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OUT-OF-STATE TRIP REPORT

TRAVEL INCURRED BY: RONALD J. FORSYTHE
 LOCATION: Washington, D. C.
 DATES: December 18-19, 1982
 PURPOSE: Discuss H.R.3809 and proposed Senate Amendments with
 Senator Stennis and several other members of the United
 States Senate

On Friday evening, December 17, 1982, I was contacted at home by Governor William Winter regarding the status of the proposed national nuclear waste management legislation. He requested that I meet with him and Charles Deaton on Saturday, December 18, 1982, to discuss the problems with the bill and ultimately discuss the bill on a conference call with Senator Stennis.

I met with the Governor and Mr. Deaton on Saturday morning and discussed the strategy of our conversation to be with Senator Stennis. We then contacted the Senator and tried to provide meaningful input to him. As it turned out the Senator indicated that he felt it would be necessary for the Governor to fly up and discuss the situation face-to-face with him. Governor Winter indicated that he was in the throes of a major piece of education legislation and would not be able to come up himself. The Governor then told the Senator that I would be coming to represent him and the State at the meeting. I returned to my home and made arrangements to fly to Washington. Shortly, before noon, I was contacted again by Governor Winter who indicated that there was to be a preliminary meeting that evening and asked if I would be able to attend. I was scheduled to arrive at D.C. National at 8:30 PM EST and so informed the Governor. He got in touch later stating that Senator McClure wanted the meeting at 7:00 PM, but Jim Jordan of Senator Stennis' staff was trying to get it moved to 8:00 o'clock. I was also advised that an Air Force jet would be flown down to pick me up and that Scott, AFB representatives and someone from the Pentagon would be contacting me to make arrangements for air and ground transportation. Those calls were also received and arrangements finalized.

I departed Thompson Field at 4:30 PM CST. The trip to Andrews Air Force Base lasted slightly over an hour and one-half. I was met at the aircraft by a protocol driver from the Pentagon who took me to the Russell Senate Office Building. I went straight to Senator Stennis' S-205 RSOB office where I met with his chief of staff, Mr. Eph Cresswell. Mr. Cresswell and I discussed strategy and he told me that we would be meeting with Senators McClure, Baker and possibly Byrd and Cochran to discuss the bill, the proposed amendments to be presented by the Senate and the position of the State. Cresswell then contacted Jim Jordan who was with Susan Irby of Congressman Lott's office. Jordan gave me a copy of the proposed amendments and the House passed bill (copies of which are on file for review). As I was reviewing the amendments, Ms. Irby came in and she, Jordan and I began discussing the amendments. Mr. Cresswell contacted the Senator to let him know that I had arrived. The Senator asked that we come over to his Capitol office. We left the Russell Building at about 8:20 PM.

When we arrived at the Capitol office Jordan, Cresswell, Irby and I again tried to discuss the amendments. Senator Stennis arrived about 5 minutes later and we all began discussing the bill. Senator Stennis excused himself to make sure that all the appropriate senators were available. As it turned out there was a filibuster of the continuing resolution and heated debate of the 5¢/gallon gas tax being conducted by Senators East and Helms of North Carolina. That filibuster served to free up the other senators.

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The Senator called and asked that we move to Senator McClure's office. We moved on to the office of the Chairman, Senate Committee on Energy and Natural Resources. We were met by Senator Cochran, Ms. Anna Marie Barnes of his staff, Senator Howard Baker, a representative of Senator Robert Byrd, Senator James A. McClure and the chief council of the Energy and Natural Resources Committee, Mr. Charles Trabant.

Senator McClure invited us all to sit down. I tried to observe protocol and seat myself behind Senator Stennis. Both Stennis and McClure asked that I sit directly across from Mr. McClure so as to conduct our conversation eye-ball to eye-ball. It was not until that moment that I realized that we were going to be given the opportunity to go head-to-head with Mr. Trabant and Senator McClure on the bill.

Senator McClure opened the meeting with some very cordial comments and expressed his appreciation to Senator Stennis and Senator Cochran for their untiring efforts in trying to get a responsible piece of legislation molded while diligently trying to see after the interests of their own constituents. Senator Stennis then took the floor and expressed his appreciation to the Chairman for the leadership he had exhibited in molding the very complex legislation. He then explained that Governor Winter was not able to come up himself to discuss the bill himself, but that I was his representative and whatever I had to say was supported by the Governor. Senator Stennis introduced me as having done considerable work in following the legislation and providing valuable input to him and his staff as well as the rest of the delegation on the issues regarding nuclear waste management. Senator Stennis then turned the floor over to me, which caught me by surprise.

I extended the appreciation of our Governor, our Board and our citizens for Senator McClure allowing a state at the eleventh hour to occupy his time in stating our position. I also expressed to Senator Stennis that I felt that my trip to Washington to discuss one of the 97th Congress' most important pieces of legislation was a rare honor and privilege. I explained that I had closely examined the House Bill that the Senate was deliberating over, but was not comfortable discussing the Senate's proposed amendments since I had not studied all of them. I explained that the State of Mississippi, through the Governor's Office, the Energy and Transportation Board and our congressional delegation had developed a strong posture with respect to the issues we felt were needed in the nuclear waste legislation. The strongest position that we held was that for any piece of national legislation to be effective there had to be a strong policy of Federal/State cooperativism statutorially developed.

For approximately one and one-half hours I was allowed to discuss the issues which I had previously discussed with Mr. John W. Green, Jr. on Friday, December 17, 1982, and again with Mr. Green on Saturday, December 18, 1982, and afterwards with Governor Winter and Mr. Deaton. On the flight to Washington, I took the occasion to write down those thoughts and the issues. Those issues are appended to this report in their original format.

Several of those positions seemed to catch the attention of the meeting's participants - particularly Senator McClure and Mr. Trabant. I noted as I made my appeal to Senator McClure that Trabant was taking notes. He and McClure were to use those notes to formulate rebuttal and comment on the bill and its amendments later in the evening. My major emphasis was on the following points:

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1. Schedules - I told Senator McClure that the '85 and '89 dates were much more conservative than the previously announced dates of DOE and provided for increased technical conservatism in the decision-making processes leading to the selection of those sites for repositories.
2. Population density and proximity - to populated areas - I tried to impress on the Senator that in order to develop public confidence in the federal program that the first repository should be built in an isolated area of the nation or in an area whose populace was comfortable with nuclear-related activities. That issue seemed to catch Senator McClure's attention and especially that of Senators Stennis and Cochran.
3. The right of the states to appeal to the Congress regarding a selection decision on a repository site - This was the critical issue and caused the most question and comment. I tried to address the subject of the "separability clause" and the "constitutionality issue" first indicating that a state would have no recourse at all on the "one-house ratification" provision if the courts ruled that one-house ratification was unconstitutional. Further, I tried to explain that if the Secretary of Energy made a recommendation for a site and the President upheld that recommendation then the administration's decision was fixed and any congressional decision contrary to that of the administration was subject to veto and certainly not an indication of true Federal-State Cooperation. I asked Senator McClure to give due consideration to a two-house Congressional override of a State Notice of Disapproval so that the burden of proof regarding a siting decision was not placed on any given state, but rather with the Federal Government. I used as an example that a state with highly limited resources would have to have good reason to approach the Congress with such a notice of disapproval and should not be required to expend its funds in defense of its position, particularly since a siting decision was not expected to be one that was politically popular in the affected state.
4. Federal-State relationship - I approached that subject area from four directions: 1) impact and assistance funding, 2) conflict resolution, 3) early state involvement in all elements of DOE's programs and 4) agreements for the states that were so inclined.

