. This is particularly relevant in volume II in the discussion of Plans for Obtaining the Information Needed to Site, Construct, and Operate a Repository and Site Characterization; chapter 2 and 7.

The discussion on Environmental Studies in chapter 2 (p. 2-16) states that "a report on repository impacts on the Canyonlands National Park will be prepared." This report, which we have repeated urged be done, can only be useful if prepared for analysis in the Environmental Assessments, prior to site characterization activities. Indeed this report and its findings must

form the basis for the analysis when applying the guidelines; particularly the Environmental Quality Guidelines CFR10 960.5-2-5, which does not require site characterization in order to evaluate it. The environmental studies will be developed and conducted "once site characterization begins."

It is just this situation which we find the most difficult to understand. Why wait to do the necessary environmental studies until site characterization when there are disqualifying conditions under guidelines not requiring characterization which can and must be evaluated before site characterization? We maintain that there are potentially disqualifying factors present at the Utah sites which can be fully evaluated before site characterization. The Mission Plan gives only a cursory view of how the DOE intends to accomplish the mission of evaluating potential environments impact issues. Most of the substantive data collection and analysis is deferred to the site characterization phase without discussion or rationale for doing so. The so called "Park Study" has, according to unidentified sources, already been done, but, will not be available for review by th state or public, if at all until after the EA's are released. Since much of the analysis of the "Park Issue" depends on this Park Study why is it's release being delayed?

The particular significance of the Utah sites is a point we have consistently tried to communicate to the DOE. We are concerned with not only the impacts on Canyonlands National Park, but also how locating a repository next to it will affect how the public views the identity of the entire region surrounding the park. The potential Utah sites are located on the Colorado Plateau which is a unique physiographic province encompassing parts of Utah, Colorado, New Mexico, Arizona and Nevada. This uniqueness is partly

illustrated by the fact that the Colorado Plateau contains at least 8 national parks, 2 national recreation area, 11 national monuments, 35 area recommended for wilderness (many of these areas are in legislation recently passed by the congress designating than wilderness areas) and 9 state parks. In total these areas include approximately 7 million acres of outstanding scenic and recreational resource lands on the Colorado Plateau. These statistics indicate that the Colorado Plateau is one of the most significant scenic and recreational resource areas of the United States and maybe the world. This last point follows from the fact that all the national parks on the Colorado Plateau have been included on the Indicative Inventory of Potential Future U.S. Nominations to the World History List. This list is composed of cultural and natural resource properties which are unique to the world as a whole.

The Mission Plan, however, describes the Colorado Plateau, in chapter seven, as being "...characterized by rugged terrain and classic desert land form." The many outstanding scenic and recreational resource values present on the Plateau as indicated by the National Parks, Monuments, wilderness areas and study areas and other designated lands certainly attests to its uniqueness as a region that further proof is required?

The site descriptions, however, do not even adequately describe the vicinity of the potential repository sites in Utah. The discussion of these recreational resources should include a description of uses, both present and anticipated, the proximity to the PA's and a good readable map showing locations and relationships of these areas in a regional context. Neither the Mission Plan nor the pre-draft EA's give adequate consideration to the regional site values and uses which must be an essential part of the siting

process.

Other important issues not adequately addressed in the Mission Plan involve the need for operational and post-closure security plans at a repository; monitoring plans, both on-site and off-site and; post closure land use constraints and impacts.

HISTORY OF THE PROJECT AND THE STATE'S
PARTICIPATION IN THE REPOSITORY
SITING PROCESS

On May 4, 1984, Utah Governor Scott M. Matheson, following four years of active participation in the Department of Energy's nuclear waste management program, took a position of strong opposition to further consideration of the Canyonlands site in southeastern Utah for location of a nuclear waste repository.

While recognizing the national need for a solution to the disposal of nuclear generated wastes, the Governor's frustration over the refusal of DOE to develop and implement a credible site selection program providing meaningful state participation forced his opposition to the site. The history of the state's interaction with the DOE documents the Governor's repeated efforts to achieve a workable process for resolution of the problem, and the legitimacy of the Governor's frustrations with the program.

In 1982, Congress, in an attempt to provide a solution to the waste disposal problem, enacted the Nuclear Waste Policy Act, legislation designed to implement a program based on deep geologic disposal. Perhaps the most debilitating element of the entire federal program prior to NWPA, has been its underlying philosophy, a philosophy characteristic of the nuclear industry, that all legitimate problems are merely technical problems with "engineerable" solutions. There has been substantial opposition within federal energy

bureaucracy to the development of comprehensive processes for public and state involvement as required by various laws.

The federal government has generally, and more specifically since 1981, refused to modify its waste management program to reflect the substantive concerns of the states and the public. The underlying premise that a repository is an engineering problem and can be sited at any suitable geologic site, regardless of other conditions, has led the federal government to ignore the requests of the state of Utah for appropriate levels of data collection pertinent to several significant issues. In short, perfunctory opportunity for review and comment has little meaning when it has no substantive impact. DOE has followed process for the sake of process.

Prior to the enactment of the Nuclear Waste Policy Act of 1982, the state of Utah and many of its citizens repeatedly questioned and challenged DOE's application of procedures required by the National Environmental Policy Act (NEPA), the Administrative Procedure Act (APA) and the Federal Land Policy Management Act (FLPMA). In an effort to achieve resolution to key environmental and technical questions, demands were made for:

- 1) public hearings on the overall nuclear waste management program;
- 2) integrated, comprehensive compliance with NEPA, including the preparation of an EIS prior to the selection of a site for an exploratory shaft;
- 3) appropriate levels of environmental assessment of potential impacts

of data collection activities, prior to the undertaking of those activities; and

- 4) adequate data collection for resolution of the numerous conflicts posed by the proposed siting of a nuclear waste repository in the rugged canyonland terrain, adjacent to national and state parks, and in the midst of dense archeological sites.

These requests were all geared toward producing adequate data for determining impacts of site selection activities and long range program impacts. Unfortunately, DOE responded only by developing elaborate arguments in avoidance of state and public requests. DOE's failure to develop workable solutions to the requests of the state ultimately resulted in delay of data collection necessary for implementation of the Nuclear Waste Policy Act of 1982.

After passage of the Nuclear Waste Policy Act, the state concentrated its efforts on assuring that the Act's prescribed siting guidelines and environmental assessments would provide the necessary basis for sound decision making. The concurrent development of the guidelines and the EAs has resulted in considerable confusion. Moreover, DOE continued its refusal to work with the state in a meaningful fashion.

The involvement of the state of Utah in the nuclear waste program, parallels that of state involvement in the MX issue. The state's initial attitude was to listen and provide information. The history of the state's participation in the early days of the nuclear waste issue demonstrates this

to the point where one might assume certain naivete on the part of the state. But, as in the case of MX, the state consistently demanded the implementation of a process for wise and verifiable decision making.

The position of Governor Matheson in opposition to further consideration of the Canyonlands site is the direct result of DOE's failure to implement such a process.

I. Pre-Act Requests for Procedural and Substantive Compliance with Existing Law.

a. DOE Public Briefing, September 1980.

