

WM DOCKET CONTROL CENTER  
MINUTES OF NUCLEAR WASTE BOARD MEETING  
February 15, 1985

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

Board Members Present:

Warren A. Bishop, Chair  
Senator Sam Guess  
Senator H.A. "Barney" Goltz  
Representative Shirley Hankins  
Curtis Eschels  
Representative Louise Miller  
Andrea Beatty Riniker  
Representative Dick Nelson  
Representative Nancy Rust  
Richard H. Watson  
Jerry Gilliland, representing DNR  
Senator Al Williams  
Ray Lasmanis, DNR Designee  
Dr. John Beare, DSHS Designee

WM Record File

101.3

WM Project 10

Docket No. \_\_\_\_\_

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

Warren Bishop introduced Andrea Beatty Riniker, new Director of the state Department of Ecology, who was attending her first Board meeting. He also acknowledged Curtis Eschels, Chair of EFSEC, as a new member of the Board, and Jerry Gilliland representing Commissioner Brian Boyle.

Mr. Bishop noted there was a meeting in Denver of the National Conference of State Legislators being held today, and Senator Benitz and Senator Williams are attending that conference.

Mr. Bishop deferred approval of the minutes of the previous meeting until the next regular meeting of the Board, as they were first distributed in the packets at this meeting.

Advisory Council Working Group

Anita Monoian, Chair of the Working Group, gave a brief report, reviewing the more comprehensive presentation to the Advisory Council. She focused on the four upcoming public workshops on the draft Environmental Assessment (EA) to be held:

February 19 Seattle

Seattle Center, Mercer Forum  
305 Harrison St.

February 21 Kennewick

Kamiakin High School  
600 North Arthur

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February 25	Spokane	Spokane County Health Bldg. 1110 W. College, Room 104
February 27	Vancouver	Washington State School for the Deaf 611 Grand Street

She encouraged the Board members to attend these workshops in their own areas, if at all possible. She said these workshops would be facilitated by the League of Women Voters with Board staff and EnviroSphere staff assisting in the presentations. Ms. Monoian called attention to the Information Packets which each member received. She said they had been widely distributed to the written and electronic press across the state, and a copy will be handed to each person attending the workshops. In addition, she said, copies will be available to any person who wants one. Representative Shirley Hankins asked if packets could be available for distribution to each member of the Legislature and was assured they would be secured as quickly as possible. She added availability of the Fact Sheets in the packets will be announced in the February Newsletter, which should be out next week.

Louise Dressen of EnviroSphere was asked to explain the publicizing of the workshops. She said that first the flyer announcing the dates and places of the workshop was distributed to the entire Newsletter mailing list. In addition, ads were placed in the local papers where the workshops will be held, Information Packets have been distributed to the media statewide, and the Newsletter being released next week will notify those on the mailing list of the workshops. Also, she said, telephone networks have been established by contacting individuals in the communities, who in turn contact others, and so on.

Marta Wilder briefly discussed the format of the workshops. She said the purpose was to share information about the state program, to discuss issues related to the draft EA, and to get a feedback from the public. The media briefing is planned at each workshop location at 3:00 p.m. At 6:30 p.m. registration will begin with the assistance of members of the League of Women Voters, at 7:00 p.m. Warren Bishop will welcome the public and David Stevens will review a short slide presentation. Following that, she said, discussion will be held about the draft EA with Dr. Bill Brewer and Louise Dressen leading the discussion. A period of questions and answers will follow, and the citizens will then divide into several small discussion groups, moderated by League members, using a short questionnaire which will stimulate the group discussions. At 9:30 p.m. everyone will reconvene with closing remarks by Warren Bishop at approximately 10:00 p.m.

Ms. Monoian said when the issues the public perceives are gleaned, the information will be furnished to the Board for inclusion in the final comment document.

### Environmental Monitoring Report

David Stevens reported for Don Provost that the Monitoring Committee had made progress on the grant request submitted to the U.S. Department of Energy to begin baseline monitoring for the repository program. In checking this morning, he said, it was learned a letter of approval for the additional funding to cover this monitoring was sent, although it has not yet been received. Mr. Stevens said the original request was for around \$65,000, and he believed around \$89,000 would be available to initiate the project.

Mr. Stevens asked Dr. Beare to comment on the program and the funding request in the Legislature. Dr. Beare said DSHS was also awaiting word as to whether the money would be available. Concerning legislative action, he said, the Department had testified before the appropriate legislative committee, primarily on House Bill 3 relating to the whole process of monitoring the Hanford Reservation. What has been requested for the Basalt Waste Isolation Project in doing the baseline monitoring would be a start for monitoring the entire Reservation. The request of the Environmental Monitoring Committee, he said, is related to this particular project, and should not be considered a continuing process for all monitoring activities. It would be a start, he said, as soon as those funds become available, and they would hope to get underway during the current fiscal year. He said they had tried to convey to the Legislature the need for state appropriation to fund an ongoing monitoring program on the Hanford Reservation, and this particular grant will be a way to get started and perhaps lower state fiscal impact, initially.

### Draft Environmental Assessment Review Activity Report

Louise Dressen of EnviroSphere was asked to give a status report on the progress of their draft EA examination. She said at the last regular meeting of the Board, the decision was made to hold a series of work sessions with the staff and consultants in order to discuss progress and findings, the first of which was held last Friday. In order to stimulate discussion at that session, she said, EnviroSphere was asked to put together a collection of comments from a variety of sources, including staff in various state agencies. The whole intent of that very preliminary document, she said, was to begin to get some kind of feedback on the issues that should be emphasized in the continuing technical review. Some feedback from that document has been received, she said, and in addition EnviroSphere is continuing to do its in-depth technical review of the EA. Currently they are beginning to draft the technical assessment, which will focus on whether the Siting Guidelines appear to be met at the Hanford site. Because of the nature of the Guidelines and all of the uncertainty that exists at this particular stage in the process, she said EnviroSphere anticipates that any of the instances where there are differences of opinion with the conclusions that USDOE

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has reached in the EA will be largely a matter of degree and will reflect the uncertainty that exists at this particular stage. It will focus, she said, mostly on recommended reassessments that ultimately will provide for more defensible conclusions as to site suitability.