I explained that most states had considerable technical expertise at its disposal, but most of the expertise would be involved in other program areas. Grant programs

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should be provided to the states to enable those states to provide for their own technical assistance. I also tried to explain that impact mitigation funding at the local level would be needed. The last point that I made was that the program was a Federal responsibility and in many states, an unpopular federal program. For that reason no state should be required to put up match monies for financial assistance or impact mitigation.

On the subject of conflict resolution, I recounted the "peer review" meeting that was conducted in Columbus, Ohio, on November 9, 1982. Senator McClure and Mr. Trabant were visably angered by that situation and asked if I had any documentation. I responded in the affirmative and asked if they wanted copies of same. They were interested, but never actually asked for the copies. I also used the example to talk to the issues of consultation and concurrence, technical conservatism and public confidence in the program.

I asked that consideration be given to allowing any state that might be involved in the program to get involved at a very early stage of area characterization if not before. I discussed the work cessation request of Governor Winter in early 1980 just so that the state could review the data that had been accumulated between 1976 and 1980.

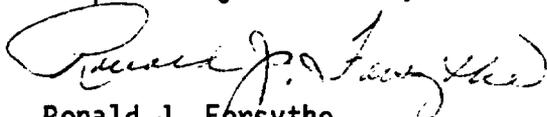
The last issues of the suite concerned written binding agreements. I discussed the efforts of the state to execute an agreement complete with a veto provision similar to that given to our sister state of Louisiana. I also indicated that some states may not be interested in entering into agreements and that states are likely to vary considerably in the makeup of their agreements.

That concluded my remarks and the rest of the meeting which lasted until about 11:00 PM was spent in responding to questions raised by Senator McClure and Mr. Trabant. After the meeting Anna Marie, Susan, Eph, Jim and Senators Cochran and Stennis told me that I had done very well and they would stick to those issues.

Since Senator Byrd had not attended the meeting, Senator Stennis asked if I would stay around long enough to meet with him to which I consented. Mr. Cresswell and I went to the Senate gallery and watched the East-Helms filibuster while Senator Stennis was meeting with Senator Byrd. At 11:15 we again met with the Senator who indicated that Senator Byrd was tied up and could not leave a caucus. I asked about the Sunday morning meeting. Mr. Jordan and Mr. Cresswell just laughed. Senator Stennis said that the meeting we had just concluded was the meeting and the points we had raised were those that they would hold out for en bloc.

I retired to the Quality Inn, Capitol Hill and notified Mr. Green of the meeting at 11:45 PM. The following morning I returned to Jackson.

Respectfully submitted,



Ronald J. Forsythe
Nuclear Waste Specialist

RJF:br

() > siting issues -
Dates - Jan 1, 1985 5 sites / 3 sites for ~~1982~~ -
4th & 5th + 1 new site July 1, 89 -

() EIS prior to Detailed Site Characterization

() > Population Density - populous areas to be avoided (>1000 people in 1 sq mi of surface facilities)

() > State participation -

() When does the state get involved

() Notice of disapproval -

() 2 houses override or 1 house sustain

() Severability = constitutional issue

() art 1 house to sustain -

() Agreements - provisions thereto

() impact funding - when / state match

() conflict resolution - binding

() technical assistance - funding

() renegotiation of agreement

PRESENTATION OF MISSISSIPPI COMMENTS
ON
THE DRAFT SITE CHARACTERIZATION PLAN
TO
THE STATE GEOLOGISTS' TECHNICAL REVIEW GROUP

November 9, 1982

Presented by:

John W. Green
Ronald J. Forsythe

Mississippi Energy and Transportation Board
Mississippi Energy and Transportation Board

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Mississippi Department of Natural Resources
Mississippi State Department of Health
Mississippi Research and Development Center
Mississippi Mineral Resources Institute

GENERAL COMMENTS

I would like to express to the Department of Energy our appreciation for providing the opportunity for the State of Mississippi to present its comments on the draft Site Characterization Plan. This Plan, prepared by the contractors and subcontractors, describes plans for conducting Location Phase activities at four salt dome sites in the Gulf Interior Salt Dome Basin. The Bureau of Geology of the Mississippi Department of Natural Resources, the Mississippi Mineral Resources Institute, the Radiological Health and Public Water Supply Divisions of the Mississippi Department of Health, the Mississippi Research and Development Center, the Institutions of Higher Learning and the Nuclear Waste Division of the Mississippi Energy and Transportation Board have worked cooperatively to formulate the review comments for the state. The comments we are presenting today have been concurred in by the State's Nuclear Waste Policy Advisory Council, the Nuclear Waste Technical Review Committee and, of course, the Energy and Transportation Board.

With regard to the National Terminal Waste Storage Program in the Gulf Interior Salt Dome Basin, Mississippi has generally always been in accord with the concept of a step-by-step, technologically sound program of study activities, that would eventually result in the winnowing down to the selection of one salt dome to be in consideration with a bed-salt site to receive an exploratory shaft. An effective screening process is a logical approach. But, what a "step-by-step, technologically sound screening program" is, of course, is open to question. The State apparently misunderstood that the Siting Criteria expressed in NWTs-33(2) would not be applied with equal weight to a site until such site is recommended to

NRC for licensing. In this document, in the introduction, it states "This document NWTS-33(2), discusses the site performance criteria---criteria that the Department of Energy (DOE) will use to screen sites and to evaluate the suitability of sites for the disposal of radioactive wastes." Later in the introduction the document states "Before a site can be determined to be suitable, the information must be complete on the full range of characteristics to allow comparison of chosen sites against all siting criteria. The ultimate suitability of an alternative site cannot be determined based on only one or two characteristics, such as tectonics or geochemistry; nor can it be expected that perfect locations will be found where every characteristic is ideal. Geologic systems are found as they are, not engineered, so each candidate location will have distinctive advantages and disadvantages which will be compared in narrowing the range of alternatives or, ultimately, in selecting sites." We, therefore, feel if there was a misunderstanding, we had reason to misunderstand, and to be surprised at some of the conclusions in the Evaluation of Area Studies of the U. S. Gulf Coast Salt Dome Basins (ONWI-109) when it was published. It was stated, in that document, certain domes were eliminated or retained for further study due to some factors or criteria having been determined to be "differentiating or non-differentiating." If this practice is to continue through Location Phase and Detailed Site Characterization Phase, then we feel it should be so stated in the SCP. Which of the criteria are going to be used in a differentiating manner should be made clear.