The history of the efforts of the federal government to identify a site in the state of Utah for the disposal of nuclear waste began in the early 1970s with the identification of the Paradox Basin salt as a potentially suitable medium. While several briefings of Utah state officials occurred during the latter 1970s, the first DOE public briefing occurred in September of 1980 in southeastern Utah.

The initial briefing was conducted while DOE was purportedly completing the REGIONAL phase of studies and preparing for the AREA phase. Considerable exploratory work had been undertaken at the Salt Valley site, one of four identified in the Paradox basin for study. The actual level of environmental review for compliance with NEPA on the Salt Valley exploratory work is unclear. But, it is clear that little, if any, public review of that work took place. Documents identified as EAs now appear to have been contractor

work merely titled environmental assessments, and not documents prepared pursuant to NEPA. Many activities, such as the extensive geologic drilling and testing were simply conducted without any pretense of environmental review.

Environmental review for the Gibson Dome and Elk Ridge areas had occurred earlier in August of 1980 in the form of Environmental Evaluations, scant preliminary documents prepared for the purpose of determining whether or not an EA or EIS was necessary. These documents received no public review and arrived at the unsupported conclusion that no significant environmental impacts were likely.

Environmental studies conducted to that point, or anticipated for the AREA phase, included literature searches and collection of data from local offices and institutions. No field work, other than site visits necessary for familiarization had occurred. December 1979, NWTS Program, ONWI State Briefing Book, Utah Paradox Basin Salt Deposits, p. 10.

Years of working closely with various state/federal land management agencies has resulted in a Utah public and state government with a highly sophisticated understanding of NEPA, APA, and FLPMA. With this sophistication, Utah began its participation in the nuclear waste program with considerable concern over NEPA compliance for both previous exploratory activities and those proposed for future action. The procedural concerns were not for the sake of process itself, but rather process for the sake of its substantive outcome.

At the September public meeting, Utah citizens raised numerous questions

regarding a broad range of subjects. Of particular concern were potential impacts to national parks, cultural resources, wilderness areas, and pristine air quality. Concern was expressed regarding transportation routes in rugged canyon country, availability of water in a desert environment, and proximity to the Colorado River. Detailed information regarding the various aspects of the program was requested. Failure to complete one phase of work before proceeding to the next was identified as a serious problem. Appropriate environmental review was requested for assessment of impacts of exploratory activities and a repository itself. Serious concern was raised regarding the use of temporary permits to avoid triggering full NEPA review, the piecemeal approach to application of NEPA, and the failure to analyze cumulative impacts of the many components of the program. In short, the public perceived that development and implementation of an integrated, comprehensive program would lead to resolution of substantive site specific concerns. Clearly, that program was lacking.

b. BLM November 1980 Gibson Dome EA.

Subsequent to the September 1980 briefing, the Bureau of Land Management, responsible for administering permits on the federal lands under study, issued an EA on the proposed drilling of GD-1 and GD-2 at the Gibson Dome site. This EA merely added various mitigation requirements to the previously prepared DOE environmental evaluation. The document was given 18 days for public review over the Thanksgiving holiday. In its letter to the public requesting comment, BLM stated that the proposed action was a component of a much larger, highly controversial program. BLM indicated that it was not attempting to address the potential impacts of DOE's total program or the adequacy of DOE's

NEPA compliance. A finding of no significant impacts was subsequently issued shortly thereafter.

c. BLM Intent to Prepare Comprehensive EA.

Earlier that year, the Moab BLM office had registered substantial concern that the piecemeal assessment of DOE activities would not provide an overall assessment of the cumulative impacts of the program. Furthermore, the fashion in which DOE and its contractors were asking for permitting authority, effectively precluded BLM from doing its work in a systematic fashion. A request was made for some means to coordinate the overall DOE activities. Memorandum of K. V. Rhea, Acting Director, Moab Office, to State Director, Utah BLM, 2/14/80.

In apparent response to the ongoing concerns of the local BLM office regarding the piecemeal NEPA compliance, the state BLM office notified the state of Utah that a comprehensive EA on the cumulative impacts of both past and proposed activities would soon be undertaken. Letter of D. Stepanek, Associate State Director, BLM to J. O. Mason, Utah Department of Health.

d. DOE Response to Public Comments of September 1980 Briefing,
2/18/81.

In its February 19, 1981 letter responding to comments provided at the 9/80 public meeting, DOE admonished the public for not restricting its comments to the immediately proposed exploratory actions. The public had instead expressed considerable concern regarding the ultimate question of site

suitability for location of a repository. DOE assured the public that its use of temporary permits to carry out exploration activities was not intended to circumvent the requirements of NEPA. Because DOE considered the activities and their impacts temporary, the fact that the ongoing activities might lead to the siting of a repository, admittedly a major federal action, should not have been of concern to the public at that time. DOE further assured the public that this conclusion would be borne out by the comprehensive EA to be issued later that month (a document which in fact did little to support this conclusion).

With regard to public concern over ultimate suitability of the site for location of a repository, particularly in light of proximity to Canyonlands National Park, DOE referred the public to the Generic Environmental Impact Statement on the Management of Commercially Generated Waste (GEIS), August 1980, and to the Environmental Impact Statement (EIS) proposed for preparation prior to the selection of a site for an exploratory shaft.

Unfortunately, the GEIS was a decision document determining that deep geologic disposal was the preferred action for long term disposal of waste management, and provided little assistance in addressing site specific impacts, particularly with regard to a site in close proximity to a National Park. The proposed EIS was simply never prepared.

DOE assured the public that full consideration would be given to the many unique aspects of the Utah site, and that ample opportunity for raising relevant issues throughout the DOE NEPA compliance process would be available as identified in the then relevant Table 1 of the Response document. (The document to which the commenter is referred is a confusing, misleading, and

possibly inaccurate description of past and proposed NEPA compliance actions.)

e. BLM Comprehensive Environmental Assessment of Cumulative Impacts, February 1981

It is a sad commentary to note that the EA touted as the comprehensive assessment of past and proposed cumulative impacts which would provide the bases for all decision making during the AREA phase of study contained a mere five pages of conclusions to the effect that no significant impact had or would occur as a result of any activity. The BLM draft Environmental Assessment for DOE NWTS Program Area Study Phase is principally an assessment of potential impacts from of the proposal for drilling and seismic work at the Elk Ridge site.

f. DOE Intent to Develop NEPA Implementation Plan.

At the time the statement was made to the public that NEPA compliance would occur as outlined in Table 1, decisions were being made to expedite the entire site selection process. The NEPA compliance schedule provided to the public was in the process of being outdated.

The proposed Reagan budget for the nuclear waste program included a plan to expedite the site selection process by two years. The state of Utah was apprised on March 18, 1981 that the DOE program now included an early focus on alternative sites, with use of exploratory shafts to document site suitability.

The new plan called for a decision between the Texas and Utah bedded salt sites by the end of 1981, and a the selection of a salt site for an

exploratory shaft by 1982. When the budget was approved, and the plan implemented, the promise to prepare an EIS prior to the exploratory shaft phase became a mere pretense of intent maintained until early January, 1982. There was no time within the accelerated schedule for such time consuming endeavors as an EIS.