Ms. Dressen said it should be emphasized that this particular collection of thoughts distributed last Friday was just a preliminary "think piece" to begin discussion, and anticipated it was probably the last that particular document would be used in that form.

The next stage, she said, will be preparation of Envirosphere's first really critical report based on their technical review of the EA. In the course of developing that report, she continued, they will be looking at some of the thoughts that have been presented by various people. In some cases the comments will be modified in order to explain better the intent, and in other cases they will develop a rationale to support the comment to provide better justification for it. She said in other cases they are already finding, based on their continuing technical review of the materials, that the comment cannot be supported. Thus, it will be eliminated. In one area that guidance from the Board would be helpful, she said, is that in dealing with this full range of comments they are faced with the question of whether the state wishes to list all comments, no matter how minor, or does it prefer Envirosphere focus on those kinds of comments that could make a change in USDOE's analysis of whether the Siting Guidelines are met.

Senator Guess commented he would not like to see the Board include the minor comments, but would like to see included engineering technical reports in an objective manner which are supportable. He thought it inadvisable to include public comments in an engineering report document. He said he would like to see a pure document that is defensible.

Mr. Watson concurred with Senator Guess' remarks, but dissented with regard to those non-engineering issues. He said he would like to see a blend of the objective engineering analyses and objective comments on all other aspects of the issue.

Senator Guess continued he believed the engineering issues should be left to the engineers, and the political issues left to the politicians. Mr. Watson said to be more specific he was concerned about the ranking methodology which fell outside the engineering discipline. Dr. Beare added he understood the responsibility of the Board was to respond with respect to the entire Environmental Assessment, which he thought superseded just the technical aspect presented in the document. Policy issues and the ability of the EA to respond faithfully to the Siting Guidelines and the whole process should also be addressed. Should these points not be addressed, he said, he then questioned

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the purpose of the public workshops, as it was unlikely the technical public would be in attendance. He suggested the format of the presentation of comments could be worked out to include a technical section and a general section, as he felt both were needed for a proper response.

Senator Goltz stated he thought the real challenge lies in the ability of the public to understand highly technical information in terms that are meaningful to them that will speak to their safety and to their future well-being. Unless they understand the technical aspects in lay terms, he said, the political base for making that decision will always be on the side of the lowest common denominator of understanding. He thought a thorough assessment of the EA should be done in both scientific and lay terms.

Curt Eschels expressed his pleasure at hearing a commitment to a comprehensive review that will cover not only the technical, not only the political, but also the legal aspects. He believed that position of the Board coincides closely with the position of the Governor regarding high-level radioactive waste disposal. Mr. Eschels said the Governor's position is that for the state of Washington to accept the responsibility, first the site has to be demonstrated safe to the satisfaction of the state; second, it is superior to other sites; and third, it is acceptable to the people of the state of Washington. Mr. Bishop agreed that these have been the objectives of the Board.

Mr. Bishop asked Mr. Stevens to give an update and progress report on the schedule of the EA process. He mentioned the Governor had recently requested an extension of the review time for the EA, and he asked Mr. Stevens to comment. Mr. Stevens reported five of the six states had requested a formal extension of at least sixty days as had the Yakima Indian Nation. He said no definitive information had been received, although in conversation with Mr. Rusche's deputies they indicated letters of response to the states and the Yakimas are being prepared. He said it was unclear if they would re-open the formal comment period, and this would not be known until the letter is received. He said it could be they will keep the formal schedule date for submission of comments, but might take the comments following up to a sixty-day period as they had done in connection with the comments submitted on the Mission Plan. Two tentative schedules were presented to the Board: (1) the original schedule given the Board with a comment period to March 20, and (2) assumed the extension of the comment deadline to June 1. He said the original schedule simply did not afford the time between now and March 20 to accomplish all that had to be done. He suggested the Board consider another work session around the end of the month-- Friday, the first of March was suggested. Mr. Bishop said, based on Mr. Stevens' discussion, the Board would have to proceed on the assumption it would have at least until June 1st to put the final, formal response together. Mr. Stevens said that was his

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impression, and added the Governor had also requested USDOE delay the public hearings to give more time for the necessary review. Mr. Stevens said it was his impression, since the hearings process was in motion, they might not be changing those USDOE hearings which are scheduled for March 5 in Richland, March 7 in Olympia, March 11 in Portland, and March 13 in Spokane.

Another point raised by Mr. Stevens was what kind of a contribution the Board might wish to make at the Olympia hearing on March 7. There was some concern expressed at the last work session, he said, as to what could be said in a definitive way as the Board was just in the middle of its review. He suggested a short written response to the Department could be submitted indicating the formal comments would be the way the Board would make its reactions to the EA known to the Department, rather than comprehensive oral testimony at the hearings. He said this was a decision the Board would have to make.

Mr. Bishop said the first effort should be made to get clarification from USDOE as to what their specific authorization is going to be, and at the same time describe to the state the legal difficulties it creates. Secondly, he thought it should be noted the Board concurs with the Governor's request that the additional sixty days is needed to finalize comments. Concerning the hearing on March 7, Mr. Bishop felt the Board may be in a position to let the formal written comments be the principal input. He noted the hearings to be held by USDOE were principally for the public and he thought the state did not necessarily need to present a specific position. He asked for comments from the Board.

Mr. Eschels responded by saying he thought the Board's goal is to assure that there is a thorough review of the draft EA, because the comments filed by the state will be taken into account by USDOE to improve the draft in developing the final Environmental Assessment. He said that if USDOE would not accept state comments because they came after the March 20 deadline, what means are left to the state so that comments can continue to be received and be considered by USDOE in going from the draft report to the final document. He suggested in testimony that might be made on March 7, indication be made on any items on which the state is ready to sign off and pointing out there are continuing concerns regarding other issues. This would put USDOE on notice the state has not finished its comments.

Andrea Beatty Riniker asked for clarification on the preliminary schedule which showed a Board Work Session on March 4 with results of the public workshops from EnviroSphere. Ms. Dressen said the intent was to have the compilation of the summaries of comments of the public from the workshops by March 4. Ms. Riniker agreed with Mr. Eschels' comments about the March 7 hearing and asked for further clarification on the legal status of the comments if no formal continuation of the comment period

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is granted. She wondered if the state would be put in jeopardy of having the comments being officially included if submitted beyond the cut-off date of March 20.

