MINUTES OF NUCLEAR WASTE BOARD SPECIAL MEETING
March 1, 1985

1:30 p.m.
EFSEC Hearings Room
Building #1 - Rowesix
4224 Sixth Avenue S.E.
Lacey, Washington 98504

Board Members Present:

Warren A. Bishop, Chair
Senator Sam Guess
Representative Shirley Hankins
Representative Dick Nelson
Representative Nancy Rust
Senator Al Williams
Andrea Beatty Riniker
Curt Eschels
Richard H. Watson
Ray Lasmanis, DNR Designee
Dr. John Beare, DSHS Designee
Dr. Royston H. Filby, Water Research Center Designee
Bob Shirley, representing Senator Barney Goltz

The meeting was called to order by Warren Bishop, Chair.

Mr. Bishop reported this meeting was called for the express purpose to review the report of the Attorneys General on the litigation potential, and to continue review of the draft Environmental Assessment. He recommended another work session of the Board on the following Friday, March 8, to refine the comment statement that will be submitted to USDOE on March 20.

Mr. Bishop expressed his appreciation for the substantial effort by the staff, Envirosphere, and the League of Women Voters in connection with the four workshops conducted throughout the state. He also expressed his appreciation to Dick Watson, Chair Pro Tem, who assisted at two of the workshops, and those other Board members who were able to attend the workshops. Mr. Bishop said he felt the sessions were well worth while to provide an opportunity for public involvement on the draft Environmental Assessment.

Dick Watson commented he thought these workshops were an extremely important effort, and those who attended from the Board and staff learned a great deal about what the public was thinking on this issue. He said he was pleased with the process. Mr. Stevens added the workshops were stimulating and he thought it was brought to the attention of the public that the repository siting was a federal

effort to solve a national problem, with the state acting in a different role. He said wide and varied views were expressed and the League of Women Voters representative in each case was adept at involving those present. He asked Louise Dressen of Envirosphere, who attended all of the workshops, to give a brief report on the preparation of the summary of the comments for the Board and the participants in the workshops.

Senator Guess said he was pleased with the comments he had received in Spokane. He said those who contacted him thought the presentation was competent and complete. The only criticism he received was that some questions were extraneous and some legitimate questions remained unasked. He said he offered to answer any questions that were not answered in the workshops and today the Mayor of Cheney promised to submit a series of questions. Senator Guess said one of his observations was the public does not comprehend the transportation of the nuclear waste, and the fact that the military waste will be glassified and the spent rods will be in casks. This is an area, he said, where more education is needed.

Louise Dressen said a summary of the workshops is being prepared and it will be available to the Board early next week. It will summarize the kinds of concerns expressed in each of the workshops, she said, and will also indicate the concerns that seem to cut across all of them. She said their preliminary work shows the attendance ranged from 90 in Kennewick, 130 in Seattle, 200 in Spokane, and 220 in Vancouver. Ms. Dressen said the level of knowledge of the high-level waste program, USDOE activities, and state activities ran a very wide range, from those who knew essentially nothing to people who had very strong technical understanding. The comments, she said, in the main section and the small groups reflect that range.

Ms. Dressen said the evaluation sheet distributed contained a series of seven questions, with a request for rating of the workshops on a scale of 1 to 5. Of the questions asked, she reported, reaction of the workshops overall received a 4, specific workshop activities were also rated favorably. The highest number of respondents rated the slide show, presentation of major issues related to the Environmental Assessment, and the technical responses to audience questions, respectively, as 3, or Good. The highest percentage of respondents rated the small group discussions and the information that was provided to the participants in the Information Packets as 4, or Near Excellent. The workshop facilities were rated Excellent by 36% of the respondents. An Appendix in the finished summary will give more detail on these ratings, she said, but overall they were considered pretty good.

Ms. Dressen said the Envirosphere report will give some specific examples of the kinds of comments in each workshop. In Seattle, she said the issues that appeared to be of greatest concern related to policy, health and safety, site selection, transportation, and geology. She said they found in all the workshops that probably half of the comments offered related more to policy and programmatic

issues than to the Environmental Assessment specifically. Questions such as why was deep geologic disposal being looked at rather than near-surface facilities; why was crystalline rock not considered in the first nomination; why won't there be repositories in each state were asked. In Kennewick the issues of greatest expressed concern again fell in the general categories of policy, health and safety, site selection, groundwater, and geology. Spokane again expressed concern about policy, health and safety, transportation, groundwater, and geology. Different in Spokane, she said, was quite a bit of concern about the need for epidemiological studies. In Vancouver the issues of most concern again fell in the categories of policy, health and safety, geology, groundwater and environment. Another comment of concern heard in Vancouver dealt with the contamination of the Columbia River and their future water resources. All comments will be explained in more detail in the report to be distributed next week, Ms. Dressen said.

In the discussion that followed it was acknowledged that a wide range of comments and ratings were received which would be helpful for future workshops. Dr. Filby, who had attended the Spokane Workshop, commented he thought it went quite well, with the exception of some off-the-wall questions. In visiting several of the small groups he noted there was a real need for more information to be sent out to the public. He felt they were really confused and do not understand the complexity of the relationship between the state and federal government. He said there is also a real need to explain basic facts. He suggested more emphasis be placed on getting more information out to the people.

Representative Hankins, who also attended the Spokane Workshop, said she agreed with Dr. Filby and felt this proved a strong point that has been discussed many times--education is the key to understanding this program. She cited one woman who objected to the deadlines set by USDOE, and Representative Hankins suggested citizens might be encouraged to contact their Congressmen if they think the Congress is moving too rapidly. She also thought the terminology published in the first Newsletter should be repeated in future publications as one way of educating the public. Andrea Beatty Riniker, who attended the Seattle Workshop, had no specific comment.

Dr. John Beare, who attended the Vancouver Workshop, remarked one of the major concerns, which had already been expressed, was that of the Columbia River. He said some of the statements he heard clearly showed the confusion. He said one question was how many barges were going to come up the Columbia River and how often the bridge would be up. He saw total confusion about the program, such as the concept of USDOE's waste disposal operation, commercial versus military waste, etc. He felt that as a result of the sign-up at the workshops there was now a much wider public that could be reached by means of the Newsletter.

Mr. Bishop said as an outgrowth of the workshops, as well as letters received, he has initiated some discussions to explore what might be

done to strengthen the Advisory Council not only as a better mechanism for providing a broader base for public involvement, but public involvement in a way for various groups to express views and coordinate their activities at work sessions, etc. to satisfy the need for information. He said he saw a significant interest on the part of the cities and counties, and all government entities. Another need, he said, was to involve technical people and scientists through the mechanism of the Advisory Council. He said he hoped this could be accomplished through the restructuring of the Council and establishing subworking groups similar to the Public Involvement Working Group along the technical and governmental avenues.

Don Provost commented the slide show and the script used in the workshops was a good base. He said he used it for a presentation to an environmental health directors group as an experiment, and it worked out very well. He thought the Council members could do the same presentation very easily.

Mr. Bishop agreed and commented the need to broaden the base to Advisory Council in the form of materials and even financial assistance to provide workshops, etc. was there. He solicited any ideas members might have on this concept.

Mr. Stevens acknowledged the assistance of Bill Newton who controls the sound system for the Board and Council meetings and was commissioned to assist in this regard at the four workshops around the state. He considered this effort an essential ingredient of the successful workshops.

Litigation Report

Charles B. Roe, Senior Assistant Attorney General, presented the paper prepared by him and Charles W. Lean, Assistant Attorney General, for the Board providing a comprehensive overview of the areas where litigation may be appropriate for initiation (see attached).

Mr. Roe discussed this paper step-by-step. He first pointed out that litigation initiated under the Nuclear Waste Policy Act for the most part is initiated in the Federal Court of Appeals, and for this state it would be filed either in the 9th Circuit Court in San Francisco, or the U.S. District Court of Appeals in Washington, D.C. He pointed out that if it were a decision dealing with EPA, it would be filed in the Federal District Court.

Mr. Roe noted Division A in the paper deals with areas of Nuclear Waste Policy Act implementation of a general nature, and Division B deals with those that have some site specific relationship to the Hanford site.

Siting Guidelines. The first area discussed was that of the siting guidelines, which Mr. Roe said do have some potential for litigation in the areas of lack of specificity, including omission of "ranking

methodologies" for determining candidate sites; failure of the guidelines to require adequate consideration of alternatives in the environmental assessment; failure to give sufficient weight to national transportation impacts; and failure to adequately address defense waste issues. He said there is a 180-day statute of limitation running on these siting guidelines which were adopted by the U.S. Department of Energy on December 6, 1984.

EPA Standards. The second area in this body of discussion, Mr. Roe said, would be the EPA standards dealing with environmental protection from radioactive releases from repositories. According to statute, Mr. Roe said, those standards were supposed to have been adopted within one year of the effective date of the Act, early in 1984, and they have not been adopted at this time. At this time, he said, there would be no base for challenging the substance in the EPA standards as they have not been established. However, he said, there would be a base for litigation dealing with asking the court to mandate EPA to carry out their statutory obligation.

Environmental Assessments. The next area of concern was Environmental Assessments (EAs). At this point, he said, there is no timely litigation that could be filed until that activity has been completed.

Site Specific - Defense Wastes. Mr. Roe turned to Areas of Implementation of NWPA--Site Specific to Hanford. He said the one area the Chair has asked the attorneys to look at most carefully was the defense waste issue, and they believe there is considerable base for litigation depending upon formal decisions by the U.S. Department of Energy with regard to their position. Mr. Roe said the Defense Waste Negotiating Team set up by the Board was authorized to negotiate a contract with USDOE and pursue funding mechanisms to bring back to the Board. The result of that Team effort was that there were no funds available. Closely associated with this is the C&C negotiations that have been carried out by another Team appointed by the Board, and in that negotiation process it has been--informally, at least--stated to the Team that defense wastes are not within the scope of the C&C process as established under Section 117 of the Act. Therefore, Mr. Roe continued, there are two issues in the defense waste issue that need to be addressed to achieve a determination by the U.S. Department of Energy in a formal setting. Then in case of disagreement, the state could file litigation.

Site Specific - Water Rights. The next subject addressed by Mr. Roe was water rights. He said during the course of the C&C negotiations there were discussions as to whether the federal agencies, especially the Department of Energy, would comply with state laws, particularly the state law regarding water rights. The response in an informal setting came back from the Chief Counsel of the USDOE Richland Office that the United States already had water rights based on a federal law under the so-called "Reserved Rights Doctrine", which in effect stated when the Hanford Reserve was created by the United States it implicitly established water rights necessary to carry out, among other programs, a repository program. Mr. Roe said that

conclusion was not shared in the Attorney General's Office analysis and believed the laws of the state should be satisfied. This is another area, he said, where a mechanism should be developed to find out the formal position of the Department with regard to implementation of the Nuclear Waste Policy Act.

Site Specific - Funding. Mr. Roe said the whole area of funding comes up in various ways: in the context of the state's desire to carry out independent monitoring; the state's desire to utilize certain of the funds to carry out litigation where the state believes the federal agencies are not properly implementing the Act. Mr. Roe said they believed there is significant room for argument, but also believes the state is entitled to more funding than the interpretation the Department of Energy is now giving to the statutory provisions dealing with funding.

Mr. Roe referred to a separate memorandum of February 21 in which he reported the status of litigation that is now pending in various federal courts relating to challenges to the implementation of the Nuclear Waste Policy Act by various states or private groups (see attached).

The cases referred to are:

1. Environmental Policy Institute v. Hodel
   U.S.C.A. (9th) Re: Guidelines

2. Nevada v. Hodel
   U.S.C.A. (9th) Re: Funding

3. Texas v. United States Department of Energy
   U.S.C.A. (5th) Re: Methodology

4. Natural Resources Defense Council v. Thomas
   U.S.D.C. (Dist. of Columbia) Re: EPA Standards

Mr. Roe said the first case challenges the validity of the siting guidelines. This case, he said, does involve one of the fundamental areas discussed and at this time precise issues raised have not been defined in the litigation. A pre-briefing conference has been set for March 12, at which time the issues should be set forth.

The second major case, Mr. Roe continued, now redesignated Nevada v. Herrington because of the change in the Secretary of Energy, is a challenge to the validity of the USDOE's refusal to provide funds to Nevada under the NWPA to finance primary data-collecting activities, including physical activities, on the site proposed for a repository in that state. Mr. Roe said his office had been in relatively continuous contact with Nevada in regard to their case as it does have some interest in the state of Washington. He said the state of Nevada will be filing its brief very shortly, and their attorney, Mal Murphy, had provided his office with a copy. He said Nevada has asked the state to file an Amicus brief in support of their position. At the present writing, he said, that brief would be due next

Tuesday, March 5, although there are mechanisms to allow an extension of time. He added the Attorney General's Office in Minnesota has prepared a brief and is filing an Amicus brief on behalf of the state of Minnesota.

Mr. Roe said the United States has filed a motion to dismiss the third case as premature. The fourth case asked that the EPA Standards, which should have been adopted on January 7, 1984, be adopted.

Mr. Bishop asked if any suit were initiated under the siting guidelines, would that suit encompass the Mission Plan and the EPA Standards. Mr. Roe said it would not. He added there may be implications that relate to the Mission Plan and the EPA Standards, but in the sequencing situation, they would not.

Mr. Lean commented that the statute contemplated that the siting guidelines would be issued before the Mission Plan and the EPA Standards. He thought the problem was that the statute also contemplated that the site recommendation process would not start until after the EPA Standards and Mission Plan had been issued. He said it would be procedurally possible if litigation were filed challenging the guidelines and in the same document challenge the failure of the Department of Energy to have completed their Mission Plan and to have gone ahead with their site selection process without waiting for EPA Standards. That could go all in one litigation package, he said, although it was not necessary they be together. Mr. Roe added that in challenging the guidelines any litigation would look at substantive invalidities, as well as procedural invalidities.