DOE did not immediately admit that the exploratory shaft EIS and other NEPA documents promised in the "Response to Commenters" had been eliminated. Instead, DOE deferred discussion of the promises until its revised NEPA implementation plan was ready for public discussion. When the plan was unavailable in September, it was suggested that it would be available in November in the draft National Siting Plan (a document available within DOE in November of 1981, not appearing for public comment until March, 1982, and never finalized).

In spite of its failure to produce either a NEPA implementation plan or the draft National Siting Plan, DOE representatives continued to indicate that it was likely that an EIS would be required. In its Action Decision Memorandum, November, 1981, DOE states that an EIS has been promised to the Utah Nuclear Waste Task Force, but fails to actually recommend that an EIS be prepared.

During the December Nuclear Waste Task Force meeting, DOE went so far as to identify tentative dates for public scoping meetings and for publication of Federal Register notices of intent to prepare the EIS. At that point, the reason stated for deferral of the decision on the EIS was the introduction of nuclear waste legislation requiring an EA. This was, however, a full year

prior to actual passage of nuclear waste legislation.

When the draft National Siting Plan was issued in March of 1982, its general outline for compliance with NEPA did not contain a resolution to the question of EA or EIS. Internal DOE documents, now available, indicate that DOE as early as December was leaning toward the preparation of an EA. By April of 1982 DOE had made an internal decision not to prepare an EIS and advised its program managers to proceed accordingly. Draft NEPA Compliance Plan for the National Waste Terminal Storage Program, May 7, 1982.

g. Continuing Utah Concern over Lack of Environmental Studies.

Without the benefit of knowledge of DOE's real intention regarding the program, the Governor's Nuclear Waste Repository Task Force and the public continued to push for development of an EIS and to express concerns regarding specific aspects of the program. Concerns regarding the potentially negative impacts of the proposed program on cultural resources, national and state parks, air quality, as well as the practicability of construction of proposed rail routes through rugged canyon country, and onsite salt disposal, were repeated to the DOE at every public and Task Force meeting.

While DOE continued to assure the state that all issues raised were of equal concern and that studies were underway to provide adequate environmental assessment of the issues, a letter of 8/19/81 outlining the scope of completed, ongoing and proposed BECHTEL (one of DOE's principal contractors) studies indicate the contrary.

Only two general studies had been completed: Environmental Evaluation of

Area Geologic and Geophysical Activities in Utah and Water Availability in Utah and Related Repository Design. The Environmental Evaluation description sounds suspiciously close to the scope of the discussion contained in the five pages of cumulative impacts "analysis" in the February 1981 BLM EA. The water availability study when released for public review the following year, was described by the Environmental Work Group of the Governor's Task Force to be too general for comment.

Of the few studies underway, the most significant was the Preliminary Rail Access Study in Southeastern Utah, scheduled for completion in 9/81. The Governor's Task Force had received a transportation briefing based on the study underway and was concerned with its conclusions. A later Utah Department of Transportation review of the details of the study was highly critical of its accuracy, completeness and overall usefulness.

Among the most significant of the several activities proposed were the Paradox Air Quality Study, Salt Disposal for the Paradox, and Cultural Resources Study, three key issues of concern identified by the Utah public a full year before. Although there was no date for commencement of these studies, the Air Quality study noted that the proposed location for study was very near to Canyonlands National Park and that only extremely limited air quality degradation would be permissible. The Study recommended that potential air quality impacts and visibility degradation at the park should be determined at an early date.

h. 1981 Program Decisions.

The DOE program during the 1981 year had anticipated a decision between the bedded salt sites in Texas and Utah. The December deadline for the decision came and went, with no indication to that state the decision point had been dropped or at what point it would be implemented. Apparently a decision had been made to eliminate the selection between the two sites.

A clear decision had been made, however, in September to narrow the Utah sites to Davis Canyon. Earlier indications to state officials were that the Lavender Canyon was the preferred location. In September of 1981, DOE reviewed with state officials its decision methodology used to arrive at the decision for selection of the Gibson Dome, Canyonlands site. It is curious to note that the stated reasons for the preference of the Canyonlands site over the other three, changes from the minutes of the initial September meeting, to the November public briefing, and finally the draft documents purportedly supporting the conclusion. The lack of formal decision methodology at the time of the decision may account for the variation. The various draft documents for the AREA phase of study, purportedly supporting the September decision, were made available for public review in December.

In addition to the draft AREA phase documents, the draft Location Recommendation Report was also made available in December for public review, supporting the selection of the Davis Canyon site. It is important to note that at this time the Regional phase (preceding AREA) documents were in the process of finalization, the various NWTS-33 siting guideline documents were still in draft form, and the draft National Siting Plan, allegedly containing the NEPA implementation plan, had yet to be issued to the public for review.

II. Moratorium on State Permits for Location Studies, July 15, 1982.

a. Governor Scott M. Matheson's Request for Programmatic Environmental Impact Statement, March 8, 1982.

In early 1982, the state became increasingly concerned with DOE's efforts to proceed with site selection activities without finalizing the previous stage of study. In addition to outstanding draft documents, the state was faced with the imminent issuance of two more, the draft National Siting Plan, and the draft BLM Location Studies EA.

On March 3, 1982, Governor Matheson made a formal request of Secretary of Energy, James Edwards, for the development of a programmatic EIS as required by the GEIS of August 1980, and a commitment to an exploratory shaft EIS. The programmatic EIS was envisioned as including identification of the specific points where field activities would require NEPA documentation, such as an EIS for the shaft.

The Governor stressed his growing concern over the lack of an integrated, comprehensive decision making framework for the program and the resulting piecemeal application of NEPA. Major program decisions were being made and alternatives eliminated without the benefit of required NEPA documentation.

Secretary Edwards response of April 12, 1982, stated that the draft National Siting Plan, March, 1982, answered all concerns over the need for a programmatic document and that the attached EA provided sufficient assessment of impacts of field activities. (The public had previously been referred to

the GEIS for such specifics.) He admitted that decisions were indeed being made, and alternatives foreclosed, but suggested that this was the inherent structure of DOE's step-wise site selection program. The NEPA implementation plan contained in the document provided for focusing on the immediate decisions at hand rather than repetitious consideration of previous decisions.

The draft National Siting Plan later came under severe criticism by the state as simply a restatement of DOE's ongoing program, rather than an attempt to develop a programmatic framework. Furthermore, the attached EA concluded that the nuclear waste management program did not constitute a major federal action having significant environmental impact. This conclusion regarding a program of such controversy and national significance with extensive exploration activities was clearly improper and, presumably because of pending legislation, the draft was never finalized.

b. BLM draft EA for Location Studies, April 1982.

In April of 1982 with the issuance of the BLM draft EA for Location Studies, it became apparent to the state that DOE's proposed exploratory activities for the Canyonlands site were far more extensive than the state had realized. The draft document indicated that it was likely that considerable environmental impacts from the data collection activities would result. Both the Governor and the public found the analysis in the EA grossly inadequate and inaccurate, and the finding of no significant impact, inappropriate. An EIS was recommended.