Mr. Roe responded his own thought was the state would be put in some jeopardy, and he believed the Board should consider filing some documents within the present time schedule, setting forth whatever the observations of the Board are, plus a statement they plan to submit further supplemental materials unless the total product is complete by March 20. He suggested stating in the initial filing the state respectfully requests the extension. Mr. Bishop asked Ms. Dressen if this could be addressed in this manner. Ms. Dressen said her concern dealt not with the ability to have public comment available to the Board to use in preparing the testimony, but her real concern was having technical comments ready to give at that point that will be justified and supportable.

Dr. Brewer stated he was pleased the consensus of the Board was to stick to the major issues, as he believes it would facilitate the process. He said by March 20 there should be at least an outline of positions on the major technical issues, and the Board will have had time to review them in work sessions. He added that material is still being received that was referenced in the EA, with one key document being delivered this morning. He felt this strongly supports the state's request for extension of comment time. Dr. Brewer added that a technical meeting with the BWIP people was set for March 5 in Richland, and he felt at that time at a professional level, he said, it might be possible to modify or de-emphasize some issues.

Mr. Bishop said he thought the Board should proceed on the basis of having the major technical issues submitted by March 20, with the notice of further comments to follow. Ms. Riniker said she wanted to know whether comments received after the cut-off, should there be no extension, would have legal standing. Mr. Roe responded that, as he understood it, there was no statutory requirements with regard to draft EAs, and that the rules that are made up by the U.S. Department of Energy implementing this portion of the program, are rules they have established without a specific statutory basis. He said he believed if the state met the basic time requirements with these fundamentals, with the statement the state planned to supplement them, it would be legal. Mr. Lean added much would depend upon the kind of response received. Should the Department deny the extension, but state they would hear further comments, the state would probably be all right. Mr. Roe agreed and said further he thought the request for extension should be renewed and fairly soon, stating the urgency of it.

Senator Goltz agreed with proceeding to meet the deadline the best way possible, with the understanding the shift ahead could be made more easily than shifting back.

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Ms. Dressen said she now understood the aim was to direct the activities toward being able to submit a letter by March 20 identifying the areas of major concern, and indicating there will be subsequent material further developing those concerns. She said she was still not clear what the decision was about submitting testimony at the March 7 hearing.

Mr. Bishop said he thought the Board should formally appear at the hearing for the principal purpose the Board would continue to pursue the evaluation of the EA and the formal response will be made on March 20, to be followed by supplementary comments and review. Some of those concerns, he said, could be outlined at that hearing, if possible. Ms. Dressen said one of the keys would be to see the progress at the next Board work session. Mr. Eschels stated that at the March 7 hearing the concerns should be clearly identified, perhaps by category, indicating the state's intent not to waive any rights to comment, depending upon the answer received from USDOE. Then on March 20, he said, the filed comments would be more detailed than those presented orally. He thought it should be made clear in that submission the intent was not to waive any rights to comments the state may make subsequently.

Senator Goltz announced he and Speaker Ehlers would be going to Washington, D.C. next week to meet with the President and other federal officials, including the Secretary of Energy. He intended to take back with him SCR 109, a policy statement by the Washington State Legislature addressing the question of federal liability. The Legislature's position is that the limited federal liability is an impediment to states being able to deal objectively with all the other issues in the Environmental Assessment. He said he was assured by the President of the National Conference of State Legislators that if the Resolution passed, that issue will be one of the issues brought to the attention of the President and to the attention of the U.S. Department of Energy. He added if it were the wish of the Board, he would be happy to carry a letter, or appropriate reminder from the Nuclear Waste Board, following up on the request of Governor Gardner for an extension of the comment period on the draft Environmental Assessment. He said if the letter were delivered to him by Tuesday, February 19, he would see that it was delivered in Washington, D.C. on Thursday.

Mr. Watson asked what action had the other states taken with respect to the time limit for comment. Mr. Stevens responded he understood Nevada had asked for an additional 60 days, Texas asked for 60 days, Utah asked for 120 days, Louisiana asked for 60 days, and the Yakimas asked for 60 days, and he was not sure about Mississippi. Washington State asked for 60 days, plus the 10 days not counted because of the difficulty in delivering the EA when released on December 20.



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With no objection from the Board, Mr. Bishop requested the staff to prepare a letter for the signature of the Chair, reinforcing the Governor's request for an extension of comment time on the draft Environmental Assessment. Mr. Eschels suggested a copy of Governor Gardner's letter of February 6 accompany the letter from the Board.

The decision was made to hold the next work session on the EA on Friday, March 1. Discussion will focus primarily on the technical and policy issues.

Dr. Beare asked Ms. Dressen who makes the determination of the "major" and "minor" issues. Dr. Brewer responded by saying the Guidelines themselves provided some determination by identifying areas of concern rather specifically in the requirements that are imposed upon the Department. He thought there would be general agreement on at least five or six major areas. Under those subsets, he said, issues still being worked on could be referenced. Dr. Beare wondered if the Board needed to get a general idea from the public comments, whether technical or non-technical. Ms. Dressen said in structuring the workshops, the public is being asked to identify issues they consider to be the most important. That information will be available, as well as the information on the full list the public is raising. She thought it inappropriate to impose EnviroSphere technical judgment on whether those were major or minor issues.

The question remained as to when the Board will hear the presentation of the public comments. Mr. Stevens said a written report would be sent the Board, but with a March 1 Work Session there remained the question of a time to discuss them. Also, a draft of the oral comments for the March 7 hearing could not be signed off by the Board unless presented at the March 1 meeting. Depending upon the characteristic and style of presentation of the testimony, Mr. Stevens said it could be ready for the March 1 meeting, if identification of areas of concern with substantive comments to come later were presented. Mr. Bishop asked Ms. Dressen if the presentation for the March 7 USDOE hearing could be presented to the Board in the form of a draft for the March 1 meeting. Ms. Dressen said she would have to consult with the staff in making this joint effort. She said she suspected the areas to be covered would include not only technical, but policy and legal matters as well. Mr. Stevens felt this could be accomplished.

