

WARREN A. BISHOP  
Chair



101.3

PDR  
LPDR - WM-102

STATE OF WASHINGTON  
NUCLEAR WASTE BOARD

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MINUTES OF JOINT NUCLEAR WASTE BOARD/ADVISORY COUNCIL MEETING

December 19, 1986

WM Record File

WM Project 10

1:30 p.m.

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

EFSEC Hearings Room

PDR

Rowesix, Building #1

LPDR B

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Board Members Present:

cc: McDonnell

LaSerra

- Warren A. Bishop, Chair
- Senator Max Benitz
- Curtis Eschels
- Dr. Royston H. Filby, Water Research Center Designee
- Senator H.A. "Barney" Goltz
- Representative Shirley Hankins
- Phil Johnson, Department of Ecology Designee
- Nancy Kirner, DSHS Designee
- Ray Lasmanis, DNR Designee
- Representative Louise Miller
- Representative Dick Nelson
- Representative Nancy Rust
- Pat Tangora, Energy Department Designee
- Senator Al Williams

Council Members Present:

- Philip Bereano
- Phyllis Clausen
- Nancy Hovis
- Sam Reed
- Robert Rose
- Commissioner W.H. Sebero
- Betty Shreve

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

In his opening remarks Mr. Bishop said the retreat held at Alderbrook the past two days to discuss the Consultation and Cooperation Agreement had been intense and important. The purpose of the retreat, he said, was to review the elements involved in a C&C agreement in order to advise and make suggestions to the Governor to enable him to respond to the Secretary of Energy's invitation to enter into negotiations. Mr. Bishop said major points would be discussed today, and all other suggestions would be compiled for distribution to the Board and Council later.

Mr. Bishop extended his personal thanks to the staff for their efforts in putting together meaningful suggestions in such a short period of time.

Mr. Bishop explained that the outline of issues and solutions would be discussed by the full body, with action items being voted on first by the Council as advisors to the Board, and Board action to follow.

#### Minutes

Approval of the Minutes of the November 20 and 21, 1986 meetings was postponed until the next regular meeting.

#### Report on C&C Retreat

Mr. Husseman briefly outlined the process the Board and Council members went through with staff and counsel at Alderbrook. He stated that first a series of background presentations was held to bring the C&C Agreement into the context of the current situation. Current action of the state included the five filed, solid lawsuits being aggressively pursued. A second course of action, as a result of Board Resolutions and the Governor's presentation to Congress, is to inform and attempt to convince Congress

that it is time for Congressional intervention to amend the Nuclear Waste Policy Act, if the process cannot be put back on track in any other way. At the same time, USDOE is going forward toward site characterization and the state continues to monitor their activities closely, and will conduct any independent studies deemed necessary. The state will also take steps to increase the public knowledge and awareness of the process and to seek new ways to increase public involvement.

The second presentation was made by Narda Pierce, Chief Counsel in the litigation matters. She summarized the cases in progress and their current status.

The third presentation was made by Charles B. Roe, Senior Assistant Attorney General for the Board, on the Federal and state laws relating to the C&C Agreement.

The fourth presentation was made by Don Provost of the staff who had participated in the C&C negotiations that were held between Mike Lawrence, USDOE Richland, and the Office earlier, in which USDOE invited the state to participate, along with all the other states and tribes affected in the selection, to meet jointly to discuss C&C negotiations. All parties refused to participate in a group negotiating process and indicated some general concerns about an agreement. Governor Gardner then received a letter from Ben Rusche about a month ago inviting the state to participate in C&C negotiations, and the Governor is now seeking advice and comment to respond to that letter.

Curtis Eschels then presented Governor Gardner's proposed course of action, asking the Board to review and provide advice and comments on it. Mr. Husseman asked Mr. Eschels to explain the proposal.

### Governor's Proposal

Mr. Eschels reminded the Board and Council of the revelations of the past few weeks, including the Congressional investigation, the GAO report, etc. He also mentioned the overwhelming passage of Referendum 40 by the citizens of the state, expressing their frustration with the activities of USDOE and directing that challenges to them continue. Mr. Eschels said this backdrop led to the following position: the state believes that the decisions announced by USDOE on May 28 are not valid, and that the suspension of the search for a second-round repository was made incorrectly. Therefore, the state does not agree to go beyond that point, including entering into C&C negotiations under the Act. Realizing this would have led to about two years of continued conflict, with a loss to the nation of approximately a billion dollars and two years of time, the Governor asked the Board and Council to devise a precursor to the statutory C&C Agreement negotiation to correct the flaws that led up to the May 28 decision, without tearing down the process. In other words, he said, a mid-course correction is being sought.

The proposal is to urge USDOE to take the lead, to invite all of the interested parties to a process under which the conflict could be resolved. The aim would be to devise means to make the mid-course correction. He said USDOE probably should be one of the parties to the negotiation, but because of the credibility problems a highly-trained, well-respected conflict resolution leader is needed. Also to be included should be all of the states that have ever been on a list, representatives of the environmental community, the regulating agencies and nuclear utilities, as well as the states selected and the affected tribes.

Mr. Eschels said as prerequisites to participation, the participants should

acknowledge that the goal is to find a solution to the problem, and that there needs to be a change in direction of the selection process to increase its chances of success. Along with the prerequisites would come a commitment to direct their energies toward solving the problem, without any effort to assign blame.

Mr. Eschels said there were two principal objectives: 1) look at the near-term problem and devise a timely solution to the short-term problem the utilities have; 2) establish a site-selection process which will provide confidence and credibility in the outcome, in order to find the best site based on the best credible, technical information.