In light of the overwhelming negative public comment, and the deficiency

of the document, BLM required DOE to provide greater specificity as to its activities. Once completed, BLM issued the final EA, clearing the way for issuance of the necessary BLM permits for exploratory work. An immediate appeal of the BLM decision was made to the Interior Board of Land Appeals (IBLA) by various citizen groups resulting in an automatic stay of issuance of BLM permits.

DOE, now prevented from undertaking the bulk of its scheduled activities on BLM lands by the administrative appeal, decided to proceed with those studies slated for state owned land. On July 15, when DOE's intent became apparent, Governor Matheson issued an immediate directive to state officials to

"...decline to issue any permits, licenses, rights-of-way, authorizations or any other form of permission or authority which would permit DOE, BLM or any person or companies authorized by those agencies, to use any state facilities or resources in conducting any of the proposed studies or related activities until after full compliance with both NEPA and FLPMA.

This action was the culmination of 2 years of requests for appropriate levels of environmental review in order to assure adequate consideration of the impacts of the construction and operation of a repository, prior to decision making. DOE's continued segmentation of the NEPA process, without a comprehensive programmatic framework, and absent open public review of the decision making process, was fast leading to a final site selection decision without the initial consideration of whether or not the Canyonlands site was suitable for such an industrial facility. The Governor appropriately feared

that sufficient economic investment at the site could preclude consideration of the environmental and institutional factors raised by the state and the public which would likely eliminate further consideration of the site.

III. State Permitting of DOE Activities Following the July 15, 1982

Moratorium.

a. Impact of State Moratorium on DOE Data Collection Activities.

Much has been said about the role of the state moratorium in DOE's failure to collect necessary data for analysis in the EA required by the Act. Indeed, DOE has carefully cultivated the perception that the state has deliberately blocked the very data collection activities it continues to request.

This has not been the case. Rather, DOE deliberately avoided resolution of the IBLA administrative stay necessary for pursuit of the bulk of its activities on BLM lands. Indeed, state permits issued for geohydrologic field activity were never used. The only rationale for such avoidance of data collection activities is the possible intent of DOE to defer such activities until after a site had been selected for an exploratory shaft.

b. Subsequent Permitting Events.

The concern which triggered the moratorium proved a valid concern. DOE contractors, barred from federal lands by the IBLA stay, were indeed on their way to begin drilling on state land sections. The principal state permit

necessary was an overload permit to transport oversized rigs into the designated areas. After negotiation with the state, DOE contractors were granted the necessary permits on the basis that the work was necessary to complete the AREA phase of studies rather than the Location phase. In early August, a total of six project vehicles were authorized to proceed with AREA phase activities.

Negotiations between the state of Utah and DOE ensured for several months subsequent to the issuance of the moratorium. Prior to lifting the directive, the Governor requested:

1. Provision of adequate time for review of DOE documents. DOE had agreed to 90 days for review of each document in July and again in November of 1981, but the time period was rarely honored.
2. Finalization of the AREA Characterization Summary and Location Recommendation Report prior to on-site Location studies. (A condition met immediately on August 2, 1982.)
3. Preparation of an EIS in conjunction with the draft National Siting Plan in order to meet the program need for and Governor's request of a programmatic EIS.
4. Preparation of an EIS prior to selection of a site for detailed site characterization (exploratory shaft).

DOE responded to the Governor's requests by suggesting that the GEIS, August 1980, was a programmatic EIS (rather than the draft National Siting

Plan as stated in the April Edwards letter) and that an EA on the exploratory shaft would be prepared in order to determine whether or not an EIS would be required. With regard to the location studies activities, the Secretary stated that DOE

"...would of course defer proceeding with the location phase studies until the current administrative challenge to BLM's approval of those studies is resolved. I urge you to withdraw your July 15 directive once that challenge has been resolved. Letter of Secretary James Edwards, to Governor Scott M. Matheson, August 24, 1982, at p. 2.

While the Secretary officially took one position, indicating that DOE would respect the IBLA administrative stay, DOE program level personnel continued pursuit of state permits for the purpose of commencing Location studies work. Letter of J.O. Neff, NWTS Program Manager, to A. Rickers, Utah Office of Nuclear Waste, August 23, 1982. The state responded to the inquiry, noting that while DOE was justified in its desire to initiate Location study activities, resolution of the IBLA process would be necessary first. Letter of A. Rickers, Utah Office of Nuclear Waste, to J. O. Neff, NWTS Program Manager, 9/1/82.

From that point, until passage of the Nuclear Waste Policy Act of 1972, DOE pursued dichotomous positions with regard to further data collection. Publicly, it continued to negotiate with the state regarding the four issues outlined by the Governor, including the issuance of state permits so that Location studies might commence. Privately, it deliberately delayed the

hearing on the merits of the appeal before IBLA in order to avoid resolution of the issue.

Subsequent negotiations on the four points outlined by the Governor in July, and limited concessions by DOE, ultimately led to state agreement to permit various Location phase activities . DOE had successfully argued that in order to determine whether or not an EIS was necessary prior to site characterization, data from the Location phase was necessary. DOE committed to conducting public scoping meetings for identification of impacts of site characterization and suitability of the Canyonlands site for a repository. Memorandum of A. Rickers to Governor Matheson, 10/18/82. Extensive meetings with state agencies were then arranged to initiate the permitting process on a case by case basis, although the IBLA stay remained in effect. Letter of A. Rickers, Utah Office of Nuclear Waste, to J. O. Neff, NWTS Program Manager, 10/21/82.

Now that the state had agreed to issue state permits for Location studies work, regardless of the continued effect of the IBLA stay, DOE made no further efforts to pursue data collection activities. DOE subsequently announced that no further exploratory work or other data collection was necessary in order to select a salt site for exploratory shaft construction, presumably mooted the effect of the IBLA stay and the Governor's moratorium. The decision was formally announced to the states on November 19, 1982 at a meeting in Columbus.

IV. State Refusal of DOE Funding.

DOE instead began an attack on the state regarding its expenditure of grant funds. Following the moratorium, the Utah Office of Nuclear Waste had experienced increasing difficulty in obtaining approval of its grant expenditures, with DOE imposing a monthly review of the state's activities.

DOE, at a meeting in November between DOE and state officials, accused the state of inappropriately using DOE funding to provide inaccurate and misleading testimony to Congress during a hearing on nuclear waste legislation. It was indicated that Shelby Brewer, then Deputy Under Secretary of Energy, was emphatic that if Utah were unwilling to allow active location studies, no further funding would be granted, particularly in light of the state's testimony. A further telephone conversation on November 23, 1982, between DOE and Utah Governor's staff, resulted in the intimation by DOE that the grant money would be available if the Governor would change his position regarding the unresolved requests. If he did, Utah could receive a substantial amount.

On November 24, 1982, the Governor advised Secretary Hodel that as of December 31, 1982, the state would no longer accept DOE funding for review and monitor of the nuclear waste program. The Governor noted that the state had provided serious recommendations and constructive criticism as a result of thorough scrutiny of the program, comments which were viewed by DOE as a lack of cooperation. Cooperation should not be defined as agreement and approval of a program which the state had the responsibility to view with utmost skepticism in the interest of its citizens.