Concern was expressed about reviewing a draft of comments for the USDOE hearing on March 7 at the March 1st meeting, and still take time to conduct a work session on the EA. Ms. Dressen said it would not be feasible to have an in-depth analysis of the technical issues by March 1, and they would be identifying areas of major concern, with the in-depth study following. She added it

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would be possible to mail out a written report on the public workshops the following week, and follow up with a session whenever it seemed appropriate. She asked if it would be possible to get the materials to be presented at the March 1 meeting to the Board prior to the meeting. Ms. Dressen responded the schedule would have to be examined first, and Mr. Bishop expressed his thought that it would be extremely important to have this material prior to the March 1 meeting.

Legal Issues Review

Mr. Charles Roe, Assistant Attorney General, gave a progress report on legal issues which had been requested by the Chair. He divided his report in two categories: (1) ongoing litigation, and (2) areas the Board might consider at a later date.

- 1a. Environmental Policy Institute and others (EPI) v. Hodel  
Mr. Roe said he spoke yesterday with the attorney for the Environmental Policy Institute regarding their litigation dealing with the validity of the USDOE Siting Guidelines. Mr. Roe said at this point the specific allegations or contentions of invalidity have not been developed, no briefs have been filed, and no schedule for briefing has been filed.
- b. Nevada v. Hodel  
This case deals with the validity of the U.S. Department of Energy's funding guidelines, funding of state activities through the Nuclear Waste Policy Act fund. Mr. Roe met with the attorneys, Mr. Murphy and Mr. Davenport, earlier this week to discuss the status of that case. The case now has a briefing schedule and the opening briefs of Nevada are due on March 5. One item of discussion with the Nevada attorneys included their request to consider filing a brief (amicus curiae), or friend of the court brief, in support of the position of Nevada. Mr. Murphy, the lead attorney in the case, advised Mr. Roe he would provide a copy of their draft of the brief, which he had hoped to have today but has not yet been received. Mr. Roe said the primary argument deals with the challenge to the USDOE's decision not to fund Nevada activities relating to primary data collection.
- c. Texas v. Hodel  
Mr. Roe said this case deals with the relatively narrow issue, at least at the moment, of how the site was screened down to the current size it was. Mr. Roe said he spoke briefly with the attorney in the Texas Attorney General's Office, and that case has not proceeded in any precise way through the court system.

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2. Mr. Roe said he and Mr. Lean had looked over specific areas for potential further evaluation and further report to the Board dealing in two general ways: generic implementation of the Nuclear Waste Policy Act by the various federal agencies; and specific implementation that relates to the Hanford Project:
  - a. Mr. Roe reported the attorneys are now in the final stages of working with the Office staff to evaluate potentials in the Siting Guidelines area. This whole issue is before the Circuit Court of Appeals in San Francisco, as a result of the lawsuit brought by the Environmental Policy Institute and other environmental groups. To date no other state is involved in that litigation, he said, although Wisconsin had tried to intervene and was turned down. He said there is a statute of limitations running in this decision, and the latest possible to file would be 180 days from December 6, 1984. He said the Board would be kept advised.
  - b. Mr. Roe said they are looking at the area of environmental assessments. He said they had no recommendation yet, but will watch as program implementation continues.
  - c. The third area the attorneys reviewed was the Mission Plan. The federal statute requires that the USDOE submit to Congress approximately seventeen months from the effective date of the Nuclear Waste Policy Act a Mission Plan. The Mission Plan is in draft form, but has not been submitted to Congress in a timely fashion, and it is now approximately seven months late in its submission.
  - d. The fourth area deals with environmental protection standards which are required to be adopted by the Environmental Protection Agency. They were supposed to have been adopted one year from the effective date of the Act, and they have not been adopted to this date.
  - e. The fifth general area being looked at is the whole area of the validity of the implementation of the Act so far in light of two factors: (1) failure to meet timing requirements, and (2) failure to sequence those decisions in the sequence set forth in the Act.
- 3a. Defense Wastes. In this area, Mr. Roe said, they are working with the Chairman in evaluating methods and means to obtain a determination from the U.S. Department of Energy as to its position in two areas: (1) funding through the Act to the state to carry out certain activities relating to decisions on defense waste, and (2) the area of the scope of C&C agreement negotiations.

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- b. The next major area of funding somewhat relates to the Nevada case. The concern has been whether the state can use the funds under the Act for primary data collection, but also for litigation where the state feels the federal program is not being implemented properly.
- c. This final area, Mr. Roe said, has been discussed informally by the Board. The Chief Attorney for the U.S. Department of Energy at Hanford has advised that the Department needs no further water rights to carry out its site characterization and potential operation program at the Hanford location. Mr. Roe said they are carefully looking into that issue, in which the Washington Department of Ecology also has a prime interest with regard to compliance with the state's water laws. The Board also has an authority to ensure the Nuclear Waste Policy Act is carried out.

Mr. Roe said they do plan to have a draft put into final form for the Board's consideration within the very near future. Mr Bishop said the final paper would be welcomed for discussion by the Board with recommendation by staff and the attorneys.

Defense Waste Report

Mr. Bishop named Curt Eschels to the Defense Waste Working Group to replace Nick Lewis, the outgoing EFSEC Chairman. He also named Mr. Eschels to the C&C Negotiation Team, the Economic Risk Subcommittee, and the Environmental Monitoring Committee for Mr. Lewis.

Mr. Bishop reported the Defense Waste Group had met with the USDOE team. USDOE has submitted the elements they consider appropriate in a Memorandum of Agreement, and it is still under consideration by the state team. The attorneys have been asked to look at all of the legal aspects of the defense waste issue before responding to USDOE. With the attorneys' report the state team is working on two elements: (1) a statement of elements the state team feels, as a minimum, should be included in an agreement whether included in the C&C Agreement or a separate Memorandum of Agreement; and (2) a statement concerning the funding because of USDOE's refusal to fund defense waste activities under the NWPA. Mr. Bishop said the state team is in the process of developing a funding proposal relating specifically to defense waste. These elements, he said, would be pursued when the attorneys have completed their work on the legal side. Mr. Bishop said a meeting would be scheduled as soon as possible in an attempt to bring the recommendations to the Board.