Senator Williams asked what the state should do--would it be appropriate for Washington State to sue separately, or should the state join with other states, then consider suits in areas not being considered by others but are of specific interest to Washington. Mr. Roe replied the siting guidelines have not been challenged by any other state. He said the state is not in close coordination with the Environmental Policy Institute which has filed litigation challenging the guidelines, and his recommendation would be to file the state's own litigation regarding the guidelines. He added whether the suits would somehow be consolidate as they would probably both be in the 9th Circuit Court, he did not know, but he felt the state would want to be master of its own destiny. He said the state of Wisconsin did try to intervene and they were denied intervention by the 9th Circuit Court of Appeals. They had requested the Court to reconsider that denial. With regard to the EPA Standards, he said, again no state is challenging them.

Mr. Lean added it was now too late to intervene in the EPI suit under the Court rules, so the only choice was to file a friend-of-the-Court brief, or for the state to file its own.

Mr. Roe said in regard to the funding issue, the state of Nevada has raised that issue, although not the issue this state would raise dealing with defense wastes. He said both the defense waste issue

and the water rights issue, which are site specific, do need to have some mechanism so there is a formal decision by the Secretary of Energy stating his position with regard to the C&C scope and defense waste funding, and also water rights and the need to satisfy state law. There is no litigation in these areas, but Mr. Roe felt there was a spin-off from the Nevada case which would have some relationship, and the Board may wish to consider the Amicus status and the request by Nevada for assistance.

Since there is no Mission Plan adopted yet, Mr. Roe said, there is nothing to appeal. Perhaps an action could be brought to force them to adopt one and submit it to Congress, he said. With regard to timeliness, he said, the issue most timely for evaluation in his view would be the siting guidelines. Mr. Lean commented one of the things being discussed on sequencing might be a general allegation that things are running out of sequence. He said it would be possible to raise lack of the Mission Plan at that stage, even though there is not a Mission Plan per se to challenge. That is still being evaluated he said, and added he was more impressed with the lack of EPA Standards being a more serious problem.

Discussion followed and Senator Guess wondered if some specifics were left out of the draft EA to await input from the states to enable the Department to release a more perfect document that would bear the states' imprint. He wondered if the state were being hasty in the consideration of litigation. Mr. Roe replied that is an area where there is a litigation potential, but until the final document is seen, they were not suggesting litigation in that area at this time. Mr. Lean added that the legal argument that could be made was not that they could make the EAs more perfect later on, but were they required at the time guidelines were adopted to set forth the decision criteria and methodologies in the guidelines, as opposed to some other place.

Ray Lasmanis said he had just come from the office of Brian Boyle, Commissioner of Public Lands, who regretted not being able to attend this meeting. He reported a letter had just been drafted and sent to the Office of the Governor pertaining to the guidelines. He said it was the feeling of the Department of Natural Resources that if the guidelines are not challenged they will never be a final good Environmental Assessment. He said the ambiguities in the guidelines and the lack of specifics will not be corrected by any amount of comments made on the EA. Brian Boyle and the Department contend the state should litigate on this point. A copy of Brian Boyle's letter to Governor Gardner was delivered to the Chair (see attached).

Mr. Bishop directed the attention of the Board to some specific elements of Mr. Roe's report. He pointed out the issue of defense wastes. He said that during the entire period of the C&C negotiation period, USDOE took the position that defense wastes did not come within the purvue of the Nuclear Waste Policy Act and, therefore, they could not negotiate any element of that portion of the C&C agreement pertaining to defense, nor could they provide any

funding to the state for purposes of doing any of the kind of analysis and work that the state would need to do to address the issue. That pertains also to the forthcoming Environmental Impact Statement. Mr. Bishop said the state has been challenging that position, and in a recent meeting with Mr. Mike Lawrence in Richland he suggested the state try again to negotiate the defense waste issue as a separate Memorandum of Agreement. Teams were selected by the Board and the USDOE who have met several times, without any progress. Mr. Bishop reported that yesterday he, Charlie Roe, Curt Eschels, and David Stevens met with the Governor to brief him and call his attention to all of the issues in the litigation paper. He said in the process of that discussion it was strongly proposed to the Governor that he immediately initiate a letter to the new Secretary of Energy regarding the defense wastes situation, and that the funding seems to be an appropriate question to pose to the Secretary of Energy.

Mr. Bishop called attention of the Board to Curt Eschels, the new member of the Board for EFSEC, who is also assisting the Governor's staff in a policy coordination function related to nuclear waste. He asked Mr. Eschels to give a further report on the discussions with the Governor regarding defense wastes proposal. Mr. Eschels said the Governor feels, as he has stated before, that the state of Washington has been very reasonable in this particular area and generally with regard to radioactive waste of all types. The state has been willing to negotiate, he said, and since the Governor has taken office he has continued that reasonableness and willingness to negotiate. The negotiations have been going on with regard to defense wastes, he said, since 1983. He continued there are different opinions by USDOE and the Nuclear Waste Board on what it is that the Nuclear Waste Policy Act means on defense wastes with regard to the C&C Agreement, and with regard to funding. There has been no resolution of those differences of opinion. The Governor, he said, feels it is too important to let this question slide any further for two reasons: first, there is an existing situation with the placement of defense wastes at Hanford and there have been some problems in the past; secondly, there appears to have been a decision by default regarding the commingling. He continued, even taking those separately the Governor wants first of all USDOE to plan for dealing with the defense wastes question, both existing and prospective. Second, he wants a process for the state to assure itself and its citizens that those studies the Department does are rigorous and complete. The third concern, of course, is he wants some funds from USDOE to allow the state to carry out an extensive review.

The letter the Governor is sending calls for the USDOE to make a final decision about whether defense wastes are to be treated under the NWPA. His preference is that USDOE include the defense wastes in the existing program under the Act. The wording of the letter, Mr. Eschels said, sets up deadlines which will lead to a resolution

of the differing interpretations. If USDOE disagrees, that sets the stage for the courts to interpret the Act and to resolve the differences of opinion between the state and the USDOE. Copies of the proposed letter were distributed to the Board.

Mr. Eschels added that having sent the letter, the Governor implied direction to the Board for the Board to follow through with the appropriate action, depending upon what USDOE does.

Mr. Bishop asked Mr. Roe to recap briefly the Nevada case with recommendation for Board action. Mr. Roe said the Nevada case deals with the refusal of the U.S. Department of Energy to provide funds to Nevada to carry out various activities centering on primary data collection, as well as physical activities within, and adjacent to, the Nevada site. As he recalled, Nevada asked for about 3.1 million dollars to fund their program and received approximately 1.3 million dollars. Nevada then filed Notice of Appeal to the 9th Circuit Court. Mr. Roe thought the funding case raises the fundamental issue as to the power of the U.S. Department of Energy to make decisions with regard to funds that were, in the state's view, clearly designed in the Nuclear Waste Policy Act to be made available to the states to fund their programs to assure that to their satisfaction the federal programs were being carried out properly. He said that case does have an impact on the discussions the Board has had today. It would be in regard to that issue, he said their office would be prepared, with the concurrence of the Board, to prepare and file an Amicus Curiae brief on behalf of the state of Washington in a timely fashion. The timing for Nevada is March 5, and papers have been prepared, but not sent, requesting an extension to March 12, 1985 to file. Both the state of Nevada and the Justice Department, representing the U.S. Department of Energy have consented to that extension, he said.

Mr. Stevens said the state's concerns about the grant restrictions go back well over a year. USDOE did issue some internal guidance to their field offices on the kinds of activities that would be funded under the NWPA. He said in this state's particular negotiations with the Department over the past three grant years, the Department was very receptive to a large extent in what the state wanted to do. There was a cut-back this past year, he said, from the original request based on the uncertainty of the site characterization nominations. He said the last year's request was reduced somewhat based on the slippage in USDOE's schedule. The exception to this was the well-logging proposal. The Department denied this request, although they acknowledge it was a good thing to have done. The question posed, Mr. Stevens said, is who does have the decision-making power. He felt the internal guidance sent to the regional offices had been unnecessarily restrictive.

Dr. Beare said in order to protect the interests of the state in terms of future requests, he moved to support the proposed action of the Attorney General of filing an Amicus brief with the state of Nevada. The motion was seconded by Ray Lasmanis.

Dr. Filby asked if in filing this Amicus brief does the litigation by the state of Nevada restrict any outcome of that litigation to the state of Nevada, or would it affect funding and other factors in the state of Washington. Mr. Roe replied that in the sense of pure litigation, the only people who are bound by th decisions in that case are those who are parties. However, he said, as a practical matter, the teachings of these cases have an impact, either directly on this state, or indirectly depending upon the factual patterns. Filing an Amicus Curiae brief does not bind the state in the decision, Mr. Roe said, but the key decision is whether the state has enough interest to express its views with regard to the legal issues raised in that case. In his view it would be appropriate.

Dr. Filby asked the advantage of filing a friend of the Court brief as opposed to filing a separate suit for the state of Washington. Mr. Roe said suits normally rise out of specific factual patterns and the pattern Nevada has developed is in regard to a specific grant. This state has the potential for a similar lawsuit coming up over defense wastes, as well as the use of federal funds to litigate against the federal government when it is believed they are not complying with the Nuclear Waste Policy Act provisions. However, he added, that issue may or may not be dealt with in the Nevada case.

Mr. Lean added that in order to file such a suit, the state would have to have a grant involving primary research activities that had been denied. Dr. Filby mentioned the well-logging proposal might qualify as an example, and Mr. Lean said as an option a lawsuit could have been brought, but there is a case now involving the same issues. Dr. Filby wondered which was the most effective means of putting pressure on the Department of Energy--filing an Amicus brief in Nevada, or filing a separate brief on the rejection of funds for the well-logging.

Mr. Roe said he felt the most appropriate course right now was to file in support of Nevada, but the well-logging proposal would also be independently evaluated. He said he was not sure of the timing on the well-logging and the ultimate actions of the Department.

Mr. Eschels said he thought the filing of an Amicus brief in the Nevada case is not exclusive, but a statement of this state's concern with the principal advantage of filing an Amicus brief would be timing. He felt it would save time and be of the same effect as this state to file a separate suit.

Mr. Roe reminded the Board there were two other items that spin off from this, one being defense waste. Mr. Lasmanis added it would be in the best interests of the state of Washington that Nevada succeed in their suit and it would be better to join them to help achieve that success. Mr. Lean noted that the state would also bear the brunt of losing, should Nevada not be successful. Mr. Lasmanis wondered if a loss would preclude a challenge on funding for defense wastes studies. Mr. Lean said if a court were to say that it is legal or reasonable under the Nuclear Waste Policy Act to limit

funding of primary research, and a determination was later made that defense wastes fall within the Nuclear Waste Policy Act, the state might encounter the same limitation. Mr. Lasmanis asked in light of this possibility had the probability of success been evaluated, and what was the risk. Mr. Lean said the risk was there, whether we took action or not. The hope, he said, was to show the Court this an issue of great interest to all of the states in a similar situation as Nevada.

The question was called for and was carried unanimously.

Mr. Bishop then asked Mr. Roe to address the question of the guidelines with his recommendation. Mr. Roe said the guidelines were published in the Federal Register on December 6, 1984. They are the fundamental documentive criteria for repository selection. There are 180 days allowed to challenge the guidelines from December 6, 1984. Filing can be made either in the 9th Circuit Court, or the Washington D.C. Circuit Court of Appeals. The Environmental Policy Institute has already instituted litigation challenging the validity of these regulations. Since there is this case now pending, it puts a cloud over the guidelines and his office has enumerated reasons based on discussions and evaluations with staff, with prior comments of the Board and the state to the U.S. Department of Energy. The belief is there is a reasonable basis for initiating litigation in this area. In this regard, he said, the Attorney General's Office is prepared to initiate on behalf of the Board, and with its concurrence, litigation challenging the validity of the U.S. Department of Energy's siting guidelines.

Mr. Watson said his concern, along with that of Commissioner Boyle, was that no matter how much the U.S. Department of Energy might like to correct the problems in the final Environmental Assessment, they would be unable to correct the problems that exist in the fundamental guidelines. He then moved to authorize the Office of the Attorney General to initiate on behalf of the state of Washington and the Nuclear Waste Board a suit challenging the adequacy of the siting guidelines adopted by the Department of Energy. The motion was seconded.

Dr. Filby asked what was the objective of this litigation--was it to require the Department of Energy to adopt a completely new set of guidelines, or to modify only certain parts of the guidelines. Mr. Roe replied the objective would be to ask the Court to declare invalid those portions that the state would contend are invalid or omissions, and remand to the U.S. Department of Energy for appropriate action.

Mr. Lasmanis reiterated it was his opinion, and that of Commissioner Brian Boyle, it would not be possible to get an adequate, final Environmental Assessment because of the ambiguities, and in some places lack of specifics, in the underlying guidelines. He said it was their feeling if the 180 days were allowed to pass the Board could be accused of not protecting the state's interests.

Mr. Roe said he wanted to make clear this approach on the part of the state is not to in any way derail the system, but to assure that the federal statute is implemented appropriately by the federal agencies involved. He added that is the state should be right, the errors will be corrected earlier. The state would undoubtedly ask for an expeditious hearing by the 9th Circuit Court, he said. He added that although there is other litigation pending where the state could have intervened, it was preferable for the state to file its own case to control the destiny of the case.

Mr. Eschels said he was glad to hear this reassurance as he thought it was good to keep the state's focus on the goal of the Board, as well as the state, to insist that the substance of what the Department is examining is done rigorously and correctly. Lacking in the guidelines, he said, are lack of specificity, no regard for alternatives, no attention to transportation impact as strongly as the state believes it should, and inadequate treatment of the defense waste issue. Desired are solid siting guidelines, and the state believes these guidelines do not meet that criterion.