Furthermore, the state would not fall prey to the intimation that unless it cooperated, grant moneys would be terminated. The Governor finally noted the correlation between the increasing difficulty facing the state in obtaining funding, and the increasing public criticism of DOE programs and procedures. The state would not provide nominal approval of a program it viewed as seriously flawed, regardless of its need to secure funding for oversight.

V. August 5, 1982 Petition for Rulemaking on Data Sufficiency Standards in the DOE Guidelines.

The Nuclear Waste Policy Act, signed into law by President Reagan on January 7, 1983, ended the debate between the Governor and DOE regarding the need for a programmatic EIS and an EIS prior to the selection of sites for detailed site characterization.

The Act provided a comprehensive frame work for development of a Mission Plan, detailed guidelines, and an extensive EA prior to the selection of sites for characterization. It further established deadlines for the completion of various activities, deadlines which were ultimately proven to be unrealistic in light of the extensive nature of the work required to develop the various components of the program.

DOE's initial schedule for completion of the draft EA was July, 1982, shortly after the Act required the completion of the guidelines. The schedule has incrementally slipped its current date of January 1984.

On February 2, 1982, pursuant to the Act, Governor Matheson received formal notification from Secretary Hodel, that Utah contained one or more potentially acceptable sites for the location of a repository.

a. Data Collection for Development of Environmental Assessment.

While DOE had determined, prior to the Act, that no additional data would be necessary for selection of the sites for characterization it was not clear at this point what its position was following the Act. Clearly, full application of the guidelines on the issues outlined by Congress would require additional data collection at the Utah site.

Although the IBLA administrative stay remained intact, DOE's contractor, BECHTEL, and its sub-contractor for archeological work, Nikkens & Associates, requested two permits from the state: a permit from the Division of State History to do survey work on state land sections, and a general permit from the Division of Parks and Recreation for purposes of ensuring protection of cultural resources during general exploration/excavation on both state and public lands.

BECHTEL initially indicated that the additional work was for inclusion in the EA. When it became apparent that the proposed work was too limited to provide the scope of study necessary for preparation of the EA, BECHTEL changed its position, indicating that the work was for the limited purpose of clearing up the controversy created by the public with its identification of numerous archeological sites in the area.

Regardless of its motive, the State Archeologist expressed concern with the limited nature of the proposed study. It feared that an attempt would be made to use the data collected to support broad conclusions in the EA regarding the existence/nonexistence of cultural resources and likely repository and related corridor impacts.

The archeology permits were granted by the state, but only after the subcontractor rewrote the scope and purpose of the study to address the concerns of the state. As noted later by the State Archeologist (memo of 10/3/84) the completed study provided only the limited assessment of direct impacts within the projects area, giving a rough idea of the nature and distribution of sites. Lacking was the work necessary for assessment of indirect impacts of the proposed project, which he viewed as likely to be greater.

Another area receiving attention during the summer of 1983 was the issue of air quality. DOE and its subcontractors had several meetings with the state Bureau of Air Quality in order to determine what information would be necessary to make application for a permit to construct an exploratory shaft. DOE had, on many previous occasions, been advised that the state required one year of modeling prior to permitting an activity of the nature of an exploratory shaft.

DOE had made inquiry regarding the possibility of obtaining an exemption from the state Air Quality Committee for the shaft and related construction activities. The Bureau had advised DOE that any attempt to provide an exemption for a project as large and controversial as an exploratory shaft for

a nuclear waste repository was highly unlikely.

The state now advised DOE that the collection of data would be permitted only if the information would be included in the EA. DOE argued that whatever data was available at the time the EA was drafted, would be included in the EA. While the timeframe for release of the draft EA was now September, virtually little data would be available for analysis. The state pointed out that less than a full year of air quality monitoring would not provide a scientific basis for analysis of potential impacts since the seasonal variation in the area was considerable.

DOE later indicated that in the absence of actual data on the Utah site, it would use air quality data obtained from a comparable Colorado site. This proposal was thoroughly criticized by the state because of its lack of similarity. When DOE later ran its most conservative model, using the Colorado data, the result showed a violation of the Clean Air Act, Class I protection for the Canyonlands National Park, Supporting the earlier noted concern of BECHTEL in its proposed Air Quality Study.

As the schedule for the EA was pushed back, month by month, it became apparent that DOE could have collected the air quality data in time for its inclusion in the EA. It appears that DOE had incorrectly assumed that a permit for the construction of the exploratory shaft would not require one year of air quality monitoring prior to issuance of the permit. Had DOE set realistic time schedules for its EA work, much additional data collection could have occurred.

b. EA Scoping Meeting.

The initial optimistic DOE schedule for completion of the guidelines and draft EAs fell far behind. The state and public raised considerable objection to both the substance and procedure of the initial versions of the proposed guidelines, finding them vague, incomplete, and lacking a decision methodology.

As a result, the scoping meeting for the Utah EA was not held until May 3, 1983. The general comments of the state of Utah criticized DOE's compressed time schedule as compromising the integrity of the process. The results of that time schedule were many: Failure to finalize the guidelines prior to initiation of the EA process; intent to defer analysis of key issues to the site characterization phase; inability to provide complete evaluation of the site against all siting guidelines because of incomplete data; inability to provide a meaningful comparative analysis between nominated sites; abandonment of pursuit of information once deemed essential for good decision making; and finally, the absence of a decision making process itself.

These specific comments of the state were a more elaborate version of the issues raised over the previous three years. Few, if any, had received adequate study regardless of the relative ease or difficulty of obtaining the information. In particular, the state noted the failure to address impacts to Canyonlands National Park, although resolution of this critical policy issue had been of paramount concern to both the Governor and the public over the past several years.

Immediately following the scoping meeting, in a May 5 meeting with DOE

officials it became apparent that the DOE viewed the EA as a feasibility study. The document would be used for the purpose of identifying fatal flaws which might eliminate any of the sites under investigation. In a letter of May 14, 1983, to Acting Director of the Nuclear Waste Program, Robert Morgan, the Governor took issue with this interpretation of the role of the EA in the decision making process. He argued that the purpose of the EA as anticipated by the Act was not to determine minimum requirements of a site, but to identify the salt site most suitable for further study.

c. Hydrology Workshop.

The state and public had been raising the issue of adequacy of hydrologic data for the past three years, with particular concern over the inability of DOE to collect it because of the proximity of the site to Canyonlands National Park. DOE had maintained that drilling in the park was not necessary to identify the hydrology of the site. It felt that with available data and sophisticated modeling techniques, key hydrologic issues were readily understood. Neither the state nor the USGS agreed with DOE's interpretation of its limited data. Additional concern existed with regard to DOE's intention to rely on computer modeling of an issue of such critical importance.

In an effort to resolve the issue, the state Geology Work Group hosted a hydrology meeting for purposes of bringing top hydrology experts together for discussion of the matter. One recommendation which came out of the early July workshop was for an intermediate level of data collection involving downgradient drilling from the site, outside of the park boundary. The state Geologist maintained, however, that the best program for determining the

hydrology of the site must by necessity include drilling at locations within the park.