### Grant Modification

Mr. Stevens discussed the need for additional grant funding as a result of Hanford being nominated for characterization, which will cause the Office to expand its activities. He discussed the preliminary request for a additional grant, with the need for approximately 5.5 additional personnel. Additional activities would include increased radiological monitoring in the Hanford area, development of on-site review capability at the BWIP site, expansion of the public information activities, building a program to analyze and participate in the MRS activities, development of a program in the defense waste area, increases in computer-tracking capability of the Issues Identification System, expansion of efforts relating to the specific USDOE characterization activities, and other support items. Mr. Stevens added that since it is not known what the instruction might be from the Legislature relative to a bill being considered that would direct the Board to undertake a transportation risk study, the nature of the grant request might be changed.

Mr. Bishop pointed out the basis for determining a legal action on the defense waste issue may require the Office to require funding. This may cause the funding of the defense waste as a separate element for purposes of establishing a basis for a case. He said although it was included in this presentation, it should be recognized as a separate piece. In response to a question, Mr. Bishop said no additional dollars would be requested from the Legislature, although the authority to spend federal dollars would have to be approved by the Office of Financial Management.

There being no objection the staff was directed to proceed with the preparation of the grant amendment.

### Other Business

Mr. Stevens mentioned the draft Mission Plan which the Department had expected to conclude by the end of the year for submission to Congress for its necessary review was now purportedly to be finalized as of April 29, and submitted to Congress. Under the Act, Congress has 30 days to consider it but, he said, no word had been received of any contemplated hearings.

Concerning the Commingling Report, which would be a Presidential decision as to whether the commingling called for in the Act would actually happen, the statutory date of January 7, 1985, has passed. He said the last reading he had was that the proposal was to go to Office of Management and Budget either last week or this week, and no definite word has been received. He continued this could happen sometime in March and there is every indication the President will act in conformance with the draft recommendation of the USDOE, which was to commingle the commercial and defense wastes into a common repository.

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Mr. Bishop introduced Mr. Ruth Weiner, Professor at Western Washington University. Mr. Bishop said Dr. Weiner was on leave last year in Washington, D.C., and served on the staff of Edward J. Markey, M.D., Chair of the Subcommittee on Energy, Conservation, and Power of the House Committee on Energy and Commerce. While on that tour of duty she prepared a report on the Transportation of Radioactive Material in collaboration with Michael Wagner, a graduate of the Residential College at the University of Michigan.

Dr. Weiner said the work was actually done when Congressman Markey was Chair of the Oversight Subcommittee of House Interior, but will be published by his new Subcommittee. She had available draft copies of the report, dated December 11, 1984, and asked that the Office send to the Board the final printed copy when it is available from Washington, D.C. Dr. Weiner said she was asked to do an overview of transportation of radioactive materials, basically concerning safety. She said a virtual complete lack of unbiased literature on the topic was noticed in doing a literature review. The best report they had, she said, was one that was done by the Congressional Research Service, which is available through the office of any Congressman or Senator, and she has requested a copy be sent to the Board. Also learned, she said, is that most of the radioactive material that has been transported to date is not high-level radioactive waste as the transportation of that is only beginning. Therefore, the data does not exist by and large on high-level radioactive. She said finally there is no data that allows one to say what percentage or trips', or miles', or ton-mile' results in accidents because although the Department of Transportation keeps records of all accidents of hazardous waste materials, it does not keep records on shipments. She thought this was one thing the state of Washington could assess. Although they did examine DOT's data on hazardous materials accidents, it was not possible within the scope of the study to make a comparative risk analysis between risk from radioactive materials transport and risks from the transport of other hazardous materials, which she thought would be the most meaningful risk comparison that could be made. Dr. Weiner said the final overall point they learned is that at the present time high-level radioactive waste and high-level radioactive material is the only hazardous material that is transported as if the truck might have an accident. Other hazardous materials, she said, are transported on the supposition that the truck is never going to have an accident.

Dr. Weiner proceeded to discuss the Transportation Report, the draft of which is available in the Reference Center. When the final document is received it will also be available in the Center.

Discussion followed on the hazards of transporting radioactive material, and agreement was reached a recommendation could be made to improve records management.

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Mr. Bishop introduced Max Power, Staff Coordinator of the Joint Legislative Committee on Science and Technology. Mr. Power said the Joint Legislative Committee on Science and Technology, which also has support from USDOE to help the Legislature in the siting process, contracted with an econometric consultant (ECO Northwest) to do an analysis of the ranking methodology used in the USDOE draft Environmental Assessment. He said the purpose was to focus on the real issues and questions by looking at the methodological points. The Committee, he said, felt that given the size and complexity of the draft EA any tool to help focus would be useful. He added the contractor did not claim to be qualified to look at the substance of the relative geohydrological merit of sites, and looked strictly at the methodology to clarify the Department's thinking and that of the Committee. With the use of charts, Mr. Power then explained the report to the Board.

Mr. Power said the full technical report was available upon request from the Joint Legislative Science and Technology Committee. He distributed a memorandum and draft summary to the Board and to interested parties (see attached).

In response to questions about other methods that could be employed, other than that used by the contractor, Mr. Power said the consultant did not touch on others. He added the Committee had asked the consultant about possible methods of looking at the long-term economic risk issue. In this draft that question was not included, he said, but they should get more on that later.

Mr. Stevens said that over the past year and a half the Office had been working with the Department to try to have a decision methodology in the EA. He said they felt there was still to be a subjective feature to the actual recommendation. He asked, based on Mr. Power's analysis in this particular area, that they still reserve for themselves some subjectivity in terms of how this has come out. Mr. Power said he thought so. He said there are other ways to deal with this, and one the consultant does suggest is to use a Delphi technique. Mr. Power added the importance of a method is that soon a method influences how one is thinking or not thinking about what is being done. Should any good come from doing a critique of the methodology, he said, it ought to be to focus on those things that need to be done better. If it clarifies, he said, it serves its purpose and the numbers could not or should not replace the fact that people are exercising judgment.

Public Comment

Eileen Buller of the Hanford Oversight Committee commented she thought the methodology presentation was very interesting, but thought an important step was omitted. That, she asked, how did the Department arrive at the first nine sites? She said that would remain a question in the public mind until it is clarified

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now only through legal judgment. She added she had no faith in the Department's objectivity, much less their subjectivity on the first nine sites.