The question was called and carried unanimously.

Mr. Bishop then turned to the issue of funds for litigation. He said he thought for that to be placed in a proper mode it was necessary for a letter to be sent for a formal response expressing the state's desire to have the funds available for litigation. He reported such a letter had been prepared to be sent today to Mike Lawrence in Richland.

An additional item, Mr. Bishop said, that should be addressed was that of water rights. He reported that yesterday in the meeting with the Governor this issue was discussed and a letter is being drafted to the Secretary of Energy on water rights. When this letter is sent, Mr. Bishop asked Mr. Eschels to provide a copy to the Office for distribution to the Board.

Senator Williams commented he thought the action the Board had taken at this meeting was particularly significant. Considering the time, he said, that the state of Washington and the Board had been involved in the process, he thought the approach was particularly considerate, especially in dealing with the federal government in this high-level nuclear waste program. He said perhaps the approach was so considerate the citizens of the state had been forgotten. He said it was unfortunate to have reached the point where litigation was called for, but in this case he thought it was necessary and he was pleased to see the Board moving in this direction. The pattern he saw was a clearing of the air and arriving at the basics more quickly than previously.

Mr. Bishop called the attention of the Board to the planned USDOE hearings on the Environmental Assessment. In addition to those listed on the schedule, he said USDOE has agreed to schedule a

hearing in the city of Seattle, which will be held at the Federal Building on Saturday, March 9. Two separate sessions will be held: 9:00 a.m. to 12:00 noon, and 2:00 p.m. to 5:00 p.m.

Another item of interest to the Board was a copy of Senator Goltz' memo reporting on his delivery of the two letters from the Board to the Department of Energy requesting a time extension for review of the Environmental Assessment.

Environmental Assessment Review

Mr. Stevens reported it was understood a letter had been sent from the Department of Energy on Monday denying an extension of the comment period requested by the Governor, but no copy has yet been seen. Therefore, he said, it was not known what conditions were given for comments received past the deadline of March 20. The staff anticipated preparing an overview document with the priority issues identified for submittal by March 20. Beyond that date, he said, work would be continued to further elaborate and document the identified issues. This would allow the consultant to conduct an extensive peer review of their report on all aspects of the issues with the thought that perhaps 60 days beyond March 20 a complete document would be filed with the U.S. Department of Energy. Mr. Stevens said the Department had indicated to the Office orally that these comment would be taken into consideration.

Draft Testimony on BWIP EA

A draft of the Testimony to be presented by the Chair at the public hearing in Olympia held on the draft Environmental Assessment prepared by Envirosphere was given to the Board. Mr. Bishop emphasized the draft under discussion was not a polished statement, but highlights of the essential elements for testimony to be given on March 7.

Louise Dressen was asked to discuss the paper prepared by the consultant, and stated this was their attempt, based on the guidance from the last Board meeting, to put together some comments for the testimony. She said this draft was an outline of the major areas of concern that are being evaluated by the Board. She said no attempt at suggesting a position on any of these issues was made, recognizing Envirosphere has not yet presented to the Board their position as the consultant. She added Envirosphere is vigorously preparing their draft report on their technical review of the EA, and that should be available to the Board early next week. Ms. Dressen said an area was included in the testimony for an outline of some of the major legal and procedural concerns. Mr. Stevens said these were covered in a separate memo by Assistant Attorney General Chuck Lean and included in the packet.

Following Ms. Dressen's review of the major elements of the testimony, the Board was asked for comment or input.

Representative Hankins inquired if this testimony would be presented at only one hearing, and if so, she was concerned the different audiences would not have the benefit of hearing the Board's testimony. She also wanted to be sure the transportation and emergency response issues were addressed. Ms. Dressen assured her the transportation issue was addressed, but emergency response would come under the procedural-policy procedural heading, which should be included elsewhere in the testimony.

Mr. Bishop said he shared Representative Hankins' concern about the Board testimony being presented at each hearing, and every effort would be made to get a state-wide release of the Board's position. However, he said, because of the time pressures at each hearing, he felt it might be unfair to consume testimony time that rightly belonged to others in the audience. She suggested having printed copies of the testimony available for the public at each hearing. Mr. Stevens said that would be sent out to the mailing list, media, etc.

Mr. Lasmanis suggested that a stronger statement be made concerning the "detailed comments to be submitted at a later time", that would not limit the comments to the technical issues. Mr. Bishop agreed and said the Board would have the opportunity to review that broader response that will be prepared.

Don Provost suggested the statement should generally look at some of the priorities that have been identified. He thought transportation should be a separate issue that would stand alone. Hydrology travel time should also stand alone as a major issue, he said, as well as other major issues identified at the last meeting. He thought the issues should be mentioned in priority listing.

Dr. Beare believed, along with Representative Hankins, that emphasis should be given to Emergency Response, and wondered if any area might be included in the section referring to safety and potential difficulties foreseen.

Mr. Lean explained his memo pertained to concerns expressed previously by the Board falling under the procedural and policy area.

Mr. Eschels stated the Subcommittee on Economic Risk Assessment met yesterday and expressed some concern about what is not yet included in the draft EA and should be for it to be a decision document. He said the Committee is not satisfied that USDOE in the draft EA has treated potential for economic damage in a way that is sufficiently comprehensive. He said they believe it is a doable function and would provide valuable information. Mr. Lean added that when discussion was held on litigation on the USDOE guidelines, only four major issues were highlighted as examples to areas to review. There is actually about a page of issues he said, and they would not be required to be listed until the litigation conferences begin. On that list is the Economic Risk issue, Mr. Lean said, and it would still be pursued as a possible litigation item.

Representative Nelson said, as a member of that Subcommittee, he hoped the testimony would include the economic risk issue, which he felt was a major omission in the EA and the application of the guidelines and the ranking process. Ms. Dressen said she was not clear as to what further remarks should be made on this subject, as there was brief comment referring to the ranking methodologies. Mr. Provost suggested who was included in the ranking, what the criteria were, and what the weighing were.

Mr. Lasmanis added, also as a member of the Subcommittee, of the major concerns of the citizens of the state is the potential threat to the Columbia River. He said the Subcommittee believed the Economic Risk Analysis would put a better handle on that, as they felt strongly it was not considered fairly in the ranking.

Mr. Eschels added that the Subcommittee believes that an Economic Risk Analysis is an important tool in choosing and ranking the sites. Also, the guidelines seem to require such an economic risk assessment, and third, that USDOE has not done that in the draft EA. Mr. Bishop asked Jerry Parker, as staff assistant on the Subcommittee, to incorporate the economic risk suggestions into the testimony statement.

Mr. Stevens was asked to give a quick review of the schedule and Board action on the EA response.

Mr. Stevens said on Monday, March 4, Envirosphere will have a draft of its technical comments and an executive summary. This will be distributed as soon as received to the Board members. A summary of legal issues will also be submitted and this will be a part of the state response. On March 5 through March 7 the technical comments and summaries will be reviewed by the Office. He recommended holding another work session March 8 to continue this effort, and to review the executive summary and as many of the supporting documentation as is possible. A final draft of the executive summary and supporting materials will be furnished on March 12. Other state agencies who have been provided draft Environmental Assessments have been asked to send back their comments to the Office by that time. A transmittal letter will be drafted March 11. Also on that date, Representative Nelson had requested an opportunity for review of the materials by the Legislators who have been unable to attend meetings because of the Legislative action. This briefing would be available for any other interested Legislators or persons. It is planned for 7:00 p.m. in House Hearing Room B.

By March 12 comments from the Public Workshops should be summarized and ready for distribution, Mr. Stevens said. He suggested they be included with the Board's comments to USDOE as an Appendix, to show a clear conduit between the workshops to the Department of Energy. Mr. Stevens continued it was anticipated the letter of transmittal would be circulated to the Board, and on the 15th materials would be

ready for Board approval at the regular meeting. Submission of final documents to the U.S. Department of Energy would be made by the deadline of March 20.

Mr. Eschels furnished the Board a copy of the memorandum on the Economic Risk Analysis prepared by the Subcommittee. This included Background, Scope and Procedures for Proposed Analysis, Provisions for Economic Damage Analysis in NWPA and Related Documents, and Analysis Desired by the Board. It came as a recommendation of the Subcommittee, he said.

Public Comment

Mr. Larry Penberthy of Penberthy Electromelt International, Inc. said he had worked extensively in the field of nuclear waste glassification and built for the Department of Energy a $900,000 furnace for that purpose. In this Environmental Assessment, Mr. Penberthy said, the USDOE has adopted the strategy of giving the state of Washington choice of one. He hoped the Board would note this and include it in their reply to USDOE. He noted the concern of the citizens of the state about the possibility of leakage of the radioactive element and materials into the Columbia. He said it was accepted by all engineers that the proposed site at Hanford would flood. At the pressure and the temperature to be generated, he said, made it almost certain the radioactive wastes would corrode. It was a guess as to how long that material would take to reach the Columbia. He thought this problem could be avoided by moving the repository site from the wet hole over to Rattlesnake Mountain. Mr. Penberthy said this proposal was first suggested to the Department in 1978 by the National Academy of Sciences, but was ignored. He said it was not even referenced in their work. He felt the reason was greed, and the cost would be substantially less by putting it in Rattlesnake Mountain, having a finished job, with no continuing related jobs, contracts, etc. He urged the Board to let the Department know the Environmental Assessment is incomplete, not proper to give the state one of one, and to meet the concerns of the people of this state to recommend the Department change the guidelines of their repository site selection, asking them to put the repository in a place where the waste will stay dry--forever. Mr. Penberthy distributed his written statement, an article in the Seattle Times a year and a half ago, and one printed last Sunday. He left the chart used in his remarks to be copied and distributed to the Board.

In response to Mr. Bishop's inquiry, Mr. Penberthy said he had requested to appear at the USDOE hearings both on the 7th in Olympia and the 9th of March in Seattle.

Senator Guess asked if the Department planned to glassify defense wastes at Savannah River before they are transported to this state. Mr Penberthy said that was the plan--a rather expensive plan--and he said the whole job could be done there for one-tenth of the amount planned if they used the furnace they built for the Department of

Energy. He said they are using a formula ten thousand times poorer than the glass he made. When the time comes to admit that glass to the state, he said, someone had better look at the quality. He said that glass comes from the American Nuclear Society and they are doing a very poor job at a very high price.

Mr. Roe asked the status of the land ownership in the Rattlesnake Mountain, and Mr. Penberthy replied all of the ridge of the mountain is within the Reservation, but the tunnels would most economically be bored another 1,000 feet within, so that acquisition of land would be desirable--but not necessary, he said.

David Tarnas of WashPIRG wondered if the 10-minute per person ruling of the USDOE for those who testify could be utilized by having more than one person from the Board testify on different subjects to present all the issues. He also wondered if Mr. Roe were going to check to see if the statute of limitations had run out on USDOE's refusal to approve the well-logging proposal. Mr. Roe responded he had not planned to do this, but he would do so if the Chair so desires. Dr. Brewer said if Washington State University did not have a contract, then they have been denied. He said USDOE had told him several months ago they were going to contract with the University for this work, but nothing has happened. Mr. Bishop asked Mr. Roe to check out the status.

Andrew Gray of WashPIRG thanked the Board on behalf of his group for their action in having a Seattle hearing by USDOE on the EA.

Mr. Stevens observed the Nuclear Regulatory Commission had sent the Office their plan for review of the EA, which also provides an opportunity for staff to sit down with them to look at some of the joint interest and identified issues. Dr. Brewer will represent the Office and may have an opportunity to report at the next Board meeting.

In his concluding remarks, Mr. Bishop reminded the members of the Board of the Waste Management '85 annual meeting to be held at the University of Arizona in Tucson, March 24-28. Interested members were provided a sheet of instructions outlining the procedure to be followed should they decide to attend. Mr. Bishop asked them to advise them of their interest. Mr. Eschels indicated his desire to attend. Mr. Bishop encouraged Legislators to make arrangements for any interested persons on their staff to attend through their own budgets.

There being no further business, the meeting was adjourned.

OFFICE OF THE ATTORNEY GENERAL

M E M O R A N D U M

February 26, 1985

TO: WARREN BISHOP, Chairman, Nuclear Waste Board

FROM: CHARLES B.ROE, JR., Senior Assistant Attorney General CBRe
CHARLES W. LEAN, Assistant Attorney General

SUBJECT: Litigation

This is written, as requested at your board's January meeting, for the purpose of providing a comprehensive overview of areas where litigation may well be appropriate for initiation in the context of insuring that the federal agencies implementing the Nuclear Waste Policy Act of 1982 (hereafter NWPA) perform their responsibilities consistent with the requirements of NWPA.

The discussion hereafter follows this outline.

I. LITIGATION INITIATION PROCEDURES.

II. LITIGATION AREAS OF MAJOR INTEREST.

We turn first to litigation initiation procedures under the NWPA.

I. LITIGATION INITIATION PROCEDURES.

Section 119(a) of the NWPA sets forth that United States Courts of Appeal shall have "original and exclusive jurisdiction over any civil action," among others, as follows:

> (A) for review of any final decision or action of the Secretary, the President, or the Commission under this subtitle;
> (B) alleging the failure of the Secretary, the President, or the Commission to make any decision, or take any action, required under this subtitle;
> (C) challenging the constitutionality of any decision made, or action taken, under any provision of this subtitle;
> (D) for review of any environmental impact statement prepared pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) with respect to any action under this subtitle, or as required under section 135(c)(1), or alleging a failure to prepare such statement with respect to any such action;
> (E) for review of any environmental assessment prepared under section 112(b)(1) or 135(c)(2); or
> (F) for review of any research and development activity under title II. (Emphasis supplied.)