The Governor adopted the recommendation of the intermediate plan. It is important to note that the Governor's position had always included Environmental Assessment prior to undertaking data gathering activities in order to ensure avoidance of unmitigable activities. DOE made no decision until December, 1981 to gather additional hydrologic data. At that time it indicated its intent to drill a cluster of boreholes less than 1000 feet from the boundary of the park.

d. DOE Decision that No Further Data Collection Necessary for Preparation of EAs.

While the field level discussions were taking place, DOE policy makers continued to state their awareness of the unique issues surrounding the Utah site, such as parks and recreation areas, limited water availability, proximity to the Colorado River, and cost and safety of transportation to the site. Regardless of this stated sensitivity, DOE also articulated its position that considerable technical information of adequate detail existed for addressing these sensitive issues in the EA documents. Letter of Robert L. Morgan, Project Director, Nuclear Waste Policy Act Project Office, to Governor Scott M. Matheson, 7/7/83.

The state immediately requested that DOE provide it with a statement of the legal rationale for its decision that no additional data was necessary for development of the EAs. Letter of Gary Tomsic, Chairman, Utah Nuclear Waste

Policy Work Group, to Robert L. Morgan, DOE, 7/22/83.

The concern over the adequacy of the Utah EA as a basis for decision making was heightened by the language in DOE's various versions of the proposed guidelines. While the state's concerns were many, as reflected in the state comments on the guidelines, of critical concern were 1) the guideline allowing DOE in its development of the EAs to use available data, and where data was lacking, conservative assumptions; and 2) the guideline limiting consideration of national park impact to irreconcilable, direct impacts.

The state felt that the availability of adequate data regarding park impacts would have resulted in a conclusion that the impacts to the park would be unacceptable. However, the park guideline was worded so narrowly that few impacts, short of actual construction in the park, could be construed as irreconcilable. Regardless of DOE's often stated intention to provide special consideration of the unique features of the Paradox region, the combination of the failure to collect data regarding the park impacts, and the restrictive guideline for park protection, resulted in arrogant disregard of those unique features. Other areas impacted by the 'available data' guideline were archeology, transportation, air quality, and hydrology, all issues raised repeatedly over the last several years.

On August 5, 1983, the governor filed a rulemaking request with the DOE asking that clarification be made of the standards for determining the scope and depth of the analysis to be included in the EAs required by the Act. Once such clarification had been made, the Governor suggested that efforts should

be undertaken to collect the necessary data for inclusion in the EA.

III. Governor's Petition for Rulemaking on National and State Parks; Renewal of Petition for Rulemaking on Data Collection; Request for Other Agency Action; Termination of State Agency Cooperation in Activities Furthering DOE's Existing Schedule and Approach; and Request for Memorandum of Understanding.

a. DOE Failure to Respond to Governor's August 5 Rulemaking Petition.

On November 23, 1983, prior to any acknowledgment of the Governor's Petition for Rulemaking, DOE indicated its intention to resume non-disruptive field work on November 28 (date of receipt of letter in Governor's Office). Activities proposed were spring sampling in Cataract Canyon, reconfiguration of existing microseismic network, and aerial photography and surveying of ground control for preparation of topographic maps.

On November 18, 1983, also prior to its response to the Governor's Petition, DOE transmitted the guidelines to the Nuclear Regulatory Commission for concurrence. A letter of transmission from DOE to the state identified the 11/13 guidelines as "final."

On November 24, Secretary Hodel finally responded to the August 5 Petition for Rulemaking, indicating that the Governor's suggestions would be "considered" and a decision regarding the petition for rulemaking would be "reflected" in the Preamble to the Final Guidelines. In the December 8, Utah

Policy Work Group Meeting, Mr. Bill Bennett, DOE, advised the state the the petition had essentially been denied.

On December 14, the state received a copy of DOE's Annotated Table of Contents for Environmental Assessments (EAs) Required by the Nuclear Waste Policy Act (NWPA), based on the version of the guidelines transmitted to NRC for concurrence. The state had made several previous requests for an outline of EA contents and a list of the issues to be evaluated therein, throughout the past year.

When and how the state would receive adequate response to its rulemaking petition was not clear. What was clear was DOE's intent to proceed with both its EA and guideline process without bothering to address the issues raised in the August 5 Petition.

c. DOE Initiation of Disruptive Data Collection Activities.

On December 20, 1983, the state received a phone call from DOE notifying it that DOE had identified a year and one/half program of "necessary field activities" at all sites. For all practical purposes, it appeared that DOE was in the process of initiating activities which would be carried out well into the site characterization phase.

DOE stated its intent to pull the BLM Location Studies EA from the IBLA process so that the necessary environmental review for field activities would be completed, although the subsequent description of activities included several major activities not addressed in the EA. Of greatest concern were

the proposals to drill a series of holes less than 1000 feet from the boundary of Canyonlands National Park.

When asked whether the data would be available for inclusion in the EA, DOE responded that some of it would be available, but only in the last stage of the EA development. It would be used as either "confirmatory or nonconfirmatory" of the assumptions used in the EA. DOE further stated that these activities would not constitute detailed site characterization, although they were not for the purpose of the EA.

The subsequent DOE letter outlining the work listed three categories focusing on the collection of air quality and hydrologic data: non-disruptive, disruptive involving BLM land, and disruptive involving state land. The drilling next to the park was to include a cluster of three boreholes. DOE staff was actively preparing the permit applications for the Utah state agencies. DOE stated that for any activities not discussed in the BLM EA, new environmental documentation would be provided.

On December 22, 1983, in a letter to Secretary Hodel, Governor Matheson indicated that DOE appeared to be shortcircuiting steps prescribed by Congress to ensure that full information be available for support of the decision making process. The Governor stated that DOE had repeatedly ignored state requests, particularly with regard to the July 22 request for legal rationale for its decision that adequate data existed for selection of three sites for site characterization, and the August 5 Petition for Rulemaking.

Concern was expressed that prior to even addressing the issues raised by

the state, DOE had developed and implemented an internal process for development of the EA document. As a result of ignoring the state's requests, and its refusal to conduct preliminary studies required by the Act, the issue of the acceptability of intrusions into a national park and historically significant state park remained unresolved. Collection of the much needed hydrologic data could not be initiated prior to resolution of that critical public policy question.

With his letter the Governor submitted a series of requests and directives designed to correct the many procedural and substantive deficiencies in the site selection process:

1. Petition for Rulemaking designed to ensure proper consideration of state and national parks. In it the Governor proposed a standard which would result in consideration of the Canyonlands site, only, if all other sites were shown to be unsuitable.
2. Renewal of August 5 Petition for Rulemaking regarding data collection for purposes of EA development.
3. Directive to state agencies to cease cooperation with the DOE and its contractors in those activities "which would further the existing schedule and approach," a policy which was to be "modified on a case-by-case basis" so as to encourage requests to gather data for inclusion in the EA and deny requests for data for site characterization.
4. Request for memorandum of understanding to provide guidance for state/DOE

relationship.