I do not recall any serious complaints from the State about the region-to-area screening of hundreds of Gulf Coast Salt Domes down to the eight that were investigated during the Area Phase of activities. There is some recognition now that perhaps some data available on domes presently still under consideration was available in files and not considered during Regional Characterization. An example

of this was the failure to consider the significance of 30 bore-holes drilled during the World War II era into the Richton salt stock and/or caprock for the purpose of sulfur exploration. It is our understanding, the presence of exploration bore-holes was a factor in the decision process to eliminate certain other candidate sites in salt. While we have cried some over this "spilled milk," we do express appreciation for the fact that this situation will be addressed, according to the plan, during the Location Phase of study.

We believe this relates, in principal, to another factor that we tend to appreciate. ONWI-293 is referred to as a "draft Site Characterization Plan" in the introduction and a few other places in the document. To us this indicates the Plan is not cast in granite and can be changed as new data are made available, new issues are recognized or new thinking and ideas are applied to old issues. This idea is further brought out by a statement DOE made in their response to one of the agencies of the State that commented on the Plan. This statement was, "If activities do not resolve the issue adequately, the issue will not be dropped." We would like to, therefore, suggest the Plan consider a geotechnical issue that has been addressed to some extent in the past studies, but, has still left some questions. If a dome is to be utilized for a nuclear waste repository, then the stability of said dome should be a major factor, perhaps a differentiating factor, in the decision making process. Salt domes are present because of a lack of stability in the bed salt at some period or periods in the past. We have read papers in the last few months by some competent professionals that have indicated the domes in the Mississippi Salt Basin have been stable for millions of years. Yet, there are some facts that, as best we can tell, have not been reported on that may tend to indicate otherwise.

The Bruinsburg Dome, in Claiborne County, is generally overlain by about 400' of caprock. There is a fairly large area of the dome (on the west side) that has no cap at all. Some workers have mapped faulting in the overlying sediments over this section of the dome. It would appear that the possibility exists that a spine has risen at Bruinsburg in a fairly recent geologic time frame.

Brownsville Dome, in Hinds County, has at least one graben fault block over the structure that extends to the surface. Well data indicates the upper part of this graben contains 200-250' of clastic sediments. More than one geologist has published maps interpreting these sands and gravels at the surface to be Quaternary in age. If these interpretations are correct then the tensional forces in the shallow formations, caused by upward movement of the salt stock, probably caused the grabens. These grabens, in turn, possibly occurred either contemporaneously with or after these clastic sediments were deposited.

Even at Richton Dome, some questions exist along these lines that, to our knowledge, have not been answered and should possibly be addressed during the Location Phase of study. In the Area Characterization Report, the contractor published a structure map based on stratigraphic data from shallow borings made over the dome. This map, when compared to other maps in the report, depicts the contact of the Quaternary-Miocene (where it exists) approximating the topographic contours of the land surface and the structure contours on the caprock. The Quaternary deposits apparently do not exist over the entire surface expression of the dome, possibly because of erosion, and we do not consider this contact a very reliable one upon which to base a structure map. But,

it could indicate the base of the Quaternary has been arched perhaps by some relatively recent domal growth. This Richton topographic high has not, as yet, eroded down to the point that a stream flows over the dome, which is the situation at Cypress Creek Dome. The primary stream channels are found both to the east and west of this high.

We are certainly not intending to imply that these bits of evidence prove there has been post-Miocene movement of some of the domes in the basin, particularly Richton. But, neither have we seen where these bits of evidence have been explained to the contrary.

There are other, somewhat more basic, flaws we have commented on previously in the SCP. For instance, on pages 2-2 and 2-48 lists of key issues for Richton and Cypress Creek Domes are stated which "will be addressed during location studies. These issues will be addressed and an attempt made to resolve them to provide a sufficient level of detail for a screening decision." All of the issues listed are geotechnical, and they are the very same issues listed in the Location Phase Activities Schedules beginning on pages 2-176 and 2-191 for Richton and Cypress Creek Domes, respectively. There are many pages in the plan devoted to discussion of socio-economic and environmental issues, many of which were raised in the planning meetings in which this state participated. There is no indication that they will be addressed during Location Phase.

Chapter 3 of the SCP deals with the Detailed Site Characterization activities which are to follow the Location Phase. It is stated these plans will begin following the decision on the location of an exploratory shaft. In this chapter it is further stated the Detailed Site Characterization Plan is to

develop a program to address the geologic and geohydrologic issues which arise. Again, in the discussion sections of this chapter, subjects related to socio-economic and environmental issues are addressed. Also, again, in the Detailed Site Characterization Summary Tables, near the back of the document, Criteria VIII, IX, and X are omitted. These are the ones dealing with socio-economic and environmental concerns. It appears to us from this Plan that the Program could progress right on through the Site Characterization Activity Phases without addressing the issues related to the environment or to the people of our State. The bulk of the comments of the State agencies on the plan have stemmed, generally, from the feeling that the criteria used for screening have not been adequately addressed. For all practical purposes, the program has screened down from several hundred domes to two (since Oakwood is eliminated and Cypress Creek deferred) and is heading all the way through the Site Characterization Phases without addressing the people issues.

A moment ago, I mentioned the Location Phase Activities Schedules on pages 2-176 and 2-191 for Richton and Cypress Creek, respectively. For the various issues which are to be addressed during Location studies, it is indicated a detailed activity plan is to be developed and submitted to ONWI for their approval. It is then forwarded to DOE for their concurrence (which term implies non-concurrence when dealing with states) and then on to the states for their information. In the State comments on the SCP, concern was expressed that the states would have no opportunity to have any input or make suggestions concerning the plans until after they were approved by DOE. It appears to us that if the Department was wanting to achieve objective study results, it could at least listen to suggestions from both

sides of the table before making these decisions. One can very easily get the impression that DOE would prefer to fight-off and downplay state criticism of something done in the past, rather than entertain meaningful input from the state -- in spite of their policy of consultation and cooperation. In DOE's response to this comment it was stated, "---- it is considered an unnecessary delay to hold up field work pending state review of these more detailed plans. If concerns arise over the implementation of specific portions of the plan we will be prepared, as always, to discuss suitable modifications." If all of this should take place as is laid out, and if by some miracle the state brought up a valid point that results in a modification after a study was already implemented, why would not an "unnecessary delay" then occur? Why would not a budget waste occur? It would appear getting all the plans finalized before a study was put into motion would be a more professional and economically feasible approach.