This provision eliminates the normal procedural requirement of the federal court system which contemplates that initiation of litigation is in a federal district court.[1/]

Washington may initiate challenges relating to the six areas, just quoted, in either the 9th Circuit Court of Appeals in San Francisco or the District of Columbia Circuit Court of Appeals. Section 119(b). Of import, most actions by the state relating to these areas must be initiated in a Court of Appeals "not later than the 180th day after the date of the federal decision or action or failure to act involved. . ."

1/ Note that litigation authorized under section 119(a) does not pertain to Environmental Protection Agency (EPA) decisions involving implementation of the Nuclear Waste Policy Act; thus, challenge to actions (or inactions) of EPA must likely be filed in federal district court.

We now turn to a discussion of potential litigation areas.

II. LITIGATION AREAS OF MAJOR INTEREST.

A. Areas of NWPA Implementation - General.

1. Siting Guidelines - Department of Energy.

One of the most important areas of potential litigation relates to the adequacy of siting guidelines adopted by the Department of Energy as required by section 112(a), NWPA. There are several potential defects in these regulations including, inter alia:

a. Lack of specificity, including, e.g., omission of "ranking methodologies" for determining candidate sites.

b. Failure of the guidelines to require adequate consideration of alternatives in the environmental assessments. (See II.A.3.)

c. Failure of the guidelines to give sufficient weight to national transportation impacts.

d. Failure of the guidelines to adequately address defense waste issues.

The 180-day statutory period for initiating any litigation under section 119(a) is now running as to these guidelines. They were formally adopted by the Department of Energy on December 6, 1984.

2. Validity of General Implementation of NWPA.

The Department of Energy and its sister federal agencies have implemented NWPA in a fashion that is untimely in terms of mandated dates for taking actions as well as in terms of the statutory sequence for taking such actions. These major discrepancies are so serious that it can be argued, quite persuasively, that the entire implementation process of NWPA should be halted until such time as the sequencing of decisions mandated under the NWPA are performed in their proper order.

The following are two of the most serious problem areas:

a. Mission Plan - Department of Energy.

Section 301(a) of the NWPA requires the Department of Energy to prepare a comprehensive report, known as a mission plan, "which shall provide an informational basis sufficient to

permit informed decisions to be made in carrying out the repository program . . . ." The plan is required to include eleven elements including several that relate directly to the repository siting program.

The mission plan was required to be in a final form and submitted to congressional committees in June, 1984. The plan has not, as yet, been put in a final form.

If the statutory time table had been followed with respect to the mission plan, it would have been available before the final three candidate sites were selected. The states, Congress, and the Department of Energy presumably could have used this document as a guide to fill in the gaps in the siting guidelines. Instead, decisions on repository siting, MRS, defense waste commingling, and the future status of defense wastes at Hanford are all proceeding with little publicly available coordination between them. Even such an important question as when the Secretary of Energy intends to make a preliminary determination of suitability for three sites for the first repository is unanswered, except for contradictory oral statements by Department of Energy officials.

We believe that a reasonable argument can be made that no site characterization determinations of NWPA can be satisfied without compliance with the mission plan requirements in a timely fashion.

b. Environmental Protection Standards - EPA.

Section 121(a) of the NWPA requires EPA to adopt at least by January, 1984 "standards for protection of the general environment from offsite releases from radioactive material in repositories." EPA has not adopted these standards.

These rules should provide the underpinning for making other major decisions under the act. It is obviously extremely difficult, if not impossible, to undertake any realistic repository site review without knowing the permissible radiation releases to the environment.

At a minimum, the failure of EPA to adopt rules provides the basis for litigation requesting a court to order EPA to perform its statutory duties in a timely fashion.

3. Environmental Assessments (EAs) - Department of Energy.

Another area of major import relates to the validity of the "environmental assessments" which are required to accompany each of the five nominated sites. Potential defects in the EAs include, inter alia, the following areas:

a. Inadequate explanation of ranking methods and results.

b. Failure to address national transportation impacts.

c. Oversimplification of geohydrology at Hanford.

d. Inadequate discussion of tectonics.

e. Failure to include a comparative evaluation with other sites and locations considered.

EAs are expressly noted as subjects for judicial review. Section 119(e), NWPA. See also section 112(b)(1)F which sets forth the limitations on the scope of judicial review of environmental assessments. Note, that litigation in this area would not be appropriate for initiation until the EA's of the Department of Energy are in a final form. (They are anticipated to be in final form by late spring or early summer 1985.)

B. Areas of Implementation of NWPA - Site Specific to Hanford.

1. Defense Wastes

The Department of Energy has refused to consider defense wastes temporarily stored at Hanford in the context of either:

(1) the scope of the ongoing "C&C" agreement negotiations between the federal agency and Nuclear Waste Board under section 117, NWPA, or

(2) the funding of Washington's activities relating to the repository program under 116(c), NWPA.

Simply stated, the Department of Energy's position is that defense wastes are not subject to repository location program of the Nuclear Waste Policy Act, even in the particular factual pattern at Hanford.

The section of NWPA most relevant to this defense waste discussion is section 8. Subsection 8(a) provides:

> Subject to the provisions of subsection (c), the provisions of this Act shall not apply with respect to any atomic energy defense activity or to any facility used in connection with any such activity.
> (Emphasis supplied.)

Subsection 8(c), referred to above, provides:

> The provisions of this Act shall apply with respect to any repository not used exclusively for the disposal of high-level radioactive waste or spent nuclear fuel resulting from atomic energy defense activities, research and development activities of the Secretary, or both. (Emphasis supplied.)

Subsection 8(b), which deals with the so-called "commingling" decision relating to whether defense wastes should be disposed in the same repository as commercial wastes, provides in part:

> (1) Not later than 2 years after the date of the enactment of this Act, the President shall evaluate the use of disposal capacity at one or more repositories to be developed under subtitle A of title I for the disposal of high level radioactive waste resulting from atomic energy defense activities. Such evaluation shall take into consideration factors relating to cost efficiency, health and safety, regulation, transportation, public acceptability, and national security.
>
> (2) Unless the President finds, after conducting the evaluation required in paragraph (1), that the development of a repository for the disposal of high-level radioactive waste resulting from atomic energy defense activities only is required, taking into account all of the factors described in such subsection, the Secretary shall proceed promptly with arrangement for the use of one or more of the repositories to be developed under subtitle A of title I for the disposal of such waste. Such arrangements shall include the allocation of costs of developing, constructing, and operating this repository or repositories. The cost resulting from permanent disposal of high-level radioactive waste from atomic energy defense activities shall be paid by the Federal Government, into the special account established under section 302.

Since the "commingling" decision has now been made by operation of law, the Department of Energy must "proceed promptly with arrangements for use" of one or more commercial repositories for disposal of the nation's high level nuclear defense

wastes. Characterization of a commercial site, such as Hanford, thus inescapably involves consideration of these defense wastes.

We are advised that the defense wastes now stored temporarily at Hanford are located in such geographic and geohydrologic relationship to the repository proposed for construction so as to necessarily conclude that said wastes must be evaluated in order to satisfy the "site characterization" evaluations and studies required by section 113, NWPA. Thus, the site characterization study of the Hanford site would necessarily include a study of the site with the existing wastes removed as well as in an in situ status.

The siting guidelines, which are supposed to govern site characterization and recommendation, are required by Section 112 of the NWPA to include factors relating to "atomic energy defense activities". The guidelines themselves address this issue in 10 CFR section 960.5-2-4 (although with very little detail). It seems clear that both the NWPA and the siting guidelines require consideration during site characterization of defense wastes temporarily stored in proximity to the site.

In sum, it can be argued persuasively that the Department of Energy is invalidly implementing the NWPA (section 117) in the conduct of its C&C agreement negotiations with the state by excluding defense wastes from its coverage. Similarly, it is equally arguable that funds should be provided to the state from NWPA sources for the purpose of evaluating the proposed repository suitability in light of the defenses wastes stored in proximity to the site designated by Department of Energy for characterization at Hanford.

2. Water Rights.

Section 124 of the NWPA at least implies that the Department of Energy must acquire water rights under state law if necessary for the repository program. The Department of Energy, through its chief attorney at its Hanford operation, has advised informally that when the United States established the Hanford reservation in the 1940s it impliedly established "reserved" water rights from the Columbia River (1,000,000 acre-feet annually) which may be used for a proposed repository under the NWPA. (Therefore, the United States has no plans to satisfy requirements of state water law, i.e., obtain a permit under the state's water codes.)

In our view, the United States did not establish any such water rights for repository characterization or operation based on the "reserved rights" doctrine (as described in United States v. New Mexico, 438 U.S. 696 (1978)) as applied to the creation of the Hanford reserve.

It is our conclusion that the United States, in carrying out a repository program at Hanford, is, at most, performing a "secondary purpose" for which the reservation was created. In this context, as a matter of federal law, the United States must acquire or establish water rights for the repository program that are based on state law for their creation.

3. Funding

The United States has not only refused to fund state "defense waste" activities (noted in B.1. above), but it has refused to fund state activities relating to litigation pursued by a state to insure the Department of Energy properly implements the NWPA.

Section 116(c)(1)(A) and (B) provides:

> (A) The Secretary shall make grants to each State notified under subsection (a) for the purpose of participating in activities required by sections 116 and 117 or authorized by written agreement entered into pursuant to subsection 117(c). Any salary or travel expense that would ordinarily be incurred by such State, or by any political subdivision of such State, may not be considered eligible for funding under this paragraph.
> (B) The Secretary shall make grants to each State in which a candidate site for a repository is approved under section 112(c). Such grants may be made to each such State only for purposes of enabling such State -
> (i) to review activities taken under this subtitle with respect to such site for purposes of determining any potential economic, social, public health and safety, and environmental impacts of such repository on the State and its residents;
> (ii) to develop a request for impact assistance under paragraph (2);
> (iii) to engage in any monitoring, testing, or evaluation activities with respect to site characterization programs with regard to such site;
> (iv) to provide information to its residents regarding any activities of such State, the Secretary, or the Commission with respect to such site; and

> (v) to request information from, and make comments and recommendations to, the Secretary regarding any activities taken under this subtitle with respect to such site.

Regardless of whether a "C&C" agreement has been reached under section 117(c) of the NWPA, section 117(b) requires that the Department of Energy "consult and cooperate" with the State of Washington on the state's concerns about "the public health and safety, environmental, and economic impacts of any such repository." Some specificity can be given to this general language by reference to the listing in section 117(c) of the subjects to be covered in a "C&C" agreement. We believe that sections 116 and 117 of the NWPA, when read together, create an obligation to fund reasonable good faith activities of a state (including litigation) relating to the state's review of, and participation in, the repository site selection process.

If the Department of Energy formally denies funding for defense waste review, or for litigation under the NWPA, we believe this decision would be erroneous under the Act and may be appealed.

This concludes our report. We will be prepared to discuss the matters set forth herein further with you upon your call.

OFFICE OF THE ATTORNEY GENERAL

Inter-office Correspondence Date: February 21, 1985

To: WARREN BISHOP, Chairman, Nuclear Waste Board

From: CHARLES ROE, Senior Assistant Attorney General CBRoe

Subject: Litigation - Pending in Federal Courts

This is written as you requested for the purpose of providing you with a status report on litigation that is now pending in various federal courts relating to challenges to the implementation of the Nuclear Waste Policy Act by various states or private groups.

A. Environmental Policy Institute v. Hodel
U.S.C.A. (9th) No. 84-7854

This case involves a challenge to the validity of the siting guidelines adopted in December, 1984 by the Department of Energy. The specific contentions of invalidity have not yet been framed by EPI. We are informed by EPI attorneys that these allegations relate not only to substantive defects in the guidelines but to defects in procedures followed by the Department of Energy in adopting the guidelines.

B. Nevada v. Hodel
U.S.C.A. (9th) No. 84-7846

This case initiated by Nevada challenges the validity of the Department of Energy's refusal to provide funds to Nevada under the NWPA to finance certain physical activities proposed by Nevada in relation to its evaluation of Department of Energy's repository proposal in Nevada.

The case is now in its briefing stage with Nevada's opening brief due for filing in the Ninth Circuit Court of Appeals by March 5, 1985. Nevada has contacted this office with regard to filing a brief "amicus curiae" (or "friend of the court" brief). Such a brief by this office should be filed by March 5, 1985. (The Minnesota Attorney General's office may be preparing such a brief.)

C. Texas v. United States Department of Energy
U.S.C.A. (5th) No. _____

This case involves a challenge to the method followed by the Department of Energy in defining the "Deaf Smith" site proposed for characterization in Texas. The United States has filed a motion to dismiss as premature; Texas's response is to be filed on March 22, 1985. On February 20, the Fifth Circuit denied 31 utilities leave to intervene in the suit.

D. Natural Resources Defense Council v. Thomas
U.S.D.C. (Dist. of Columbia) No. 85-0518

This case, filed on February 8, 1985, requests the United States District Court in the District of Columbia to issue an order directing the Environmental Protection Agency to promulgate standards for protection of the environment from radioactive releases arising from nuclear waste repositories as required by the Nuclear Waste Policy Act of 1982, § 121(a). The Nuclear Waste Policy Act requires such standards to have been adopted by January 7, 1984.

CBR:bj

Brian Boyle
Commissioner, Public Lands

March 1, 1985

The Honorable Booth Gardner
Governor
State of Washington

Dear Governor Gardner

For the last two years, I have been represented on the Washington State Nuclear Waste Board by Raymond Lasmanis, our State Geologist (and incidentally, the only geologist on the board.) As often happens, a person in my position has to appoint a surrogate to ensure continuity of representation and Mr. Lasmanis has been not only a learned, reasonable voice, but has also briefed me continually during the process.