Ms. Buller said another suggestion she had was that this Board ask the Office of the Attorney General to hand carry to the Board within the week an analysis of the litigation. She said the Oversight Committee would also like to see this document. She referred to the litigation filed by the State of Texas concerning the site selection for Texas and strongly recommended the Attorney General look at the state's position on the initial site selection to see if it was a valid criteria. She said the Committee believes all stops should be pulled out at this point to question while there is time, how Hanford was selected in the first place. She felt some avenues would be closed to the state in July. Ms. Buller added she wished the state could take a stronger position and be a little stronger in its comments.

Gerald Pollet, Attorney for WashPIRG, commented that maybe in terms of Mr. Power's analysis the answer is to do an alternative ranking, gathering together fifty members of the academic community, public, and public officials to do a Delphi analysis to rank the sites. He thought the results would be different and would carry more weight for the state to do a Delphi analysis than the three methods that USDOE used.

Mr. Pollet asked on behalf of WashPIRG that the Board request the U.S. Department of Energy to hold one of its hearings on the draft EA in Seattle. He said the Seattle briefing by USDOE on the draft EA was overcrowded, and he felt there is an intense, strong interest in the state's largest city and they wondered why Olympia was chosen. He criticized the public information program and said the workshop would only provide information, with only commentary coming from the public. He thought there should be a second opportunity for comment after the information is distributed at the workshops. He said the lack of prior information before the workshops called for the second step in getting back to the people for their comments. He also felt the public is not being told how their comments were going to be summarized.

Mr. Pollet commented on the request for a grant, and felt there should be allowance for more than one additional full-time person for public information. He felt a long-term public information program needed more than two people to carry out an adequate program over the next several years. He said no mention was made of public comment on potential litigation by the state, and there was no opportunity for the public to comment on the state's prime contractor's technical report on the draft EA. He thought the public should have an opportunity to see those comments before the deadline.

Dr. Beare asked what has been done by WashPIRG, other than reacting, as the methods are developed to proceed. Mr. Pollet said



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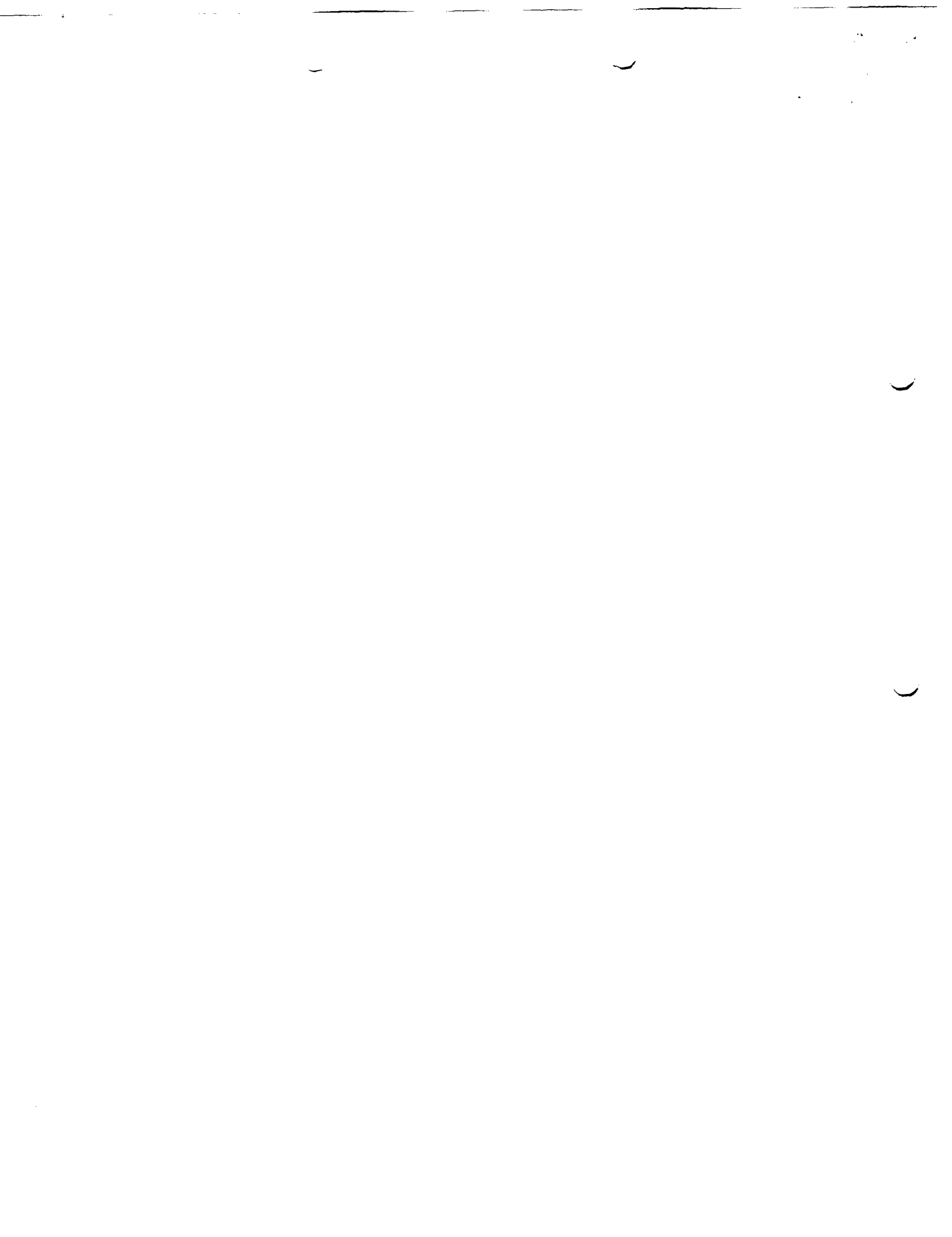
suggestions have been submitted in the past, some were given today, and WashPIRG is putting out to the public a "Lay Person's Guide to the EA", which will be available before the workshops, which he thought were jobs for the Board. He felt there was a need to have on the Board some people with some real expertise in public participation mechanisms and that should be included in the grant.

Mr. Watson said he would like to consider the question of a lack of USDOE public hearing in Seattle. He felt this was a need, and it would be appropriate for the Board to request USDOE hold a hearing in Seattle. Mr. Eschels said the Governor made the observation in his letter to the Secretary of Energy that the amount of time for the public to review the EA made it impossible for them to do it adequately. He did not believe he asked for additional hearings. In a separate letter he had asked for two additional hearings--one in Spokane and one in Vancouver.