SPECIFIC COMMENTS

For the past two years, agencies of the State of Mississippi have provided specific comments on technical documents related to the environmental and geologic characterization of the Mississippi Study Area to the Mississippi Energy and Transportation Board. The documentation on which the agencies have submitted these comments has been a product of contractors to the U. S. Department of Energy and subcontractors thereto. We have not been officially appraised of any decisions by the Department of Energy to accept, reject or modify any of the documents on which the State of Mississippi has provided comments.

It should be noted by you, the Technical Review Group, that the state comments on the draft Site Characterization Plan are the third part of the series of comments which started with comments on the Environmental and Geologic Area Characterization Drafts, the first draft of ONWI-109 (which subsequently evolved into the Location Recommendation Report) and culminated with our comments on ONWI-293, the draft Site Characterization Plan. We would trust that the members of the SGTRG have had occasion to review all of those comments, for the record would be incomplete if the comments on the SCP are examined by themselves.

At a meeting of a subcommittee of the State's Nuclear Waste Technical Review Committee on October 12, 1982, and a subsequent meeting of the full committee on November 2, 1982, a series of ten (10) specific issues were identified as those that are to be presented at this meeting. Those issues and specific comments are presented as Table I. I respectfully request of the Technical Review Group that you hold any questions until all of the issues have been

presented. At that time, the technical representatives of the State would welcome dialogue on any and all of the issues.

As a final preliminary comment before I address the issues specifically, you will note that one of those issues on the Table is not geotechnical in nature but rather deals with socioeconomic and environmental considerations. We recognize that the expertise of the members of the Technical Review Group is in geology and in disciplines related thereto. However, based on the fact that issues of a non-geotechnical nature have been raised by the State, we feel that the record would be incomplete if we did not cite those issues. We do not necessarily expect any opinions from you on those particular issues, unless you prefer to offer some.

Specific issues for consideration by the SGTRG.

I. SCREENING ISSUES AND THE NWTS-33(2) CRITERIA.

Screening has been described as a technologically-conservative process in which a step-by-step approach is used to examine geologic regions, areas and eventually specific sites for their potential as nuclear waste repositories. The screening process is conducted by application of certain geotechnical, environmental and socioeconomic criteria. As early as 1977 a series of criteria that were to be applicable to site characterization were developed and recommended for use by the IAEA and DOE's Office of Waste Isolation. Those criteria have gone through several modifications that have led to the Site Performance Criteria specified in DOE/NWTS-33(2), February 1981.

An examination of available data allowed ONWI to progress from the regional phase to the area phase of study. Two criteria were applied at that stage of the screening process which led to a recommendation of eight domes to

be studied during the area phase of study. The state had no particular problems with that methodology; however, at the area phase of study which led to the Location Recommendation Report and the draft Site Characterization Plan the system apparently broke down and has caused considerable concern on the part of the agencies that have been reviewing the SCP.

The Bureau of Geology has stated:

"We have no objection to the concept of a stepwise screening process. What we are saying is that DOE is failing to follow such a process. The Bureau of Geology has made no complaint about the region-to-area screening of hundreds of Gulf Coast salt domes down to eight (8) candidate domes. However, the process began to break down during area characterization. It was our belief that the area characterization phase would involve the geological characterization of all eight (8) candidate domes, and comparison of each of the eight (8) domes with the other seven (7), according to the ten (10) established criteria listed in ONWI-33(2). We expected also that the geological characterization would work toward identifying those characteristics of each dome that were favorable and those that were unfavorable for the siting of a nuclear waste repository in the dome, with the qualification that identification of a fatal flaw would eliminate a dome from further consideration. We expected that at this and future phases such a qualification would come from the list of ten (10) criteria.

"The Bureau of Geology contends that DOE and Battelle departed from the stepwise screening process prior to completion of the area characterization phase. A comparable level of study was not conducted at each of the candidate domes during area characterization, and a proper comparison of the domes was not possible. For this reason and for technical reasons, the Bureau of Geology does

not recognize the validity of the conclusions of ONWI-109 in eliminating four (4) domes and ranking the remaining four (4) by suitability. (The technical reasons have been discussed in our ACR and ONWI-109 comments and will be discussed further in future comments.) The domes that remain after screening may be left because the necessary studies to detect any flaws that may be present have not been done, not because the domes have been shown to be suitable. In other words, the domes that remain after screening are not necessarily more suitable for further study than the domes that have been screened out.

"Battelle has departed further from the stepwise screening process in the location phase of site characterization. During the location phase, geologic studies were to be conducted to provide data that would allow screening of the four (4) candidate domes down to one (1) dome. However, even before location phase studies were begun, Oakwood Dome was pre-screened out and we were told that a second dome also would not be studied. If Oakwood Dome were so unsuitable as to be eliminated from location phase studies before such studies begin, how did it survive screening in the area phase? This matter illustrates that a stepwise screening process using technical data based on the ten (10) established criteria is not being followed.

"The March 31, 1981, draft of ONWI-109 left us with the impression that Battelle intended to study the four (4) recommended domes in the location phase prior to screening to one (1) dome. That would have been consistent with the stepwise screening process. The February 1982 version of ONWI-109 has been revised to apparently recommend location studies on only two (2) domes. Specifically a comparison can be made of Section 3.3 on page 78 of the 1982 version with the corresponding Section 6.3.3 on page 154 of the 1981 version.

The first two paragraphs of the new version are essentially the same as in the former version, except for the five additional words at the end of the second paragraph. The third paragraph is new in the 1982 version.

"The Bureau of Geology learned for the first time by reading the December, 1981 Final Draft of ONWI-109, received by this agency March 26, 1982, page E-44, that only three (3) of the ten (10) established criteria were used for screening during area characterization. Dome size and depth to salt are from Criterion 1, dissolution potential is from Criterion 2, and exploration history and resource potential are from Criterion 6, for a total of 3 criteria. This statement was repeated in the February 1982 version of ONWI-109 (received April 29, 1982) and in DOE's "Response to Comments from the Department of Energy and Transportation" (received May 4, 1982). We had been told previously that the ten (10) established criteria were being used in area characterization.

"The underlying thrust of our comments on this point is that screening is being done without benefit of adequate technical data about the domes. The location phase studies will not generate enough data upon which to make a selection of a preferred dome or to compare it with other salt sites. Our review of the ACR left us with serious doubts about the technical accuracy and completeness of the reports. As a result, we disagreed with a number of specific findings, and conclusions developed by the program, as specified in our ACR comments. The SCP as outlined in ONWI-293 will not address some of the unanswered questions and deficiencies of previous phases until after a preferred dome has been selected."