We are now at a critical point, where a statutory period for initiating litigation is passing, and major flaws in the Department of Energy/Rockwell proposals are emerging. You have attempted to avoid prejudgment on the issue, an approach I have agreed with. Now, however, I must attempt to influence you to take strong action to protect this state's interest. My response was triggered by the issuance of siting guidelines on Dec. 6, 1984, and the draft Environmental Assessment pertaining to the proposed Hanford site on Dec. 20, 1984.

The guidelines are ambiguous and contain several potential defects resulting in a hopelessly flawed draft environmental assessment. Although the state still has time to comment on the draft EA, Department of Energy's refusal to reconsider its siting guidelines will result in an EA which cannot be made adequate.

The 180-day limit for filing litigation on the siting guidelines is fast approaching and the State of Washington must act quickly to prevent these guidelines from achieving permanent status.

I won't describe in detail the guidelines' inadequacies. They are well covered in the Feb. 26, 1985, memorandum to the board from Charles B. Roe, Jr., senior assistant attorney general, and Charles W. Lean, assistant attorney general.

There also seems to be grounds for litigation regarding water rights. The Department of Energy has advised that the United States has no plans to satisfy requirements of state water law. I do not agree that the United States established water rights for this siting program with the establishment of the nuclear reservation.

The U. S. Department of Energy has refused to fund research pertaining to the commingling of defense waste with commercial high level nuclear waste at Hanford. It has also refused to fund litigation Washington might bring to insure the Department of Energy properly implements the Nuclear Waste Policy Act. Funding is allowed by the act, and we should take DOE to court to force performance.

It seems the height of irony to me that, on one hand DOE will not fund critical aspects of research for safe deposition of nuclear wastes, but at the same time spends enormous amounts of money for Rockwell to arrive at misguided conclusions that can endanger one of the most valued waterways in this country, the Columbia River.

On the issues of geohydrology, container corrosion, transportation, geologic faulting, and basalt flow integrity, among others, serious lapses in information gathering exist, coupled with delays in release of dissenting scientific information and leaps of illogical conclusions that result in a predetermined environmental analysis that itself appears to be destined for legal challenge.

It is time to make the first legal intervention now.

Sincerely,

Brian Boyle

Brian Boyle
Commissioner of Public Lands

envirosphere company
A Division of EBASCO SERVICES INCORPORATED
400 112th Avenue NE, Bellevue, WA 98004, (206) 451-4600

February 28, 1985
ENW-WSDE-L-85-170

David W. Stevens
Program Director
High-Level Waste Management
Program Office
Department of Ecology
Mailstop PV-11
Olympia, Washington 98504

SUBJECT: DRAFT TESTIMONY ON BWIP EA

Dear Mr. Stevens:

Enclosed is draft testimony for presentation by the Nuclear Waste Board at the March 7 USDOE hearing on the BWIP EA. As directed by the Board on February 15, we have limited the testimony to a discussion of the major areas of concern being investigated and indicated that comments on these will be submitted at a later date. The testimony is designed to be delivered within the ten minutes to be allowed by USDOE.

Please note that we have left a space for legal and procedural issues which we understand will be prepared by Mr. Lean.

Please call me if you have any questions about this material.

Sincerely,

ENVIROSPHERE COMPANY

A. Louise Dressen

A. Louise Dressen
Project Manager

ALD:sjs
Enclosure

cc: R. Mohn
R. Gates

DRAFT TESTIMONY TO BE DELIVERED TO THE DEPARTMENT
OF ENERGY BY THE STATE OF WASHINGTON NUCLEAR WASTE BOARD
MARCH 7, 1985

My name is Warren Bishop, I am Chairman of the State of Washington's Nuclear Waste Board. The Nuclear Waste Board was established in 1983 by the legislature to provide the focal point for the state's oversight and review of USDOE's high-level waste activities at Hanford. The Board monitors the USDOE program, negotiates and consults with the federal government, and advises the Governor and legislature on state policies regarding high-level waste management. The board consists of the heads of five state agencies, the Director of the Water Research Center, eight legislators, and a citizen chairman. This board is responsible for preparing and submitting comments to USDOE on the draft environmental assessment on the Basalt Waste Isolation Project.

Before beginning my substantive comments, I want to acknowledge the Department of Energy's enormous task in simultaneously preparing nine major environmental assessments. We especially appreciate the magnitude of the task, because we have seen how difficult and time consuming it is to review just one draft EA--that for the Hanford site.

As soon as it became evident that we would be unable to thoroughly review the document and prepare consolidated state comments prior to the March 20 deadline established by the Department of Energy, Governor Gardner requested an extension of the comment period. I will submit a copy of that letter, dated _____ and addressed to _____, with my testimony.

We continue to be convinced that the mandated review period is of insufficient duration to permit the state a fully adequate review. I wish to confirm that the State of Washington continues to be on record as needing, and formally requesting, an extension of the period allowed for state comment.

7200A

We are presently in the midst of reviewing the draft EA and formulating comments. It is necessary, therefore, to limit my remarks today to a status report on our review process. More detailed comments from the State's Nuclear Waste Board will be submitted in writing at a later time.

I will take the present opportunity to cover three points: a review of Governor Gardner's position regarding a repository at Hanford, concerns of a legal and procedural nature, and technical concerns arising from our review of the draft EA.

First, I wish to emphasize Governor Gardner's statement that his approval of a geologic repository for nuclear waste in this state will be contingent upon a demonstration that (1) the project will be safe, (2) that a State of Washington location for the repository is shown to be better suited than any other site, and (3) that the geologic repository is acceptable to the people of the State of Washington. These three conditions constitute the Governor's primary criteria for deciding whether to accept or disapprove of a proposed repository in this state.

Next, I will briefly present the status of our review of procedural issues associated with the present phases of the site selection process; that is, the nomination and recommendation of sites for characterization.

We are concerned with the following procedural issues:

(1)
(2)
(3)
etc.

We are presently evaluating these issues to determine their ramifications and importance.

Finally, I wish to address the status of our review of the technical content of the draft EA. That review has several major aspects.

First, we are examining the Department of Energy's findings with respect to the presence or absence at Hanford of the various conditions associated with each siting guideline from 10 CFR Part 960 and the department's overall evaluation of Hanford site suitability with respect to each siting guideline's qualifying condition. Preliminary results from this aspect of the review indicate that the state will have comments and recommendations concerning the need to (1) consider additional presently available data, (2) improve certain aspects of the process for evaluating compliance with the siting guidelines, and (3) reconsider certain findings to reflect an appropriate level of conservatism as mandated by the siting guidelines for this phase of the site selection process. On the latter point, I wish to quote from the USDOE siting guidelines, 10 CFR 960:

> ...assumptions that approximate the characteristics or conditions considered to exist at a site...may be used. These assumptions will be realistic but conservative enough to underestimate the potential for a site to meet the qualifying condition of a guideline, that is, the use of such assumptions should not lead to an exaggeration of the ability of a site to meet the qualifying condition.

These technical comments and recommendations will apply to the following areas:

- o Preclosure radiological safety, particularly the potential difficulties foreseen for adequate performance confirmation monitoring caused by the nearby presence of defense-related nuclear activities.

- Environmental, socioeconomic, and transportation factors, particularly the apparently insufficient attention given to regional and nationwide impacts associated with the total waste transportation system.

- Ease and cost of repository development and operation, particularly what appears to be an underestimate of the potential difficulties that may accompany the proposed shaft construction, and the need to expand the treatment of alternate construction techniques and the relative construction costs among candidate sites.

- Long-term waste isolation, particularly as the Hanford site's suitability is affected by significant uncertainties about groundwater travel time estimates, the role of the host rock as a waste barrier, and the potential for and effects of faulting and earthquakes at the site.

- The draft EA treatment of defense wastes, in particular the design implications for the increased subsurface volumetric requirements and the potential increase in transportation impacts associated with the commingling of commercial and defense wastes.

The second aspect of our technical review relates to the comparative evaluation of the Hanford site in relation to the other sites considered for nomination. Particular concerns in this area relate to the selection, application, and documentation of the aggregate ranking procedures used in the draft EA.

The third element of the technical review addresses the estimation of impacts associated with the proposed site characterization activities. We anticipate commenting on the treatment of waters discharged during testing, effects of characterization activities on the ability to

measure baseline groundwater levels, and the possibility of imperfect exploratory shaft seals that might impact ultimate use of the site for a repository.

The final area of technical comment will focus on the preliminary preclosure and postclosure performance assessments presented in the draft EA. We will offer suggestions on the assumptions and methods used in these assessments with the objective of achieving the best possible performance forecasts given current data limitations.

The comments of the state on the draft EA will reflect the legal, procedural, and technical issues outlined above and will take into consideration public input we have received in writing from the citizens of this state and as a result of public workshops held on February 19 in Seattle, February 21 in Kennewick, February 25 in Spokane, and February 27 in Vancouver, Washington.

Thank you for the opportunity to speak at this hearing. We look forward to providing our detailed comments at a later time.

OFFICE OF THE ATTORNEY GENERAL

Inter-office Correspondence Date: March 1, 1985

To: David Stevens, Department of Ecology

From: Charles Lean, Assistant Attorney General CWL

Subject: Draft Testimony

I would suggest the following be inserted under "procedural issues" on page 2 of the Draft Testimony we received yesterday (we should be able to come up with a better term then "procedural issues"):

- We disagree with the USDOE approach of nominating the best site within each geologic media. This means that the Hanford site automatically became one of the five nominated sites just by virtue of being the only basalt site initially selected.

- We believe that the E/A should contain a comparative evaluation of the Hanford site with all other sites and locations considered, rather than with just the other four nominated sites. We have no assurance that these other four sites were initially selected after consideration of potential health and environmental impacts. If five sites are initially selected in an environmental vacuum and then just compared with each other, we have no assurance that the best, or even one of the better sites in the country will be selected.

- The Environmental Protection Agency was required by law to develop standards governing offsite releases of radioactive materials from repositories. These standards must be considered in the repository site selection process, but they haven't been adopted yet. We believe it is inappropriate to proceed with the selection process without the EPA standards.

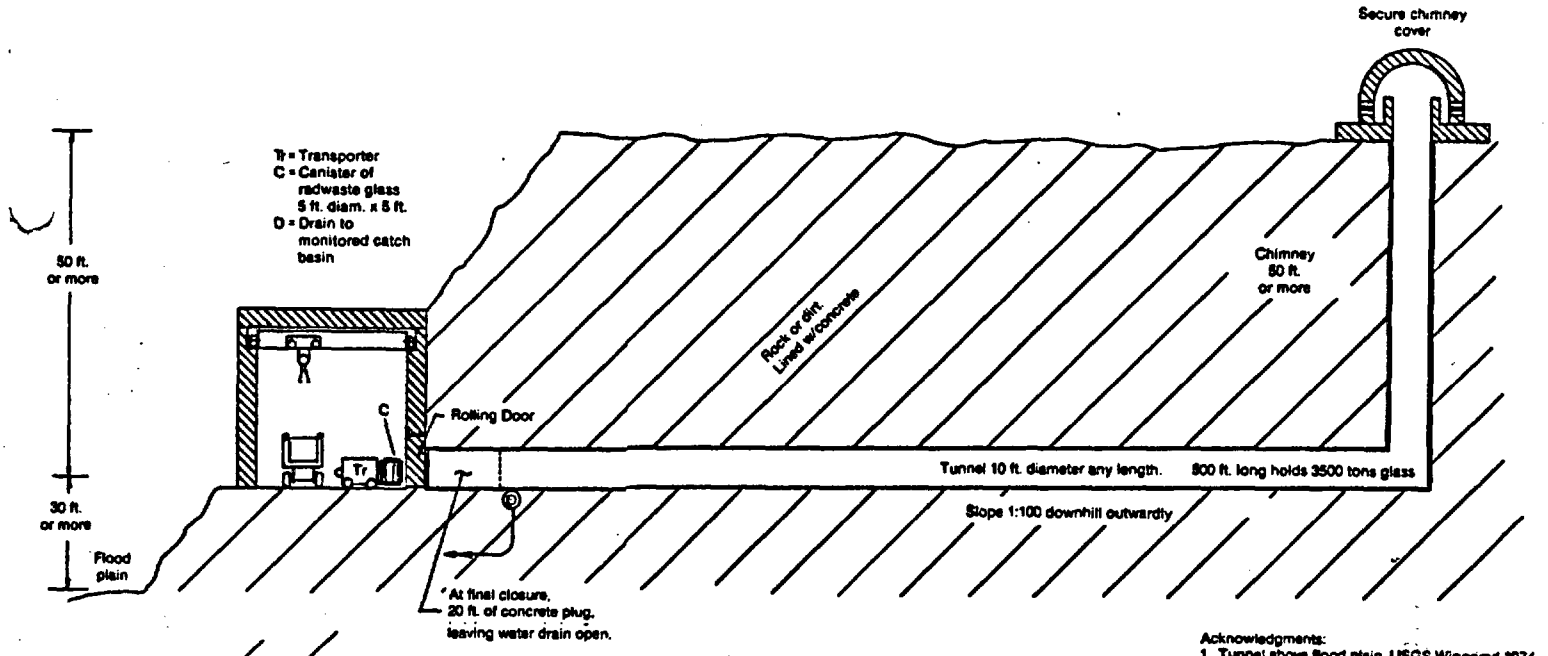
- If the statutory sequence had been followed, USDOE would have prepared a "mission plan" for congressional review explaining its plans for the whole high level nuclear waste program before sites for the first repository were nominated. If this had been done, congress and the public would have been able to review (and perhaps challenge) proposals for other important components of the program, including defense wates. We believe that the mission plan should be submitted and reviewed by congress before any sites are nominated for the first repository.