5. Request for various opportunities for public review of the guidelines and EA process, in their proper sequence. For example, although a public hearing had been held on the guidelines, the final version transmitted to NRC for concurrence was a significantly different document than the initial guidelines published in the Federal Register. Also, the May scoping meetings had been conducted pursuant to the earlier version of the guidelines.

VII. May 5, 1984, Unqualified Opposition to Gibson Dome Site and Statement of Conditions for Environmental Review Prior to Disruptive Data Collection Activity.

a. State/DOE Negotiation Re Data Collection Activities.

Undaunted by the state's position that cooperation would be given for DOE activities only where the results would be included in the EA, DOE advised the state on January 10, 1984, that BECHTEL would be meeting with the Utah Bureau of Air Quality on January 17 for the purpose of reviewing DOE's air quality monitoring program and visiting proposed sites.

On January 12, 1984, the state met with DOE in Washington D.C. at the state's initiative for the purpose of clarifying the Governor's position. DOE was advised that further data gathering was dependent upon a response to the Governor's August 5 Petition for Rulemaking on data sufficiency, an agreement that all data collected would be incorporated into the draft EA, and

resolution of the policy question regarding permissible impacts on the national park.

DOE agreed to include all data collected in the draft EAs, and to provide draft statements of its rationale on both the national park and the data sufficiency issues at a meeting to be held in Salt Lake City on January 18, 1984. Further agreement was reached that nondisruptive data collection activities could be pursued, but that the request for drilling next to the park would not be granted until resolution of the national park rulemaking petition. With regard to evaluation of environmental impacts of data gathering activities, DOE indicated its intention to use the Location Studies EA as the basis of its environmental review. Some means for addressing activities not analyzed in the EA, such as a supplement to the EA, would be provided.

The subsequent meeting of January 18, 1984, was limited to a discussion of a proposed "Process of Interaction Between SRPO and Salt States on EA Preparation." DOE failed to bring the agreed upon draft rationale of DOE's positions on the Governor's petitions for rulemaking. The draft Process, however, was received with optimism by the state and provided DOE with many favorable comments. The same draft was later transmitted to all salt states for consideration as a basis for developing an acceptable process for exchange of documents and data during the EA process. The process was discussed at the salt states meeting, but to date has not been implemented.

In its efforts to forge ahead with field activities, DOE scheduled a meeting in early February with BLM to discuss proceeding with the drilling

adjacent to the park boundary. In a letter of January 30, to Bill Bennett, DOE, the Governor restated his position that while the state insisted upon adequate data collection, it was essential that the impacts of data collection activities be thoroughly addressed prior to initiation of the activities. The Governor further reminded DOE of its stated intention to use the pre-Act NEPA process for achieving that assessment. Letter of Governor Scott M. Matheson, to B. Bennett, Office of Civilian Radioactive Waste Management 1/30/84.

In a letter to BLM transmitting a copy of the communication to Bennett, the Governor suggested that in addition to supplementing the Location Studies EA for activities not considered therein, BLM should correct any deficiencies identified by the IBLA. Letter of Governor Scott M. Matheson, to Roland Robison, State BLM Director, 3/31/84.

In a January 31 response to requests from both DOE and BLM for review of cultural resource material in San Juan County, the State Historic Preservation Officer indicated that the site inventory for the area is incomplete, particularly in the Davis and Lavender Canyon areas and associated transportation and utility corridors. He further noted that the area contains some of the most extensive siting of cultural resources (625 known sites in the area), and that impacts from characterization, construction and operation of a repository had not yet been addressed. A full inventory would be required, and in order to accomplish this, the Division requested that a full research design be developed for the project. On March 23, the State Historic Preservation Officer added the request that DOE and BLM comply with all applicable federal and state statutes relevant to preservation of cultural resources, triggering the full scope of their responsibilities with regard to

those resources.

Throughout this flurry of data gathering related activities, DOE failed to provide the state with an idea of how the assessment of environmental impacts would be undertaken, and how the data would fit into the ongoing development of the EAs.

b. Response to Governor's December 22, 1983 Requests.

On March 9, Secretary Hodel responded to the Governor's letter of December 22, 1983. A response to the specifics of the attached petitions would be forthcoming from Michael J. Lawrence, Acting Director of the Office of Civilian Radioactive Waste Management.

Secretary Hodel assured the Governor that DOE had cut none of the required steps of the Act, and as an example, had missed the guideline deadline set by the Act in order to satisfy the requirement of the Act for full state consultation and cooperation. With regard to the Governor's request for an interim agreement for cooperation, Hodel indicated a preference for the state to initiate a consultation and concurrence agreement under the Act.

On March 14, in the letter from Michael J. Lawrence, DOE summarily rejects all of the Governor's requests, but notes that final disposition of the issues raised in the petitions for rulemaking would be made by the Secretary following NRC concurrence in the guidelines.

--With regard to the petition for rulemaking for the development of a standard for the protection of protected reserves, DOE states that the proposed standard is too strict and would require DOE to automatically eliminate any site located near protected reserves, even if only minor impacts would occur.

--With regard to the petition for rulemaking for defining a substantive basis for selection of three sites for characterization, DOE states that the Act requires the decision be based on "information and analyses presented in the EAs, and on pertinent Federal regulation, which together will provide adequate basis for exercising discretion in making the decision." Furthermore, the role of federal officials and the ongoing close consultation with the states would serve to strike a proper balance in the decision process. Finally opportunity allowed the states in determining how the "data and findings and other relevant material will be organized and displayed as elements considered in the Secretary's recommendation decision" would provide further opportunity for involvement in the process.

--With regard to the petition for rulemaking on the sufficiency of data, DOE states that the standard proposed could unreasonably restrict the Department's evaluations for the EAs and interfere with the Departments ability to comply with the Act. DOE will use all available information in the EAs. In the event the Secretary concludes that there is insufficient information, DOE will provide whatever is necessary.

--With regard to the Governor's request for other agency action for the purpose of rectifying the disorderly approach to EA and guideline development,

DOE states that there was insufficient change in the guidelines to warrant a subsequent hearing, and that hearings on the draft EAs will provide the public with ample opportunity to comment on the EA process with the benefit of finalized guidelines.

With the reluctant acceptance that all the efforts of the state of Utah to effect changes in the DOE program necessary for the protection of the states resources had failed, the Governor on May 4, 1984, issued an unqualified statement in opposition to further consideration of the Canyonlands site for location of a repository:

...

Recognizing the national problem that must be dealt with in disposing of nuclear waste and our responsibility to share some of the burden of helping to resolve that problem, we have so far attempted to work within the process prescribed by the Nuclear Waste Policy Act of 1982. DOE's conduct to date has given us little reason for confidence in its process. Instead of conducting the kind of intensive data collection and analysis that would eliminate unsafe and unsuitable candidate sites at an early stage, DOE has chosen to base its initial site selection decision on a superficial analysis and has collected virtually no data.

Over our strong objections, DOE has adopted guidelines for the selection of a site that permit DOE to rely on inadequate and fragmentary "existing data" in evaluation the Canyonlands location, and to paper over the immense gaps in this existing data through the use of hypothetical assumptions.