Mr. Eschels observed it might be beneficial to give more prominence in the Information Packets the address for the public to send their comments directly to USDOE.

Mr. Watson moved that the Board formally request the U.S. Department of Energy to hold a hearing on the draft Environmental Assessment in the city of Seattle. The motion was seconded and carried unanimously.

There being no further business, the meeting was adjourned.





# WASHINGTON STATE LEGISLATURE

Senate • House of Representatives • Legislative Building • Olympia, Washington 98504

## Joint Legislative Committee on Science and Technology

### MEMORANDUM

DATE: February 14, 1985

TO: Members, Joint Legislative Committee on Science and Technology  
Members, Nuclear Waste Board

FROM: *MSP* Max Power, Staff Coordinator

SUBJECT: Report on Ranking of Potential High Level Nuclear Waste Repository Sites

Attached is a summary of the draft report received from ECO Northwest, who were retained by the Joint Committee to review the methodology used for ranking potential repository sites. The draft--essentially a long technical paper--was received February 13, and has yet to be reviewed extensively. Copies of the full draft will be made available to you on request.

The technical findings must be viewed in the context of the policy discussion surrounding the state's response to the Draft Environmental Assessment (EA) of the Hanford site. This memo gives examples of ways in which the findings may lead to specific comments.

The Joint Committee's hope and interest in asking for this analysis was to provide focus for the many comments and criticisms that were expected concerning the Environmental Assessment on Hanford. There are three areas where it does help focus: (1) clearing away the underbrush; (2) providing specific recommendations as to how sites should be compared and ranked in future; and (3) underscoring the importance of key steps in the continuing analysis of sites.

#### 1. Clearing Away the Underbrush

(Points that USDOE's draft environmental assessments recognize, but nonetheless need to be more widely understood.)

- A. The three sites preliminary identified for characterization are not necessarily the "three best" sites, either from among all those reviewed or from among the nine "potentially acceptable" sites on which detailed information was developed for the EA process.
- The requirement in the USDOE's siting guidelines (10 CFR 960) to treat a diversity of rock types and geologic settings overrode rankings of various sites as to their performance on specific guidelines. The process produced three diverse sites. This may be justified in order to get the requisite data to know which type will best perform the function of a repository--to isolate wastes stored therein.
  - ECO analysis shows that the screening process that narrowed the field to nine sites may have eliminated sites that might outscore one or more of the nine if they had been evaluated on all the guidelines.
  - ECO shows how inclusion of the four "potentially acceptable" sites dropped from further analysis might have affected rankings among the remaining five sites, even if the four dropped sites ranked lower over-all than the five "nominated sites."
- B. Two of the three ranking methods used by USDOE are technically invalid. They mix "ordinal" (greater than/less than) data and "cardinal" (how much distance between A and B) numbers. Either of two undesirable results may occur. First, numbers assigned simply to denote ranking of one site over another are added, multiplied and divided, implying a certainty and uniformity of information that the facts do not support. Second, however, if we do know something about relative distance between A and B, then these methods arbitrarily set all distances uniform, whatever data we have.
- C. The method used does not weigh costs against benefits.
2. Problems/Shortcomings in the Ranking Methodology That Must be Corrected Before Further Use
- A. The siting guidelines lack necessary qualities to serve as a basis for the rankings.

- They are not independent. Some conditions (like population density) are also part of other guidelines and are, in effect, double counted. The weights given those factors are not explicitly stated in the guidelines.
- The guidelines provide no rule or guidance for summing or scoring several "yes/no" decisions about the presence or absence of the favorable or potentially adverse conditions in each guideline. The basis for the score on each guideline is not clear, and therefore, cannot be "replicated"--gotten by somebody else using the same technique and data.
- While some groups of guidelines are held to be "more important" than other groups, there are no rules as to relative importance of individual guidelines. Thus, within the post-closure group, such guidelines as geohydrology and ownership and control are treated equally. Intuitively, however, it seems like the former is more critical to long-term system performance than the latter.

B. The utility estimation method--the one ranking method used in the EAs that may be appropriate--may not be valid, due to the guideline problems and also to the following flaws:

- Information on the derivation of individual site scores on individual guidelines is not available. The results aren't "replicable"--another group using the same data wouldn't get the same answers.
- There is an assumption that the "distance" on each guideline can be measured on a scale of 1 to 10. Put another way, one site can only be 10 times better than another on that guideline. There is no analysis to justify this assumption.

3. From Method to Substance: What the Analysis Tells us To Spend Energy On

The above emphasizes the importance of the scores of each site on each guideline--how both the "distance between sites and absolute level of performance are measured--and the weight assigned each individual guideline. This was confirmed by a "sensitivity analysis" done by ECO. Sensitivity analysis ask how much one assumption or variable must change in order to affect the outcome--in this case the relative ranking. ECO confirmed what USDOE reported: If you grant the assumptions used in scoring (a

big "if": in light of the material in parts 1 and 2 above), then changes in the weights assigned groups of guidelines or changes in the ranking of sites on individual guidelines do not change the "top three" (though the order among them may change).

However, relatively modest changes in site scores on individual guidelines, coupled with the assignment of greater weights to some guidelines within the post-closure or preclosure groups, produce changes in the rankings. For testing purposes, ECO used random or arbitrary variations to produce such changes. The tests indicate that the ranking process is sensitive to these two factors.

These are the substantive factors as well: the relative importance of each guideline toward the assurance of system performance, and the methods for establishing the performance of each site on each individual guideline.

4. Possible Comments: For Discussion Purposes

1. Make explicit that these are not three "best" sites, but only three diverse potentially acceptable sites. Recommend review of larger list of sites after characterization to see if additional information gained would clearly indicate that one or more sites passed over would in fact outperform one of three remaining sites. (Characterization may produce data that would elevate or demote all sites in one rock type.)
2. The averaging and pairwise comparison methods of ranking are not technically valid. They should not be used as a basis to justify the choice of three candidate sites; nor should they be used subsequently to choose among three candidate sites.
3. A choice among candidate sites for a first repository site should include cost/benefit analysis. Particularly if all sites are to be judged equal in ability to meet basic standards for system performance, then their relative costs will become a major basis for discrimination.
4. Revise guidelines to assure that they are independent. Conduct standard statistical tests for independence. Establish a replicable method for scoring sites on each guideline. Assess weights of individual guidelines in terms of the contribution they make to overall system performance goal.
5. If the utility estimation method of ranking is to be used in subsequent levels of decision regarding repository site selection, the following improvements must be made:

- a. The relative weights of individual guidelines must be set.
  - b. The means of summing performance of each site on the various conditions in each guideline into a score must be made clear and replicable.
  - c. The means to establish the scale, or potential distance between sites, on each guideline must be set.
6. Subsequent ranking exercises must be subject to much more thorough-going sensitivity analysis.