Other agencies of the State have raised similar questions and posed comments on the screening issues. For example, the Director of the Mississippi Mineral

Resources Institute has stated, "I have read ONWI-293, Site Characterization Plan, Gulf Coast Salt Domes and find it a very good conceptual plan of study, addressing the various areas and questions for which we previously held reservations. However satisfactory ONWI-293 is as a conceptual plan, it cannot be considered in satisfying a very real need for a comprehensive study of the Richton and Cypress Creek Domes if they are indeed to be considered prime candidate repository sites.

"I continue to harbor some concerns in areas such as semismicity, tectonics, ground water hydrology and dissolution. For example, from my understanding of the screening process record, other domes in Texas and Louisiana were disqualified on the basis of dissolution evidence which was not as strong or convincing as that for the two Mississippi domes. Hopefully, these and other questions can be clarified as soon as possible.

"My main concerns are centered on the lack of a clearly definitive, comprehensive study, for which ONWI-293 may serve as an important first step, but not an end product in its present form. Each subject area must be fully developed."

The State Energy and Transportation Board made these comments on screening: "One of the areas with which I have a serious concern is in regard to the differentiability of issues. In ONWI-109, the only real differentiating issue is noted to be dome size. Table 6-3 of ONWI-109, indicates that for a "standard size", 75,000 MTU equivalent, repository, only Richton, Cypress Creek, Vacherie and Oakwood are large enough to accommodate such a repository.

"As I read through the SCP I looked for the same philosophy and was unable to find even an inference of differentiability, or as I prefer to call it --

a weighting factor assignment. My opinion is that the plan could be significantly improved by incorporating a treatise on this subject into the plan, particularly with respect to detailed site characterization.

"The 'key issues' section of the SCP provides the reader with the inference that (1) the state's planning participants concurred in the key issues identified in the location phase study plan and (2) the issues identified are the only issues which we felt needed resolution. It must be noted that at the time these 'key issues' were noted, the next phase of study was to be the site characterization phase. Now, it appears, and has been apparent that these key issues are to serve as the ultimate screening criteria leading to a decision on selection of a single dome for consideration as a candidate for emplacement of an exploratory shaft. This philosophy tends to ignore many of the issues raised by the State's agencies during the assessment of the area characterization reports and ONWI-109. It is not a technologically-conservative approach.

"NWTS-33(2) defines ten (10) major technical criteria for the geologic disposal of Radioactive Wastes. There is no indication of any one of the criteria being more important than any of the other criteria; however, in the SCP there is strong indication that the geotechnical considerations are more significant from a screening standpoint than those issues dealing with socio-economic impacts, environmental impacts and demography.

"It is my impression that Chapter 3, when combined with the 'key issues' of Chapter 2, forms a sound basis by which a comprehensive geotechnical assessment of the four domes can be made. The approach used in the SCP, as I have noted, avoids the issue of thorough comparison of the four domes which the agencies of the State have encouraged all along. For the sake of building

public confidence, I would again recommend that a mere 'licensability' assessment be set aside and the concept of best possible licensable site be utilized.

That concludes my remarks on the first issue.

II. SITE COMPARABILITY.

The issue of comparison of sites has been a very sore subject with the agencies of the State. It has been our position, and continues to be, that in order to make a recommendation on a site, or location, a suite of comparable data should be available to support such a recommendation and decisions made subsequent thereto. That has not been the case in the past, particularly Area Characterization of the three study areas of the Gulf Interior Region. The criteria and subelements thereto that were considered to be differentiating by DOE/Battelle were depth and lateral extent of the host rock, dissolution, mineral resource potential and exploration history. The contention of the State is that sufficient supportive data were available prior to the onset of Area Characterization to detail the depth and approximate lateral extent of the host rock, the probable mineral (hydrocarbon and sulfur) resource potential and past exploration history. We also contend that closer examination of several of the other issues such as dome stability, seismicity, and regional and local hydrology would have made the location recommendation report more credible.

It is our stated philosophy that in order to rank the domes, sufficient, comparable data should be available. We do not believe that to be the case in the previously conducted studies. I will present in several of the following issues to be addressed, examples of the lack of comparable data. There is one example that will not be addressed further that I would like to bring up. In early 1977, the Site Selection Program Plan was prepared by the Law

Engineering Testing Company for the Office of Waste Isolation. A table included in the document specified the depth to salt and approximate areal extent at a given horizon. One has but to read the content of that table and to compare those data and the requirements of the reference conceptual repository published in both ONWI-109 and ONWI-283 to recognize that of the eight domes surviving the region-to-area screening, only Richton, Cypress Creek, Oakwood and Vacherie are large enough to undergo continued evaluation. It must be noted, however, the reference repository size cited in Y/OWI/TM-48 (1978) was altered, calling for both a larger repository and a larger buffer. For the example repository cited in DOE/EIS-0046F (800 Hectares), Richton and Cypress Creek are large enough to house such a facility. For the reference repository cited in ONWI-109 and ONWI-283, 600 Hectares with an 800' buffer, Richton, Cypress Creek, Vacherie and Oakwood survive the lateral extent criteria. It was rather interesting to note that one dome from each of the two other study areas, Texas and Louisiana, were able to be included after the modification of reference repository size.

We do not disagree with the DOE philosophy that a large buffer zone is not only desirable but critical; provided, however, that the buffer is continuous and fairly homogeneous throughout its extent. That fact leads me to a few remarks on acceptable, licensable sites versus best possible licensable site. It appears that the Department of Energy has misunderstood our philosophy of "best licensable site". Concerning the quote from DOE/NWTS-4 provided in DOE's response to the Mississippi comments, we agreed that nature has not provided "perfect" or "flawless" sites for repositories. Therefore, we must take advantage of what nature has provided and what society has not altered or is likely

to alter in the future. We are of the opinion that all other things being equal, the larger the buffer the less potential for unanticipated releases of radio-nuclides to the biosphere. What we do take issue with, however, is the fact that all other things have not been proven to be equal, in some cases have not been thoroughly examined for comparison and using the SCP as a guide for future programmatic activities may not adequately be addressed. It has been stated by representatives of the Bureau of Geology that one cannot determine the existence of a flaw unless one looks for that flaw.

III. REGIONAL HYDROLOGY

The Bureau of Geology has provided the following comments on Regional Groundwater Hydrology:

"All parties (participating in this review process) agree that regional groundwater hydrology around the two Mississippi candidate salt domes has been inadequately studied and modeled. Logically, this would have been done during geologic characterization of the 1000 plus square mile study area (Area Characterization). The failure to do so was one of the major shortcomings of the Area Characterization Report; this was probably caused by the nature of the study area boundary selected. Our complaint at this time is that a study of regional ground-water hydrology, already overdue, will only be started in the location phase, with more complete study during detailed site characterization. Such studies should be completed around each candidate dome and compared before any determination is made of the suitability or unsuitability of any dome for the sinking of a shaft.