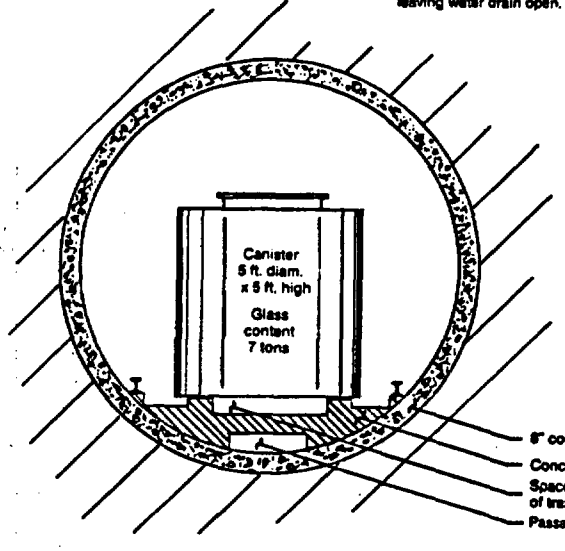
- The E/A indicates no intention to secure water rights for repository characterization, even though water would clearly be needed. Rather, the E/A asserts (p.6-59) that the Federal government "owns" the necessary water rights. We disagree. The state believes that existing water rights for the Hanford Reservation may not legally be used for the purpose of characterizing or constructing a nuclear waste repository.

I have just a couple of comments on the rest of the draft testimony. First, I was most impressed by the consultants' assertions that it is impossible to duplicate the USDOE rankings; this issue should be highlighted. Second, the testimony should be more assertive. Rather than just identifying issues, positions should be taken on major issues affecting the State.

CWL:jc

cc: Charles Roe





Multiple tunnels, parallel, 30 ft. of rock between, for more capacity

Advantage of bored tunnels over deep mine:
Much, much lower cost
Much faster to build
"Waste" is retrievable for precious metals later

Acknowledgments:
1. Tunnel above flood plain, USGS Winograd 1974
2. Drained tunnel storage, UKAERE 1978
3. This concept Penberthy, 1979
4. Tunnel advocacy Hammond 1979
5. AEC Pittman 1973-74
6. Natl Academy of Sciences 1979

Tunnel Storage/Repository for Glassified Nuclear Waste	
Penberthy Electromelt 631 So. 96th Seattle 98108	
L. Penberthy	
14 Nov. '81	Dwg 8158-04

Penberthy Electromelt International, Inc.

Cable Address:
PENELECTRO
SEATTLE

631 South 96th Street
Seattle, Washington 98108, U.S.A.

Telephone:
(206) 762-4244

February 28, 1985

Nuclear Waste Board
State of Washington

RE: BASALT WASTE ISOLATION PROJECT SITE CONTROVERSY
NWB MEETING 1 MARCH 1985, LACEY

In 1978, the National Academy of Sciences issued a report favoring the storage/disposal of nuclear waste in tunnels in Rattlesnake Mountain on the Hanford site. The main advantages cited were:

1. There is practically no water in Rattlesnake Mountain. The waste can be kept dry simply by perching it on concrete sleds which allow water if any to seep underneath and out. Flooding is impossible.

   Comment: The Rockwell engineers almost scream in denunciation of Rattlesnake Mountain citing "all the water."

   That is a gross exaggeration. I personally inspected the side and top of the mountain, and selected a broad (1200 ft wide) slope half a mile from the nearest surface runoff water. It was flowing less than two gallons per minute. There was only a seep at the base of the slope I selected, only enough to water a small patch of grass. The time was May 1984. The water came from rain and snow, identified chemically.

2. The cost of horizontal tunneling above the valley floor is far, far less than the cost of sinking a shaft 3000 feet and hauling up 2,000,000 tons of rock.

   A full 70,000 ton repository for optional long-term storage/disposal of partially-used nuclear fuel will cost:

Below 200 Area (BWIP)	$2,000,000,000
or, depending on the engineering problems going through the high-pressure aquifer	up to $7,000,000,000
In Rattlesnake Mountain	$ 100,000,000

PEN ELECTRO ®

Comment:

Here is the key to the Rockwell-USDOE opposition to Rattlesnake Mountain:

> A repository there would be too easy. The cost would be too low. The bureaucrats and engineers would lose their jobs and only the federal deficit and the taxpayers would benefit.

Quotes:

> Disposing of partially spent fuel in a deep repository irretrievably would be an atrocious waste of energy.
> -Donald Hodel, then Secretary of Energy

> Common experience tells you that when there is a lot of money being passed around, bad things happen.
> -Irving Shapiro, retired Chairman, DuPont

> Technical bureaucracy does not favor low cost solutions.
> -Victor Gilinsky, former Commissioner, Nuclear Regulatory Commission

Comment:

I see no technical objection to a repository at Hanford if in the mountain, but I certainly object to USDOE bureaucrats and Rockwell engineers ripping off the taxpayers by refusing even to consider that low-cost solution.

Prepared by Larry Penberthy

Enc: Seattle Times Tunnel Storage article, October 16, 1983
Seattle Times Viewpoint, February 24, 1985

Radioactive Wastes at the Hanford Reservation
A TECHNICAL REVIEW

Panel on Hanford Wastes
COMMITTEE ON RADIOACTIVE WASTE MANAGEMENT
Commission on Natural Resources
National Research Council

Rattlesnake Mtn. p 110
117

445
520

NATIONAL ACADEMY OF SCIENCES
Washington, D.C. 1978
Mar

7.2.2.6.2 Vault system in basalt in the Rattlesnake Hills

For:

1. The wastes would be high above the regional water table in an arid region, hence probably would have only intermittent contact with percolating water.

2. Contact with water could be practically eliminated by locating the repository in a thick, impermeable basalt flow.

3. The path of groundwater flow to a discharge point would be long, and radionuclides would be held back by sorption and ion exchange.

4. The repository would be high enough to be out of range of even catastrophic floods.

5. In comparison with sinking a shaft, driving a horizontal tunnel would be cheaper and safer per unit of distance.

6. Transportation would be limited to within the Reservation and would not involve lowering and hoisting.

7. The wastes would be more easily retrievable than from a vault reached by a vertical shaft.

8. There would be no problem of sealing a vertical shaft against possible intrusion of water under great pressure.

9. Adequate ventilation for removing heat would be relatively easy to provide.

Against:

1. The geology is unknown in detail, and a suitable site may not be found.

2. Cracks in the basalt and loose rubble in fault zones may provide easy access for groundwater.

3. The Rattlesnake Hills are part of a line of anticlinal structures that may represent a tectonic zone still subject to occasional earthquakes and structural displacement.

4. Just because the Hills stand relatively high, over a very long period they would be more subject to erosion than the low plateau surface.

been no indication of movement, not even a clustering of microearthquakes, but the anticlinal structure might just conceivably undergo minor adjustments (Atlantic Richland Hanford Company 1976:I,154-7). An earthquake could be more destructive here if the rock, as seems probable, is more fractured; but even partial collapse of the roof of a dry vault would not seriously damage its integrity. The possibility of major disturbance from natural calamities, both in the Hills and under the 200-Area terrace, seems remote.

In most aspects, a repository in the Rattlesnake Hills would approximately duplicate one at depth beneath the 200 Areas. Major advantages peculiar to a site in the hills would be: (1) considerably less cost per unit of distance, both for construction and for operation; (2) a position above the regional water table rather than below, and so at virtually zero head; (3) relative ease in closing after placement of waste had ended; and (4) easier retrieval of waste containers, should that be desirable. Some enlargement of the Hanford Reservation would probably be necessary, because the present boundary is on the north slope of the Rattlesnake Hills.

The idea of locating an underground repository in Rattlesnake Hills has been considered by the Hanford management, but no detailed study has been undertaken. The Panel feels strongly that the possible advantages of such a site are great enough to warrant a critical appraisal. Little is actually known about the geology and hydrology of the hills; of course these should be mapped in great detail, seeking in particular to identify a relatively thick, massive, and virtually impermeable layer of basalt as the specific candidate site for a repository.

In principle, even if the bulk of the high-level Hanford wastes were handled according to another option, a small-scale repository in the basalt of the Rattlesnake Hills might be suitable for the capsules of separated strontium fluoride and cesium chloride. Obviously, the considerable radiogenic heat would need to be accommodated; relevant steps might include: (1) re-sizing capsules to preclude melting the host rock (see Section 3.9), (2) spacing capsules widely to suit the thermal conductivity of the host rock, (3) surrounding each capsule with material of large thermal conductivity to increase the area across which heat could dissipate into the rock, and (4) forced ventilation so long as might be necessary. Capsules might be placed in holes bored into a vault floor.

Issues

VIEWPOINT

N-waste at Hanford: A better way?

Larry Penberthy
Special to The Times

THE current Department of Energy proposal to store spent nuclear fuel in mined tunnels below the Columbia River and the Hanford Aquifer is an exceptionally poor engineering concept.

A Rockwell Hanford engineer on the project once said: "The water pressure down there at repository level is over 1,500 pounds per square inch. I wouldn't want to be there myself."

There are more problems for society in the proposal than bad engineering. What about the costs?

First of all, the commercial nuclear material to be put in the repository is "spent" fuel. But "spent" fuel has 80 times as much energy available from it as was used up in the first pass through a reactor. It still contains twice as much fissionable nuclear fuel as is present in natural uranium. After purifying by removal of the fission-product products that cause inefficiency, the reclaimed fuel would be excellent for the Canadian type of nuclear reactor.

After three more passes in today's reactors, the remaining U-238 can be "burned" in the breeder reactors of 100 years from now.

I have avoided mentioning the plutonium that forms part of the fissionable resource. At least one congressman, Rep. Morris Udall, D-Ariz., is spooked by the word and wants to bury the "spent" fuel as far away as possible because it contains plutonium. Out of sight, out of mind.

'Out of sight, out of mind' is irresponsible, if not immoral.

But it would be irresponsible if not unethical and immoral for this generation to deprive the people 10 generations from now of the economic possibility of using this partially spent fuel for their own energy. Coal and oil resources are not limitless, but the known uranium-thorium reserves could supply all the world's energy needs for tens of thousands of years if used completely.

Complete use now is not economic because there is so much fresh uranium available. This is expected to continue for 60 to 100 years. A further deterrent is the high cost of reclaiming the fuel while it is still highly radioactive.

Contrary to the rumors being circulated about the "dangerous radioactivity for umpteen thousands of years," the major activity decays in 400 years to what I call "wristwatch level" — about the same as luminous-dial watches. Short-range alpha activity remains and one must be prudent but need not be fearful.

Second, what about the cost to the present generation? The cost of the repository and its operation plus transportation is said to be $14-25 billion. That is not an inconsiderable sum, even to the Appropriations Committees of Congress.

Larry Penberthy is president of Penberthy Electromelt International Inc., a Seattle firm that specializes in glass research and melting processes.

There are alternatives that are much lower in cost.

The most logical one is to store the spent fuel in large concrete silos on the grounds of the reactor where the fuel has been used.

Massive concrete is cheap, durable and secure. Transportation risks and costs are avoided. Each state that has benefited from the power takes care of its own. The federal government, with its talent for increasing costs tenfold, is not in the way.

The intent would be to leave the fuel there until it is economical to reclaim the remaining fuel values.

A variation is to store the partially spent fuel in near-surface dry wells in arid land. This has been demonstrated successfully in Nevada.

The next logical alternative for partially spent fuel storage is to put it in bored tunnels in mountains. There are hundreds of suitable mountains including Rattlesnake Mountain on the Hanford site and the utterly dry mesas 30 miles from El Paso. Even wet mountains of the East can be used by boring a water-intercept tunnel above the storage tunnel.

A bored-tunnel storage facility for the full 70,000 tons of fuel can be provided for $100 million, moving 200,000 tons of rock. The DOE proposal will cost $2-7 billion, hoisting 2 million tons of rock. The wide price spread recognizes the contingency of catastrophic problems due to the high water pressure.

The bottom line is: What else could society do with the billions of dollars that can be saved? Feed the hungry and homeless? Improve education? Finance Medicare to avoid bankruptcy? Replace the deteriorated bridges and the deteriorated pipes under the streets? Clean up hazardous waste? Reduce the federal deficit? Or, as a last resort, reduce our power rates?

"Only one mill per kilowatt-hour," they will reply. But this one mill multiplies up to $3 billion a year for 30 years.

The Energy Department and the big contractors strongly dislike these alternatives because they will not result in fat contracts. They want nuclear waste to provide them with handsome salaries and profits for a long time, yea unto retirement.

Tunnels endorsed as best N-waste repositories

Exposure to groundwater is a hazard of burial pits

by Hill Williams
Times science reporter

When you drill a hole into the Earth far below the water table, nature immediately starts trying to flood the opening.

That natural process will begin if the Department of Energy goes ahead with a proposal to mine out caverns 3,000 feet below the surface of Hanford as a permanent resting place for radioactive waste.

Pumps can keep the caverns dry during construction and while the waste — which will be sealed in stainless-steel canisters — is being put in place.

But geologists agree that once the waste is in place, caverns backfilled and the whole system is sealed, water inevitably will flood the place. The pressure pushing water through pores and cracks in rock will be something like 1,000 pounds to the square inch.

This is an important factor because flowing groundwater is the only credible way that radioactive material buried at such depth could reach living things.

In fact, the biggest problem the Department of Energy faces in its troubled program to investigate the deep site at Hanford is proving that radioactively contaminated groundwater will remain isolated from living things for the required thousands of years.

The DOE's investigation has cost more than $230 million so far, still without producing firm answers — and now a five-year-old idea for eliminating much of the groundwater problem is getting renewed interest.

The idea is to forget the 3,000-foot vertical shaft down to ancient layers of lava beneath Hanford. Instead, the proposal is to drill horizontal tunnels into treeless Rattlesnake Mountain, which looms more than 3,000 feet above the Hanford Reservation along its western border.