From the very earliest stages of DOE's site selection, our essential concern has been this: If proper advance consideration is not given to factors and criteria that should disqualify a site, then selection of the site for further study predisposes the federal government to disregard later disqualifying evidence. ...

Moreover, the plans for intensive study of the suitability of the Canyonlands site reveal the prospect of substantial and enduring impacts on the land, environment and culture of the area, an will commit tremendous financial and human resources to the project. We have, therefore, considered it vital that DOE provide early and full analysis of data relating to the

impacts of the intensive "site characterization" process that would be required at the finalist sites. The substantial damage that will be done, even by necessary studies of the Canyonlands site, reinforces our conclusion that now is the appropriate time for Utah to halt this process.

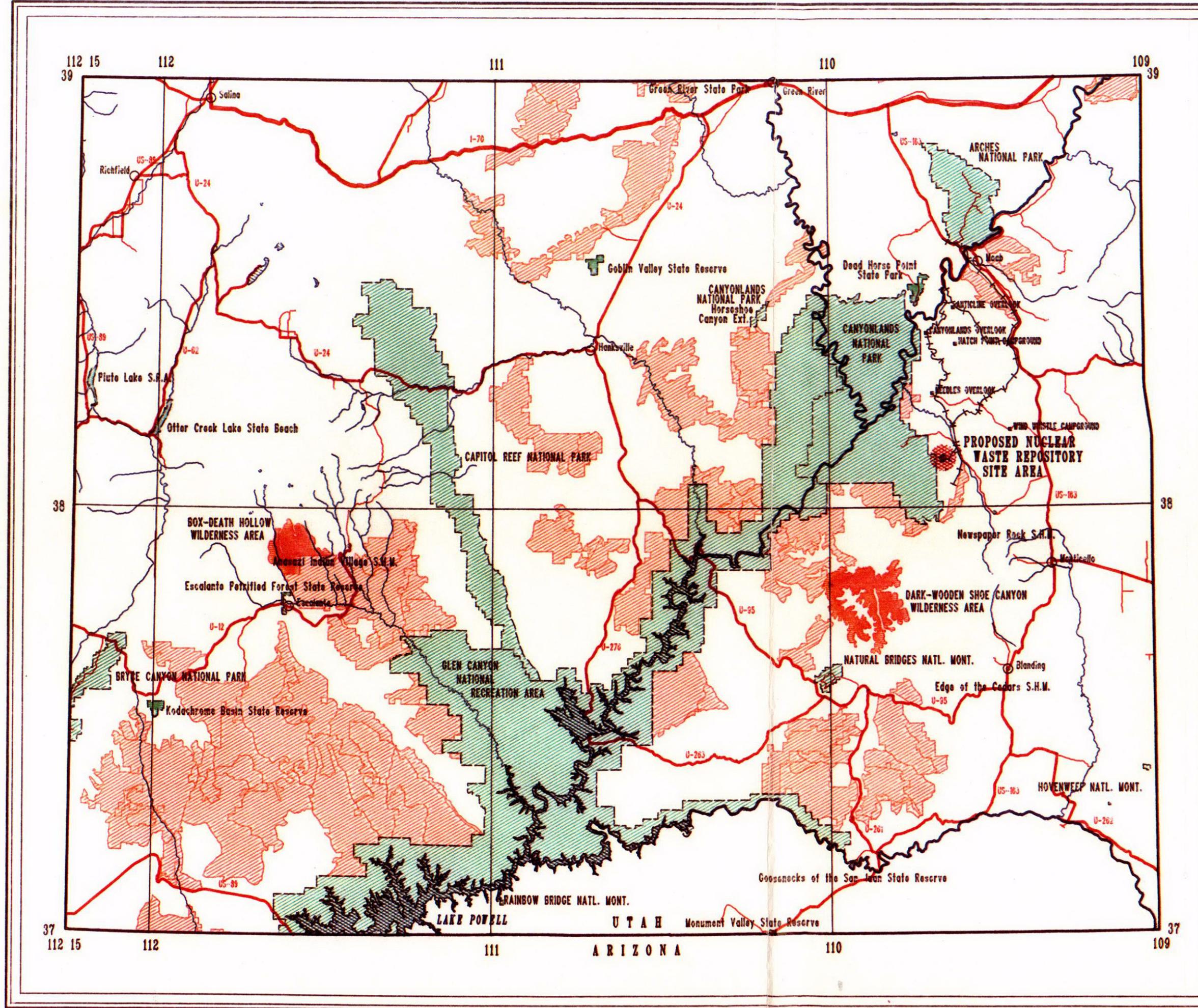
...

Consequently, I have taken the position that the disruptive data gather activities DOE now proposes, prior to site characterization must be the subject of full environmental review. This obvious dilemma of seeking needed data while avoiding damage from disruptive data collection activities, can only be avoided by careful assessment of impacts and development of appropriate mitigation strategy.

This final position of the Governor regarding the DOE waste management program generally, and the Canyonlands site specifically, was the result of four years of frustration much like that experienced during the federal

government's efforts to site the MX in western Utah. In both cases, the simple failure to provide an open and legitimate decision making process with the availability of full technical data, undermined the integrity of the program.

Regardless of its inability to impact the decision making program itself, the state would insist that environmental assessment of data collection activities occur prior to their initiation with full provision for necessary mitigation. At a minimum, while the DOE program proceeds in the absence of a legitimate decision making process, the state will undertake all available actions necessary to ensure the protection of its resources.



SOUTHEASTERN UTAH STUDY REGION

COMPILED BY

UTAH AUTOMATED GEOGRAPHIC REFERENCE
5500 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH 84114
SEPTEMBER, 1984

MAPSCALE 1:1,000,000

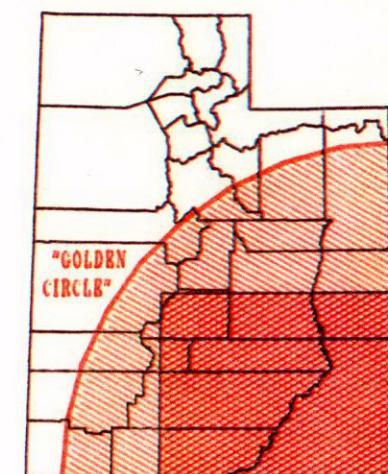
PRIMARY SOURCE MAP: BLM LAND STATUS AND AREAS OF RESPONSIBILITY 1977

SECONDARY SOURCES: ONWI 291-404 AND OTHERS
U.S.D.A. FOREST SERVICE MAPS
U.S.G.S. 1978

EXPLANATION

- [Solid Green Box] STATE PARK OR HISTORIC SITE
- [Light Blue Box] NATIONAL PARK OR RECREATION AREA
- [Red Box] U.S. FOREST SERVICE WILDERNESS AREA
- [Light Red Box] B.L.M. WILDERNESS STUDY AREA
- [Hatched Area] D.O.E. PROPOSED RAIL ROUTE ALTERNATIVES

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MAP LOCATION