MP:dc7-12

**ANALYSIS OF THE METHODS USED TO  
RANK POTENTIAL SITES FOR  
NUCLEAR WASTE REPOSITORIES,  
AS REPORTED IN THE USDOE  
DRAFT ENVIRONMENTAL ASSESSMENT,  
DECEMBER, 1984**

**Prepared for:  
The Joint Legislative  
Committee on Science  
and Technology  
Washington State**

**Prepared by:  
ECO Northwest**

**February 1985**



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## SUMMARY OF FINDINGS

### A. EVALUATION OF RANKING METHODS USED BY USDGE IN THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

Our evaluation of the three DOE's ranking method used in the DEA (averaging, pairwise-comparison, and utility-estimation) leads us to the following conclusions, which respond to some of your questions:

1. The exclusion of four "potentially acceptable" sites from the ranking process could, in theory, have changed the three sites recommended for "characterization" (the detailed analysis of factors that determine how well a site meets the technical guidelines for a waste repository). Whether the three sites would have changed, in fact, is an empirical question requiring that the rankings be redone including the excluded sites before it can be answered.
2. There exists a number of reasons to suspect that the DEA's set of siting guidelines is redundant. If so, all of the ranking methods involve double-counting, and their results are invalid.
3. The DEA is incomplete because it does not report in detail the results of a thorough sensitivity analysis. There is considerable uncertainty associated with (a) the derivation of guideline scores from the implicit aggregation of binary (pass/fail) evaluations, of "favorable" and "adverse" conditions, and (b) the specification of weights for the individual guidelines. A more thorough sensitivity analysis would expose the uncertainty associated with the computational methods.
4. The two ordinal ranking methods (the averaging method and the pairwise-comparison method) are inappropriate for the site-evaluation problem. They are seriously flawed because either (a) they use cardinal techniques on ordinal data, or (b) they make an arbitrary conversion of ordinal measures to cardinal measures, disregarding the supposedly more accurate cardinal measures used in the utility-estimation method. Ordinal rankings obscure the extent to which one site is superior to all other sites, generating rankings that do not fully utilize the available information about site characteristics.
5. The rankings generated by the utility-estimation method are of questionable validity; from the information available in the DEA, we conclude that the method was not properly executed.

## B. SENSITIVITY OF RESULTS TO CHANGES IN WEIGHTS AND SCORES

For each of three ranking methods, we test the sensitivity of the rankings of five sites to changes in assumptions about the relative importance of sets (two sets: postclosure and preclosure), groups (four groups: postclosure, radiological safety, environment/socioeconomic/transportation, and cost of siting), technical guidelines (twenty), and rank within each guideline. We assume (though our analysis in Section II of this report shows it a poor assumption) that the three methods are correctly applied and valid; we address only the effects of changing the values of some of the data that the methods use to generate site rankings.

Our key findings concerning the averaging method and pairwise-comparison method are:

1. As reported in the DEA, the top three sites remain the top three sites (though occasionally their order relative to one another changes) for most changes in the relative weights of postclosure vs. preclosure, and in the relative weights of the three preclosure groups.
2. When postclosure is weighted 85% or greater, David Canyon replaces Yucca Mountain as one of the top three sites.
3. Changes in the relative weights of the three preclosure groups did not, by themselves, change the top three sites, as long as the relative weights were consistent with the requirements of the guidelines that radiological safety group gets weighted greater than environmental/socioeconomic group, which in turn gets weighted greater than site-cost group.
4. Changing the scale of the scores (e.g., changing from a 1-5 scale to a 1-10 scale, or weighting high ranks more heavily than low ranks) changed the order of the top three sites, but the sites included in the top three remained.
5. For all changes we made, Richton remained the fifth-ranked site.

Our key findings for the utility-estimation method are:

1. Most of the general findings about the sensitivity of the averaging method to changes in weights apply to the utility-estimation method as well.

2. Ranks are not sensitive to changes in weights of pre-closure groups, as long as radiological safety is weighted more heavily than environmental/socioeconomic, which in turn is weighted no less than site costs.
3. In general, we can change which sites get into the top three sites only by changing the unweighted (raw) scores of the sites on individual guidelines. The types of changes we test in our analysis cannot be easily summarized: they are described in Section III and in Appendix A.
4. It is unambiguous that the overall rank will be sensitive to selective changes in the weights of individual guidelines. The proper weight differentials are a scientific question that we cannot answer in this report. Nonetheless, we can state that a) the technical guidelines within each group are probably not equally important to achieving the system guideline, b) a change in weights to more closely reflect relative importance could affect overall rankings, and c) the lack of those differential weightings (or a rigorous description of why all guidelines in a group are of approximately equal importance) increases the uncertainty of the final rankings.

#### C. CONCLUSIONS

1. Nothing in our analysis can prove that the DEA identifies the wrong three sites for characterization. We would, however, not expect more rigorous methods for screening and ranking sites to select the same sites. Nonetheless, given DOE's requirements for a diversity of geohydrological and rock types, characterization of the three sites selected may do the most to reduce uncertainty about the importance of different conditions to a site's suitability as a repository.
2. Because inappropriate methods and poor execution, the sites the DEA selects for characterization cannot be proved to be the best three sites of all sites evaluated for a repository.
3. If the State of Washington agrees to let characterization proceed at Hanford, it should do so only after the explicit recognition by DOE that 1) proceeding with characterization does not imply that Hanford is one of the three best sites for a nuclear waste repository, but only that it is a prototypical site, the study of which will reduce uncertainty about the desirability of basalt flows as repositories; and 2) when

characterization is completed at all three sites the data will be used to rank those sites using methods that correct, to the extent possible, the errors described in this report.