The biggest attraction of Rattlesnake Mountain is that it would be far above the water table, providing a waste repository that would be almost dry.

The idea has attracted blue-ribbon scientific attention.

A 1978 report by a National Research Council panel suggested Rattlesnake Mountain as a site and added that it favored it over a deep site beneath the water table. It qualified its endorsement with a caution that more research was needed on both sites before a firm choice could be made.

Since then the DOE has concentrated its investigation on the deep site, practically ignoring the Rattlesnake Mountain proposal.

The U.S. Geological Survey, which is involved in the nationwide search for suitable radioactive-waste sites, also favors an investigation of Rattlesnake Mountain.

"We endorse the idea strongly," said Jack Robertson, chief of the survey's office of hazardous-waste hydrology. "We said (to the DOE), 'If you haven't given strong consideration to that idea, you should.' "

The Department of Energy at Richland referred questions to the contractor investigating suitable disposal sites, Rockwell Hanford Operations, a unit of Rockwell International.

"Rattlesnake Mountain has never been nor is it currently being seriously considered" as a repository, said Larry R. Fitch, manager of research and licensing for Rockwell Hanford.

Fitch explained that "early in the site-selection process, we set up a criterion that we would like to stay five or more miles away from structures that are potentially capable of generating earthquakes.

"That immediately eliminated our looking at things like Rattlesnake Mountain because it is such a structure. At that point, we stopped investigating it."

But Robertson of the USGS said groundwater transport of radioactive materials is a far more important concern than earthquakes.

"Shaking from an earthquake generally will not cause damage underground," he said, adding that even if there was damage, "a lot of things can go wrong in a dry repository and have no particular impact. That's the main advantage. A dry one can stand a lot of insult."

The National Research Council panel, although acknowledging that the Earth upheavals that created Rattlesnake Mountain over millions of years probably weakened its layers of rock, said:

"An earthquake could be more destructive here if the rock, as seems probable, is more fractured; but even partial collapse of the roof of a dry vault would not seriously damage its integrity."

Robertson said "there is no requirement that a repository be five miles away from a fault. The only requirement is that potential faulting not be a significant threat . . . Faulting even 1,000 feet from a repository would not necessarily cause any problems."

Although Rockwell's Fitch stressed that Rattlesnake is not under consideration, he said that "simply because so many people have been raising the question, we are writing a paper on the strengths and weaknesses of such an approach.

"But it is not an attempt to focus away from the (deep) site we have identified. We are in the Cold Creek syncline on purpose. We think that is the most undisturbed part of the basin and that is why we sited there."

Syncline is a geological description of a formation where rock layers dip down in a "valley" shape. It is the opposite of an anticline, which pushes up ridges.

The proposed repository site at Hanford is near the center of the Cold Creek syncline where the rock layers are almost flat between downdipping sides. The idea is that the relatively undisturbed rock would be stronger, less fractured and more resistant to movement of groundwater.

A Seattle businessman, Larry Penberthy, probably is the person most responsible for reviving enough interest in the Rattlesnake Mountain idea to prompt Rockwell to draw up a paper defending its choice of the deep site.

Penberthy says he became appalled at the deep-site idea in 1979 and has been peppering the Department of Energy with suggestions about Rattlesnake Mountain.

The Nuclear Regulatory Commission will eventually be responsible for licensing a radioactive-waste site.

"There is only one way that radionuclides (radioactive material) can move from deeply buried waste into the environment," said Robert J. Wright, senior technical adviser for the NRC's division of waste management. "And that is by being taken into solution by groundwater and moving in that water to the environment. The advantage of putting waste above groundwater is that the waste will not be continually in contact with water."

In a deep site, "all the workings in the course of time surely will fill up with water," Wright said.

Robertson said the water would be forced into the 3,000-foot-deep caverns under great pressure.

"If you had a pipe 3,000 feet high filled with water, the pressure at the bottom is what you'd be dealing with down there," he said. "In the unsaturated zone (above the water table), there is no pressure to deal with except atmospheric pressure."

Flooding of a waste repository would cause several problems. The heat-emitting waste would heat up the groundwater in the caverns. Hot, mineral-laden water would speed the deterioration of the steel canisters containing the waste, making possible leaks into the water.

"Studies by everyone seem to agree that the waste will heat the groundwater which will tend to make it move upward, to be replenished by cold water coming in from the sides and beneath," Wright said.

"The upward movement would be strictly due to the waste heating up the rocks and groundwater. If this material reached the surface, it could be discharged."

In contrast, the National Research Council panel said, there are indications of a very large "downward hydraulic gradient . . . extending thousands of meters below" Rattlesnake Mountain. This means that any water soaking into Rattlesnake Mountain from rain or melting snow would percolate down past the level of a repository to very deep levels.

Some of that water draining downward would encounter the repository. But Robertson said a repository could be designed so that "any water that entered could flow around the waste and right out again. You could essentially eliminate any prolonged contact of waste with water."

Although the improved possibility of keeping the repository dry would be the overwhelming advantage of Rattlesnake Mountain, the National Research Council panel mentioned other advantages over a deep site:

- It is easier and cheaper to drive a horizontal tunnel than a vertical shaft. The panel estimated drilling costs would be about half.
- A horizontal tunnel would be safer, both from the standpoint of avoiding construction injuries and of reducing the radiation exposure of workers moving waste into the caverns.
- Final sealing when the repository is full would be simplified.
- If it became desirable to retrieve the buried waste, it would be much easier from a dry tunnel than a flooded, deep cavern. Some believe that the unused uranium and plutonium in spent reactor fuel will be needed by future generations.
- Rattlesnake would be almost twice as far from the Columbia River as the deep site. This is not as important now as it was in 1978, at least for licensing. Environmental Protection Agency rules set limits for leakage of radioactive materials 10 kilometers (about six miles) from the repository regardless of the nearness of a river.

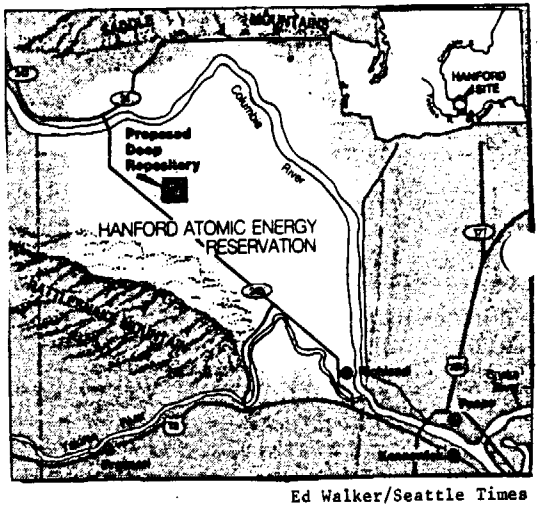
The western boundary of the Hanford Reservation runs along the crest of Rattlesnake Mountain. The National Research Council's panel said additions to the reservation might be necessary if a repository were built there.

"One thing I've wondered about a little bit is if that might be part of the reason for the (DOE's) lack of interest," Wright said. "Being inside the reservation appears to be one of the main attractions, putting it in an area dedicated to nuclear activities for a long time."

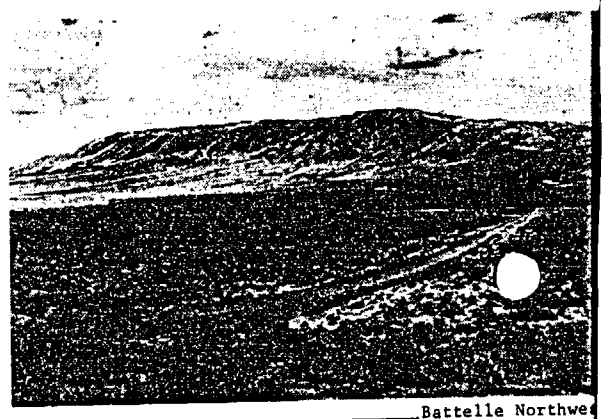
But Rockwell's Fitch denied that was the case.

"That was never considered," he said. "We never said, 'Let's look only inside the reservation boundary.'

"As a matter of fact, we have not looked at Rattlesnake in enough detail to know whether we could build a repository inside the boundary. We knew that (potential earthquake) structure was there so we very quickly got away from it."



Ed Walker/Seattle Times



Battelle Northwest

The Geological Survey favors a proposal to drill horizontal tunnels to store radioactive waste in Rattlesnake Mountain near Hanford Reservation. At 3,621 feet, it is the highest nonforested peak in the Pacific Northwest.

Booth Gardner
xxxxxxxxxx

Andrea Beatty Riniker
xxxxxxxxxx
Director

M E M O R A N D U M

March 1, 1985

TO: Nuclear Waste Board

FROM: Economic Damage Analysis Subcommittee:
Curt Eschels, Chair
Ray Lasmanis
Dick Nelson
Jerry Parker

SUBJECT: Economic Damage Analysis: Background and Definition

A. Background

1. Negotiations of Board with USDOE: The Subcommittee of the Board negotiating a C&C agreement with USDOE identified the need for an economic risk analysis as a means to resolve conflict concerning liability in general, and the adequacy of the Price-Anderson Act in particular. Ellison Burton of USDOE promised that USDOE would perform the necessary analysis. While a schedule was not adopted, the impression was given that preliminary analysis would be completed by the time the draft EAs were released. At subsequent meetings the Subcommittee requested an outline or progress report and was informed that such documents were not ready for release.

   In a letter of October 29 to Ben Rusche, David Stevens requested detailed information on the content and schedule of the promised economic risk analysis.

In November, Representative Nelson discussed the status with Roger Gale of USDOE at the National Conference of State Legislators in Denver. Gale acknowledged a major delay and promised a response.

On December 11 the response of Ben Rusche to the Stevens letter of October 29 was received. It indicated a 20 month study period and contained an outline of tasks to be performed in the analysis.

USDOE is working with Brookhaven and Argonne National Laboratories on the conduct of the study. The date for submission of a revised task statement to USDOE by Brookhaven was extended from the end of January to the end of February. An interim allocation of $400,000 has been made for the study; a budget has not been adopted by USDOE.

2. Scope and Procedures for Proposed Analysis: USDOE and Brookhaven admit they are experiencing difficulty in adopting an approach to a study unique in its time span and in the potential consequences to be considered. At this time the Department favors a generic analysis rather than site specific analysis. USDOE intends to use such analysis in the EIS, but not in the EA. Both USDOE and Brookhaven have emphasized the need for the states and all other interested parties to be involved in scoping and reviewing the analysis throughout the progress of the study. The Project Manager at Brookhaven has expressed a desire to appear before the Board to discuss the issue.

Neither the Board nor the USDOE has adopted a specific definition of economic risk analysis. While the task outline submitted by USDOE in its December 11, 1984 response addresses a range of economic impacts from "non-routine" events, discussion with USDOE officials indicates a

reluctance to admit the possibility of accidents. In its discussion of economic risk analysis the Subcommittee of the Board has concluded that the potential economic impact of both routine and non-routine events should be addressed. The potential extent of radionuclide release from non-routine events must be specified and all such events must be credible. Analysis should not, however, attempt to define the specific probability of "non-routine" releases. Rather, a range of possible releases should be postulated and the economic consequences of such releases calculated. For this reason, the Subcommittee favors the term "economic damage analysis".

3. Provision for Economic Damage Analysis in NWPA and Related Documents: Consideration of economic impact is addressed in the Mission Plan. Economic risk analysis is not. The focus is on the impacts of routine construction and operation on population, housing, wage rates, business activity and land use.

The Siting Guidelines do not specifically identify a need for economic risk analysis. They do, however, specify conditions which can be interpreted to require such analysis. Guideline 960.5-2-6 (Socio-Economic Impacts) lists as a favorable condition "No projected disruption of primary sectors of area's economy". A potentially adverse condition is "Potential for major disruption of primary sectors of area's economy". Finally, a disqualifying condition exists if "Repository would significantly degrade or diminish water from major sources of off-site supplies presently suitable for human consumption or crop irrigation".

A detailed review and interpretation of the guidelines would be required to determine under what assumptions of repository performance such guidelines are to be applied.

Economic risk resulting from routine and unanticipated events in the construction and operation of the repository is not described in the EA and was not a factor in site nomination.

Under provisions of the NWPA, states recommended for site characterization are to be funded by USDOE to develop a request for impact assistance to mitigate impacts of repository construction. It appears that the economic impact analysis provided for in the Act would include the analysis of economic risk. Texas observed that the grant guidelines to the states prohibit states from duplicating analysis performed by USDOE, with the exception of socio-economic analysis. If this interpretation is correct, the state could fund an economic damage analysis independent of that being performed by USDOE.

Steve Frishman of Texas says his office has been negotiating with USDOE for economic risk analysis for a long time to little avail. On 2/11/85 U.S. Senator Lloyd Bentsen conducted a hearing of the Environment and Public Work Committee in Hereford. The focus was to be on economic impacts and given the concern for contamination of the Oglalla acquifer in Texas, examination of economic risk was a probable topic.

Nevada has not taken action to request economic risk analysis but has indicated an interest in this issue.

B. Analysis Desired by the Board

The Board's position that economic damage analysis is an appropriate consideration in site selection reflects the assumption that differences exist among sites in terms of the potential damages resulting from a major release. Economic damage analysis should describe and quantify the economic consequences of both routine and unanticipated events associated with the construction, operation, and presence of each of the potentially acceptable geologic high-level waste repositories for which environmental assessments have been prepared. The analysis should be based on a common methodology but should be site specific and should permit comparison among potential sites in terms of potential economic risks resulting from repositories at such sites. Non-routine events should include a range of rates of release of radionuclides from the repository. While such events must be hypothetically possible, the probability of release should not be a factor in economic damage analysis. Resources at risk should be identified and the costs of decontamination, resource replacement, and repository evacuation or reconstruction should be estimated.