"DOE has stated that work on a program of studies has started. We do not deny this; we merely contend that such studies should have been completed

before screening from eight (8) domes to four (4) domes. In response to comments, DOE states that the five (5) regional sites chosen will be drilled during location phase. However, in ONWI-293, Sec. 2.1.1.7, Regional Hydrology, p. 2-9 and 2-10, for Richton Dome, and Sec. 2.2.1.8, Regional Hydrology, p.2-56 and 2-57, for Cypress Creek Dome, it is stated that: 'The program will be carried out in a series of steps over several yearsTwo sites (of the 5) have been chosen to be started in the first phase of the program.' The ground-water hydrology study will not be completed before screening to one dome, resulting in a site selection without the benefit of a completed hydrologic study.

"Another facet of the Bureau's dissatisfaction with the hydrologic studies is the construction of a regional ground-water flow model. We contend that such a model should have been completed prior to location phase studies. This contention has been supported verbally by representatives of the local District Office of the Water Resources Division, USGS, at planning meetings. Similar comments were voiced by representatives of NRC in written comments on their tour of the Gulf Coast Salt Dome candidate states."

IV. LOCAL (NEAR AND OVER-DOME) HYDROLOGY

The discussion of this issue is intended to deal, not only with near and over-dome hydrologic and hydraulic conditions, but also with suspected (and reported) saline anomalies and possible dome dissolution. Comments on these topics have been presented by both the Bureau of Geology and the Department of Health. With some editorial modification those comments follow:

"The questions of saline anomalies and dome dissolution are interrelated and are of concern at both Richton and Cypress Creek domes. The proposed

studies of these matters are structured differently at these domes, however, and for no apparent reason. For example, concern about the salt-caprock contact on Cypress Creek Dome is expressed in the text, but not at Richton Dome even though problems there may be as severe or greater. The topographic indication of possible dissolution and subsidence at Cypress Creek may require an additional step in the investigative phase, but not a different approach than the investigation planned at Richton. Two boreholes are planned for Cypress Creek Dome specifically to study the salt-caprock contact. There are several boring logs from the sulfur exploration holes on Richton Dome which record a cavity at the salt-caprock contact; they also describe very porous calcite and limestone zones at the interface. The presence of this zone of porous and permeable material may hold the key to resolving the dome dissolution question or the key to the high base of fresh water south of Richton Dome.

"Data from previously drilled sulfur exploration wells penetrating the caprock-salt interface at Richton may indicate a more severe dissolution problem than that existing at any other dome surviving the area-to-location screening process. To the best of our knowledge, the data from these wells were not utilized during Area Characterization studies. This is evidenced by the SCP that indicates this data will be obtained during location phase studies. Data from these wells indicate a porous caprock-salt interface. Dome dissolution is one (1) of three (3) screening criteria used from the ten (10) criteria outlined in ONWI-33(2). The Bureau believes this places particular significance upon the issue of dome dissolution at Richton Dome. It is the further contention of the Bureau that these issues should have been resolved earlier in the investigative phases of the screening process.

"Dome dissolution and saline anomalies are key issues in the screening process, but the proposed studies will prove inadequate to the task. The studies are not flexible enough to allow for any additional work to be done during the screening process. Our complaint can be illustrated with the example of the saline anomaly over Richton Dome. One hole will be drilled over the east side of the dome to investigate the anomaly; if this does not identify the origin of the anomaly, one additional site (cluster of wells) will be drilled off the dome to the south. This is not a technically conservative, nor even a scientific, program of investigation.

"Although the Bureau did not address local ground-water hydrology in their comments on ONWI-293, we do have some thoughts on this topic. The Site Characterization Plan indicates an inventory of existing wells and potential usage. Does this plan adequately address future ground-water withdrawal with respect to repository operation and its effect on local ground-water hydrology? Local hydrological studies appear to be centered on shaft construction and its subsequent effect on local hydrology. What effect does potential additional ground-water withdrawal have on the present balance between the hydrological regime and the salt stock? The question concerns the potential for man induced accelerated salt dissolution."

The comments presented by the Radiological and Water Supply Branches of the Department of Health deal with the subject from the standpoint of ground-water withdrawal.

"At this time, very little environmental work has been done. The majority of the work has been of a geology/hydrology nature. However, at times, it is very difficult to separate geological studies and environmental studies. One case in point is the impact that a repository will have on the groundwater in this

area. Water availability in this area is a critical issue and should have been addressed in the Area Characterization studies. The Mississippi State Department of Health staff is opposed to the deferral of ground-water impact studies any longer.

"MSDH staff has requested information from DOE on the water requirements both during construction and operation for a repository located in the Gulf Interior Region. At this time, this information has not been received. We did receive a copy of ONWI-265, Water Sources and Conservation Study for the Paradox Basin, Utah, which outlined the basic water needs for a repository. This report did include the impact that the repository's employees and their families would have on a local community. However, a review of this report indicated that the data presented is almost worthless. The assumptions made in the report do not allow for a realistic evaluation of the problem in Mississippi. The water needs outlined for the local community represent only 22% of the actual capacity that would be required by the projected population. The report did not allow for the water needed during the construction phase. Because of these reasons, this Agency's staff feels the Site Characterization phase should address water availability and the environmental and geological impact that a repository will have in this area.

"The report states that information from regulatory agency files will be used in determining groundwater stress. The data contained in the water supply files at the MSDH are not as current as would be desirable. Therefore, we recommend that pump tests be performed on all major users of groundwater in this area."

V. TECTONICS AND SEISMICITY

The Bureau of Geology, the Geology Department of the University of Southern Mississippi and the Mississippi Mineral Resources Institute have provided comments on this issue. Those comments are as follows:

Bureau of Geology

"The seismo-tectonic region approach to seismic risk analysis that has been used may give an incomplete picture of seismicity in Mississippi. The Mississippi study area is in the Interior Salt Basin Region, which obviously has had fewer earthquakes than other regions.

"The boundaries of the seismo-tectonic regions were drawn somewhat arbitrarily and are not always delineated by obvious geologic or geophysical features (ACR draft P. 2-99 and 2-103). For example, the Modified Mercalli intensity VI-VII Batesville, Mississippi, earthquake of 1931 and the intensity VI Greenville, Mississippi, earthquake of 1969 are in the Ouachita Region and not considered relative to the Mississippi Study Area, even though their location is along the northern boundary of the Mississippi Interior Salt Basin.

"The New Madrid earthquakes of 1811-1812 and the 1886 Charleston, South Carolina, earthquake were felt throughout Mississippi. Even the Anchorage, Alaska, earthquake of 1964 affected water levels in observation wells in the State. Over 50 earthquakes with epicenters outside Mississippi have been felt in some part of the State during the past 250 years of recorded history.