The Subcommittee submits an initial and limited set of considerations in one area of economic impact, water contamination, in order to clarify the nature of the analysis of economic damage it requests. It should be emphasized that potential contamination of water is only one of several areas of potential economic damage to be addressed in the requested analysis.

Potential Impact of Water Contamination

Analysis should describe:

- Dependence of agriculture on water capable of being contaminated. Identify by total area, location, crops, etc.
- Current value of agricultural activities dependent on such water.
- Potential increase in volume and value of agricultural activity dependent on water capable of being contaminated.
- Feasibility and cost of water purification and alternative water resources.
- Dependence of regional population on water capable of being contaminated.
- Potential need to relocate population to limit exposure from water contamination.
- Potential impact of water contamination on real estate values.
- Potential impact of water contamination on water-based recreation, transportation and power production.
- Potential need to relocate population as result of lack of alternative economic sources of water.
- Reduction in fishing resources as result of potential contamination.

Analysis of potential economic impact of both routine and unanticipated releases of radionuclides from the site or from transportation to the site should assume release within two distinct periods: near-term and long-term. Near-term describes a period in which future resource use and economic values can be projected on the basis of existing conditions and trends. In most cases this is assumed to be less than 100 years from the present time.

Analysis of releases in long-term must attempt to describe releases at several points in time over the life of the project. This is recognized to be a highly speculative endeavor. Quantitative techniques may not be appropriate; alternative techniques should be employed. Major changes in future lifestyles within the region which would result from unplanned releases should be described, even if specific economic consequences of such changes cannot be estimated. While the results may not be precise, a discussion of economic damages over the life of the project will reflect in some degree the considerable public apprehension raised by the epochal period over which certain nuclear wastes must be contained.

In view of the unique time spans for both near-term and long-term releases of radionuclides, estimation of the current economic significance of possible future events and conditions should not rely primarily on the discounting of future economic values to arrive at net present values. The unique period of possible impact dictates development of alternative techniques to reflect the present "value" of future events.

STATE OF WASHINGTON
NUCLEAR WASTE BOARD

TESTIMONY OF WARREN A. BISHOP, CHAIR
before the
UNITED STATES DEPARTMENT OF ENERGY
in the matter of the
DRAFT ENVIRONMENTAL ASSESSMENT ON THE HANFORD SITE
Olympia, Washington
March 7, 1985

My name is Warren A. Bishop. I am Chair of the Washington Nuclear Waste Board, the agency designated under state law to carry out a review of federal activities concerning a repository for high-level nuclear waste on the Hanford Reservation. If Hanford is eventually proposed for repository construction, the Board will recommend to the Legislature and the Governor either acceptance, qualified acceptance or the disapproval of the proposal.

Governor Gardner has made clear the conditions required for acceptance, which are fully supported by the Board, and which I believe would be the same in any future administration. These are:

1. Demonstration that the repository will be entirely safe.
2. Demonstration that Hanford is better than any other site.
3. Demonstration of acceptability to the citizens of the state.

A qualified acceptance will indicate that there is some deficiency in the siting, characterization, or design of the project which requires correction.

Since the process leading to a request for licensing of the first repository will span at least ten years from passage of the Act, the Act provides for a number of "milestone" documents to be issued for review by states, affected tribes, the Congress, federal agencies and the public. Issues and problems should be identified along the way and corrected, to avoid the great waste of time and money which could occur if the project were brought up for licensing with some undetected but fatal flaw. Defects may be in the areas of procedure or legal interpretation; in technology or technical documentation; or perhaps due to inconsistencies in the Act itself. It is a responsibility of the state Nuclear Waste Board to call attention to these defects at each milestone, whether they are part of the program or omissions from it. It is a responsibility of the Department of Energy, primarily, but also of the Congress, to make any needed corrections. That is why I am here today--to tell the Department what we are finding in the draft Environmental Assessment that we believe needs improvement or correction or amendment.

The Environmental Assessment--the EA--is an important milestone document, one which will be far more widely read and critiqued than such scientific and engineering studies as the subsequent Site Characterization Plan. It attempts to explain the basis for the selection of three sites by USDOE for additional study, or site

characterization, in order to determine their suitability for repository development. The Board, its consultants and state agencies are still reviewing the formidable technical sections, and the Board, through its Advisory Council, has taken the EA to the general public in a statewide series of workshops designed to highlight issues and concerns of both general and specific nature. As a result of public participation we have made changes in the content and emphasis of this testimony, and in our planning for future activities. Only in this way can we achieve the third essential element for site approval specified by the Governor: acceptability to the citizens of our state of a geologic repository at Hanford.

By the 20th of March we will submit an outline and digest of our concerns with the technical content of Chapters 2 through 6, the part dealing with our first essential element, safety of the repository. It will not be our final word, and the Department should anticipate up to sixty additional days from March 20 before a fully detailed, documented and carefully reviewed appraisal is submitted. As you know, other states, the affected tribes, and even other agencies are doing the same thing. I believe you should welcome this. It will result in greater objectivity and quality of the EA comments. It will also assist the development of a Site Characterization Plan which must also be acceptable to the states, Indian tribes, Congress, federal agencies and the public. While the Department was not required to issue a draft EA for comment, it decided to do so and I believe there is a concomitant obligation to take commentary on a schedule which allows for technical adequacy.

In my comments today I wish first to address some general policy concerns and then to summarize selected technical issues.

The Nuclear Waste Policy Act requires an evaluation of whether a potentially acceptable site is suitable for site characterization and subsequent development as a repository. USDOE's evaluation was based mainly on the federal siting guidelines (10 CFR 960). The state Nuclear Waste Board staff and its consultants conducted an independent technical evaluation of the Hanford site against each guideline. This evaluation indicated that some ambiguous, nonspecific guidelines prevent realistic evaluations and comparisons. The Nuclear Waste Board has asked the state Attorney General to determine the legal adequacy of the current version of the guidelines.

While the technical Chapters 2 through 6 of the EA are necessarily written for scientists and engineers, the people attending our workshops were confused, as we were, by the generic Chapters 1 and 7, which should have been clear statements of how Hanford was selected and nominated, and how the Hanford environment compares with the other sites. We found this issue to rank at the top of public concern in all parts of the state.

Specifically, we are unable to reproduce the Department's ranking conclusions with the data provided in the EA. Needed information includes the numerical weights assigned to system factors, the

results of the voting where voting was employed, and the qualifications of those voting. The public is concerned that this part of the EA may mask a hidden agenda which has been in place for many years. According to some, Hanford is favored as a site by USDOE because it is already a federal reservation, not because of superior geohydrologic and engineering factors. Site nomination and characterization must demonstrate that the final repository site is "best", not just "adequate". It should be apparent that no state would accept a repository if a better site were known to exist somewhere else. This is why "best site available" is the second essential element in acceptance.

This issue of selection and ranking is closely related to the question of whether the EA is properly sequenced with and supported by other milestone documents called for in the Act.

Specifically, we question whether the favorable assertions in the EA can be made in the absence of a Mission Plan which explains to Congress and the states the overall plan for the civilian high-level waste program and final Environmental Protection Agency standards for offsite radionuclide release. Both are required, in our view, for rational analysis of the EA.

The Nuclear Waste Policy Act directs the Secretary of Energy to prepare a Mission Plan to "provide an informational basis sufficient to permit informed decisions to be made in carrying out the repository program..." According to the Act a draft Mission Plan was to be submitted by April, 1984. A revised Mission Plan reflecting comment by states, affected Indian tribes, and other government agencies was to be submitted to Congress by June, 1984.

It is now 26 months since signing of the Act and the final Mission Plan has not been issued. Under provisions of the Act, the Mission Plan was to have been submitted to Congress prior to the recommendation of three sites for characterization in January, 1985. The fact that a revised Mission Plan is not yet available is of concern to the Board for at least two reasons. In our comment on the draft Mission Plan we emphasized that the unrealistic time schedules proposed by USDOE and the clear indication that the self-imposed deadline of USDOE for repository operation in 1998 could take precedence over detailed technical analysis and full public involvement. This remains a concern. Delays in issuance of key USDOE documents and inevitable legal challenges require a revised siting schedule which should be described in the Mission Plan. A determination of the relative importance and timeliness of issues raised in the EAs requires a much clearer statement of the siting process than currently exists. Without a Mission Plan the capacity of the Board and the public to participate effectively in review of the EA is reduced. We conclude, therefore, that the submission of a revised Mission Plan to Congress should precede the recommendation of sites for characterization.

The Nuclear Waste Policy Act requires the Administrator of EPA to "promulgate generally applicable standards for protection of the general environment from offsite releases from radioactive material in repositories". These standards were to be promulgated within one year of enactment of the Act, or by January of 1984. Draft standards proposed by EPA are incorporated into the adopted guidelines for siting. The final EPA standards, however, are yet to be adopted.

While USDOE cannot be held directly accountable for EPA's delay in adoption of release standards, site characterization nominations by USDOE prior to adoption of such standards by EPA is clearly premature. The delay in adoption suggests that revisions in the standards could have a major impact on the ability of potential sites to comply with the federal guidelines.

The argument that the EA must be completed now in order to meet a 1998 operational date is rapidly becoming insupportable. Technical and policy concerns promise to move the operational date of the first repository into the early years of the next century.

There is no way to evaluate the EA without detailed knowledge of the defense wastes in storage or lost to the near-surface environment at Hanford. The Department should add a critically important section to the EA which explains how existing defense wastes will affect performance monitoring of the repository and the total radionuclide budget for releases to the Columbia River over the next hundreds and thousands of years. The argument that the Act does not cover defense wastes does not apply here; defense wastes are already part of the physical environment and must be assessed. Disposal of defense wastes in a repository will have implications on design, size, schedules and transportation, and must be addressed in the draft EA.

As I indicated previously, the detailed technical analysis of the EA by the Board will be presented in a formal written submission to the USDOE. At this time, however, we wish to note some general technical concerns.

A principal concern of the Board centers on the capability of the site to contain wastes in a deep geologic setting which is saturated with groundwater at elevated temperature and pressure. Several potential avenues of release are possible: geologic structure which provides pathways; higher permeability than has been assumed for flow tops and interbeds; thermal effects during the time that waste packages emit significant excess heat; active faulting and earthquake activity; higher radionuclide solubilities under repository conditions than have been estimated in laboratory experiments. The conclusions of the EA regarding the capability of Hanford for containment appear to be decidedly optimistic in relation to the data and technical analysis provided in the EA.

Additional technical deficiences in the EA have been noted by the Board. The ease and cost of repository exploration and development, and of expansion to accomodate commingled defense waste, may be less favorable than the EA indicates. Difficulties in drilling large diameter shafts and in preventing rock failure in the deep environment are downplayed, but some evidence reported elsewhere, e.g., core disking, is not used or analyzed in the EA. The effect of alternate shaft sinking and mining techniques is not adequately discussed.

The monitoring of the repository site and the surrounding air, land and water environment is going to be greatly complicated by the presence of defense wastes released over forty years of operation in both planned and accidental events. The EA must explain how long-term performance can be confirmed by monitoring.

The draft EA fails to adequately address monitored retrievable storage (MRS). We are encouraged by the recent comments of the Director and his key staff regarding the need to incorporate the MRS concept in the overall repository program. We feel this approach will provide the time necessary to responsibly site a geologic repository while permitting the Department to accept spent fuel by 1998. We recognize that the MRS concept will significantly affect both the design of a repository and transportation. We conclude that the EA must contain a description of the role of MRS in the repository program.

The Nuclear Waste Board believes that the potential for economic damage from unanticipated releases in transport to or operation of a waste repository should be a factor in nomination of sites for characterization. This conclusion reflects the Board's position that significant differences may exist among potential sites in terms of economic damages from such releases. The Board's concern for such damages has been expressed to the Department for over a year. A subcommittee of the Nuclear Waste Board negotiating a Consultation and Cooperation Agreement with USDOE identified the need for an economic risk analysis as a means to resolve conflict concerning liability.

We understand that an economic damage analysis has been initiated by USDOE, but results will not be available under the current schedule prior to site nomination and the start of site characterization.

In requesting economic damage analysis in the final EA, the Board observes that the Guidelines (960.5-2-6) specify as a potentially adverse condition the potential for major disruption of primary sectors of an area's economy. A disqualifying condition exists if the repository would significantly degrade or diminish water from major offsite sources. In view of the proximity of the Columbia River to the proposed site and the reliance of the region on the Columbia River for agriculture, transportation, and municipal water supply, the Board finds the absence of economic risk analysis a major deficiency in the draft EA.

The treatment of transportation issues in the draft EA is inadequate in a number of respects; principal among these are the following: (1) failure to reflect risks and costs of alternative routes; (2) failure to incorporate the proposed MRS option in analysis of transportation risks and costs ; (3) lack of clarity concerning the possible role of barges as a transportation mode; (4) inconsistency in defining the region within which detailed transportation studies were made; and (5) significant understatement of the volumes of defense HLW to be transported to a repository.

We feel that the inadequate treatment of these issues results in a deficient EA. Specifically, the EA does not provide sufficient data on which to determine how potential sites compare in terms of costs and risks in transportation. Consequently, transportation has not been adequately considered in the site nomination process.

In conclusion, the Nuclear Waste Board of Washington has taken a position to date that I believe is the only correct one: The site nomination process presented in the EA should produce the three best sites for further study in a manner which is understandable to the public. This condition has not been met in the draft EA. The burden of proof remains with the U.S. Department of Energy. Its technical work must be credible beyond any reasonable doubt, and its milestone documentation must be impeccable. In that spirit I urge the Department to fully consider our recommendations and comments in preparation of the final Environmental Assessment. The Department has the opportunity now to strengthen their program. It should not be missed.