"The text of ONWI-293 downplays the earthquake risk in southeastern Mississippi, probably as a result of statements made in the Area Characterization Report. In this agency's ACR comments, we pointed out and discussed at length that the ACR gave an inadequate overview of Mississippi seismicity, that

the 'regions' approach taken was improper, that the possible correlation of area earthquakes with tectonic features such as the Pickens-Gilbertown Fault Zone or the abrupt change in depth to basement was not considered, and that the assignment of Modified Mercalli intensity VI as the maximum effect to be expected may not be a conservative estimate. At the October 12, 1982, meeting of the subcommittee, Dr. David Patrick, USM, stated that the Corps of Engineers uses intensity VII as a comparison earthquake intensity for their construction projects in this region.

"The SCP outlines proposed seismicity studies emphasizing the Phillips Fault System. No known seismic event has been associated with the Phillips Fault System. Previous reports generated by nuclear waste studies have stated that no earthquakes are associated with specific tectonic features in the Mississippi study region. However, the SCP proposes locating seismic instruments in the area of the Phillips Fault System. A more suitable approach would be to monitor seismic activity at a tectonic feature that has experienced recorded seismic activity such as the nearby Pickens-Gilbertown Fault System.

"The 1978 Melvin, Alabama, earthquake is repeatedly mentioned in the SCP in discussion of the Richton Dome location studies and in previous documents as if it were an isolated event. Actually, the 'Melvin' earthquake was one of four Clarke County, Mississippi, area earthquakes of 1976, 1977, and 1978(2). In fact, the earthquake of May 3, 1977, is listed as being of greater magnitude than the earthquake of December 10, 1978. Clarke County, Mississippi, is located in southeast Mississippi, approximately 40 miles northeast of the Richton Dome. Whenever the SCP and previous documents mention the 1978 Melvin earthquake, one usually finds the phrase 'which may have been related to nearby oil

and gas production'. (SCP, p.2-18 and p. 3-23). The ACR, ONWI-109 and SCP reports neglect to point out that Melvin, Alabama, is located on or near the Pickens-Gilbertown Fault System. The Bureau of Geology does not dispute the possible link between seismicity and injection/withdrawal activities that have been noted in a number of other investigations. We do, however, object to the linking of Clarke County area earthquakes with oil and gas production without presenting suitable substantiating evidence and without exploring the possibility of these events being linked with the nearby Pickens-Gilbertown Fault System.

"The SCP is in error in the placement of the Phillips Fault System at Melvin, Alabama (p. 3-23 and p. 3-87). Such errors make the SCP difficult to interpret. The Bureau is unable to confirm if the seismic instrumentation will be installed at the location of the Phillips Fault System or near the recorded seismic activity which coincides with the Pickens-Gilbertown Fault System. The SCP indicates that a microseismic network will be installed at Richton Dome. Although the location of a microseismic network at Richton Dome is needed to detect any possible dome movement, the Bureau questions if this is sufficient instrumentation to characterize the seismicity of the area."

University of Southern Mississippi - Department of Geology

"Generally, the specification of the credible earthquake and resulting ground motion for the candidate sites appears to be insufficiently conservative considering the long use-life and critical nature of the proposed facilities. The 1931 earthquake of Northern Mississippi (MM Intensity VI-VII) as well as the 1930 Baton Rouge earthquake (having an MM Intensity of VI in some lists and VII in others) argue for a credible earthquake greater than MM Intensity VI. The application of a design earthquake based upon an MM Intensity VI event which

would not, if far-field, affect well-designed structures and not considering the high probability that an MM Intensity VII event can occur practically anywhere do not seem prudent. The specified acceleration of 0.06g due to an MM Intensity VI at the dome is particularly non-conservative considering that a near-field event of that intensity could produce an acceleration over 0.40 g."

Mississippi Mineral Resources Institute

"While descriptions of proposed further drill studies are generally definitive and considered satisfactory, the presentation for additional seismic work is lacking. Reference was made to the need for an additional line or lines in the vicinity of a proposed bore hole; however, no specifications were offered defining the depth to which a specified level of resolution would be required. Further, no definite track layout was offered or requirements to intersect such worrisome tectonic features as the Phillips Fault Zone, 5 miles to the north of Richton Dome."

VI. DOME HISTORY AND HUMAN INTRUSION

A total of thirty-four (34) sulfur exploration wells were drilled during the prior history of dome exploration. Of these at least thirty (30) wells penetrated the caprock and eight (8) penetrated into salt. Available data from these exploration wells show porous conditions existing in the caprock and at the caprock-salt interface. Consideration of the porous condition of the caprock and caprock-salt interface should have been utilized during the area to location screening phase. The SCP indicates that these data will be obtained during the location phase studies. The fact that exploration wells had penetrated into the caprock or salt has been used as a criterion for screening other candidate domes from further consideration as a repository site. Equivalent data at Richton Dome has not even been obtained prior to location phase studies.

VII. NATURAL RESOURCES

Gas and oil production and exploration activities have occurred and are still in evidence in the entire Mississippi study area. Cypress Creek Dome has an active field near the north west flank. Glazier Dome, possibly part of the same salt ridge on which the Richton Dome occurs had a small oil field to the west of the dome. On the northern end of that same ridge is the Tiger oil and gas field and to the west of the Tiger field is the Ovetto oil field. Approximately ten (10) miles east of the Richton Dome are several oil fields located near a north-south oriented salt anticline which approximately parallels the salt ridge on which Richton Dome occurs. Those fields are North Sand Hill, Sand Hill, Flat Branch and Avera. With the exception of the Ovetto and Sand Hill fields, most of these fields are fairly recent discoveries, Flat Branch having a discovery well completion in 1980. As the reservoirs from the existing fields are depleted, it is likely that speculative exploration, particularly into the deeper formations will take place in the future depending, of course, on economic factors.

The Bureau of Geology has supplied these comments on natural resource potential:

"It may be difficult to predict the value future generations may place on mineral resources associated with salt domes to be evaluated as a possible repository site. The value placed on these minerals by this phase of study may be far too conservative for even near future generations. For example Cypress Creek is a recently discovered dome and economic exploration has not achieved the same level here as at other domes. Hydrocarbon exploration and eventual production at Cypress Creek Dome is a direct result of a greater demand for domestic petroleum supplies. Another example is a recent request from the private

sector concerning data on the sulfur exploration test wells at Richton Dome. This request was by the same company which conducted the original exploration indicating renewed interest in this commodity.

"During Area Characterization studies, fresh ground-water resources apparently were not considered of potential economic significance. The Bureau of Geology along with other State agencies charged with the responsibility of protecting ground-water resources believe this commodity to be our number one resource. The Bureau is encouraged that ONWI-293 has placed some measure of emphasis on this subject.

"Another mineral of potential economic significance is lignite, which is now receiving considerable interest in the State. The ACR considered only the lignites of the Claiborne and Wilcox Groups. These potential lignite deposits are stated to be approximately 1,000 to 3,000 feet below the ground surface, making potential development of these deposits with present technology speculative at best. The Bureau believes that before the potential for lignite production at the domes be excluded from consideration, a study should be done concerning the possible presence of Miocene age lignites above the candidate domes. Concerning the assumption that only Claiborne or Wilcox Groups contain lignite beds thick enough for commercial development, it should be pointed out that thick lignite beds were encountered in Miocene deposits over Tatum Dome. The cumulative thickness of lignite described by D. H. Eargle (Geology of Core Hole WP-4, Tatum Dome, Lamar County, Mississippi, 1962. Dribble 19) in the Catahoula sandstone above the dome between the depths of 784 feet to 930 feet to be approximately 55 feet, of which one bed was measured to be 31 feet thick."

From the Mississippi Research and Development Center these comments are provided:

"The Richton area, as well as all of the Mississippi study area, is blessed with an ample ground water supply. If depletion of ground water supplies continues in other areas of the country at present rates, this area may experience substantial population growth in the future. Ground water is a resource and may be a very valuable resource in years to come. To disregard this natural resource's future value may be like disregarding the present-day value of a large oil field."

VIII. REGIONAL UPLIFT - STATUS OF THE HOLDAHL-MORRISON REPORT REVIEW.

"The SCP text discussion continues to downplay evidence of tectonic uplift and, again, without substantiation, states that geomorphic evidence indicates stability for several million years. Please refer to the location phase portion of ONWI-293, Section 2.1.3.4 Regional Uplift on page 2-16 and Section 2.2.3.4 Regional Uplift on page 2-63, where you will find the following sentence: 'The Cornell University report will be evaluated and the results will be weighed against geomorphic evidence, which indicates that the region has been stable for at least the past several million years.'

"The Cornell University report referred to in this statement is a review of the Holdahl-Morrison paper which indicates uplift in southeast Mississippi of up to four millimeters per year. The Bureau was informed more than two years ago that Cornell University was to review the Holdahl-Morrison paper. The Bureau has not received a report which reviewed the Holdahl-Morrison paper; however, recent geological literature is available authored by Cornell University professors which reproduces the Holdahl-Morrison maps and attests to the veracity of the existence of uplift in southeast Mississippi.

Brown, L. D. and J. E. Oliver, 1976, Vertical crustal movements from leveling data and their relation to geologic structure in the eastern United States: Reviews of Geophysics and Space Physics, v. 14, no. 1, p. 13-35.

Brown, L. D., and R. E. Reilinger, 1980, Releveling data in North America: implications for vertical motions of plate interiors: American Geophysical Union, Dynamics of Plate Interiors, Geodynamics Series, vol. 1, p. 131-144.

Jurkowski, G., and R. Reilinger, 1981, Recent vertical crustal movements: the eastern United States, NUREG/CR-2290, 74 p.

"The Bureau does not defend nor refute data and conclusions contained within the Holdahl-Morrison report. Since ONWI refutes the Holdahl-Morrison conclusions of uplift in southeast Mississippi, the Bureau would like to see the data which supports ONWI conclusions. In like manner, the Bureau would like to see data which supports ONWI conclusions that geomorphic evidence shows the Mississippi Area to be stable."

IX. SOCIOECONOMIC AND ENVIRONMENTAL CONSIDERATIONS

The Mississippi Research and Development Center has provided the following comments on socio-economic impacts:

"It appears that DOE is of the opinion that all socio-economic impacts can be mitigated to the point that most socio-economic issues and mitigation procedures need not be studied in detail until a location for a repository is determined. This presumes that socio-economic costs to both the federal government and private citizens are insignificant - relative to the remaining nuclear waste repository considerations.

"It is our belief that these costs may well be significant at the Richton location. Highway relocation, land values, future development potential and the general attitude of the public toward a nuclear waste repository at this location impose potential costs that are significantly different from other locations. These costs are in the form of federal expenditures, loss of actual and perceived value to private citizens and delays in construction.

"Mississippi Highway 42 now crosses the Richton Salt Dome. A repository at this location may necessitate a rerouting of the highway. This would result in costs for additional land purchases, construction costs and construction delays.

"Land values in the Richton area may be higher than in other potential locations. We have yet to see an estimated cost of land purchases in the Richton area versus some other area. Not only have we not seen this comparison but we have seen no study that investigates the impact of a repository on land values.

"Land acquired by the federal government for the Desoto National Forest and Camp Shelby (a military training base) has left Perry County (the county in which the Richton Salt Dome is located) with only half as much privately owned land as they once had. In addition, much of this land was acquired through condemnation. Add to this the feeling by the local citizens that the nuclear explosions at the Tatum Salt Dome (in Lamar County) were mishandled and you have an anti-federal government and anti-nuclear waste psychology that is probably unmatched anywhere in the U. S.

"This perception by the local people could perhaps cause the largest cost because of legal delays, political maneuvers and local hostilities.

"Delays in informing the public about the economic impact, risks, and mitigation procedures, only reinforces the local distrust. We feel it is to the

benefit of the U. S. government, DOE and the local citizens to provide, as soon as possible, socio-economic information about the potential repository. Delays in a concerted effort to inform the public will only result in very costly delays in the project if the Richton Salt Dome is selected.

"Given the aforementioned consideration, the socio-economic impact and deferment of socio-economic studies may well have a significant cost associated with them. It is an injustice to both the federal government and affected local citizens to assume that the socio-economic impact is insignificant."

The State Department of Health offers this comment on environmental issues:

"The overall scope of the plan appears to be sufficient as far as environmental issues are concerned; however, the details of these plans are not outlined in the study. Before these studies are finalized, MSDH staff would like to have the opportunity to discuss these details with the appropriate parties. We are sure this can be accomplished without unnecessary delay in the program."

X. ACTIVITY PLANS

A comment on the timing of the distribution of the Activity Plans is provided:

"An immediate concern of the Bureau of Geology is the timing of the information in the activity schedules and the lack of dissemination of activity plans to State agencies. According to the schedules in the SCP many of the activity plans should already have been prepared. Activity plans will be sent to Mississippi E. & T. for information only after they have been approved by ONWI and concurred by DOE. This could take three (3) months or more after submission of the plan to ONWI. That schedule completely neglects any State participation, consultation or concurrence. We would like to see the activity

plans as soon as they are drafted so we could provide advice on how they may be improved, but the schedules show that State personnel will be informed of what is going to happen only after all decisions have been made."

Summary

Once again, on behalf of the State of Mississippi, and her agencies and Institutions of Higher Learning that have been involved in the review of and comment on the Site Characterization Plan, I would like to express an appreciation to you the members of the Technical Review Group for your involvement in this peer review process. I hope that the information that has been presented here today will give you a better understanding of the positions taken by the State with respect to the Plan.

At this time I will relinquish the floor to the technical representatives of State who will respond to any questions or comments you might have in the time remaining.

TABLE I

SPECIFIC ISSUES

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