Mr. Eschels added his appreciation to all those who spent long hours exploring, refining, and commenting on the Governor's proposal.

### Suggested Approach

Mr. Husseman explained the larger group at Alderbrook broke into two smaller groups that came up with questions, comments, or individual concerns regarding the Governor's proposal. The list of concerns was distributed to the Board, along with a more orderly Summary sheet. Mr. Husseman said the hope was for the end product to be a letter report to the Governor, incorporating the thoughts of the Board and Council members. He outlined a suggested approach including general comments, specific comments, and any others in a reply to the Governor. He cited several examples, including: the proposal should be expanded to allow for possible solutions, other than amendments to the Nuclear Waste Policy Act; the state should reaffirm its strong opposition to USDOE's May 28 actions; a statement should be made pointing out that USDOE's actions on the site selection process has damaged USDOE's credibility; emphasis should be put on the

state's position to pursue aggressively its litigation and reaffirm its confidence it will prevail. He also said no action should be taken that would jeopardize any of the state's lawsuits.

The meeting was opened for discussion. There was some concern expressed about time allowed for consideration and comment on the Governor's proposal. Senator Goltz was of the same opinion, and said rather than too specific a response, the advice and comment should be relatively general, and urged that the body remain supportive of the Governor's concept without restraining him with some very specific language. Nancy Kirner added that the state is in a position to respond in a timely manner, although she, too, felt rushed. She said it was just one more characteristic of the 1982 Act which sets out very specific timelines. Mr. Eschels reminded the members the state had been invited twice to resume C&C negotiations, and under the Act the state is required to respond. He said it should be realized the state would only be identifying major tenets under which the state is operating, and not signing off on a final, highly-detailed proposal.

Mr. Reed pointed out that following the Governor's meeting with USDOE and presentation of an alternative to the process, he received a noncommittal response. Mr. Reed felt the need now was a mechanism to ascertain whether USDOE has the interest and the willingness to move ahead with that approach. He felt the Governor's message only needed to encompass that which will gain a response. He thought a process could be designed later based on the concept the Governor would propose.

#### Key Issues

Mr. Bishop directed the discussion to the Key Issues identified by those who attended the meetings at Alderbrook. Mr. Eschels added for those who were not

present yesterday that the meeting which occurred in the Governor's office yesterday was at the suggestion of Ben Rusche. While meeting, the Governor first listened to Mr. Rusche's remarks, and then informed him a proposal had been given to the Board and Council requesting comment. He did touch on the highlights, alerting Mr. Rusche the formal proposal would come back with the Governor's response to the C&C invitation.

In response to Senator Goltz' question, Mr. Eschels stated Mr. Rusche said that he was always pleased to receive suggestions from the Governor, and that he would not commit. His was an open response, Mr. Eschels said, and was neither positive nor negative. Mr. Eschels added Mr. Rusche is constrained by his superiors and the Congressional oversight committees, who have a perspective different from the state of Washington.

Discussion continued and Mr. Eschels was asked to summarize the Governor's concept for the benefit of those who were unable to attend the meetings at Alderbrook. In brief, he said in response to the invitations to resume the C&C negotiations a two-part answer would be sent to USDOE. The first part would indicate the state's unwillingness to enter into negotiations on C&C under the Act about site characterization. The second part would propose that USDOE organize a process to resolve the conflict and as part of that process include as participants those who have a stake in it. Mr. Eschels emphasized that the proposal says the state will not proceed with the C&C negotiations at this time, and because of the circumstances that led to this, the state is unwilling to go into negotiation as if there were no problems. This, he said, is a precursor to the statutory C&C negotiations. A detail of the proposal would be the use of an impartial conflict resolution consultant.

Senator Benitz commented that he would hope that if recommendations or comments are made, it be determined early on whether or not amendments would be proposed to the Nuclear Waste Policy Act. He thought if actions went that far the purpose would be defeated. He felt from a personal point of view if the problem were to be solved it should be done without going so far as to suggest there be amendments to the NWPA. Should there be amendments, he said they should come from USDOE and not from the state. Representative Rust inquired if there would be opposition if any amendments resulted from negotiation procedures, and Senator Benitz said he would not have a problem. He said should the Governor's letter be interpreted that to implement it would require amendments, he felt that would not be the right way to go. Representative Rust agreed with him.

Representative Nelson thought the Governor had seized the initiative at the right time and applauded him for his suggested proposal. He commented that there is a lot of reconsideration of the whole process, including Congressman Udall, the key architect of the Act, who has indicated to the nuclear industry that unless this process is straightened out, many of the items on their agendas could be in jeopardy. He said the Governor's initiative would challenge the USDOE officials to think through all the ramifications, to consult with all the players, and base a solution on a realistic assessment that the politicization of the process may defeat the process. This could result in negotiations out of court and out of Congress, which would be the best kind of settlement, he said. He considered this to be in the spirit of the C&C agreement process described in the NWPA. It would be a process to resolve disputes.

Mr. Eschels commented that he was hearing the body advise the Governor that in the submittal of his proposal it be

put in terms of devising a process or course of action to solve the problem, without focusing on the Act.

Dr. Filby considered that the submittal should not be tied to the Act, but the proposal should accept the philosophy of the Act, specifically that deep, geological disposal is the preferred method to dispose of radioactive waste. He thought if the whole process is re-opened, the country would be back to the very first position that the National Academy of Sciences started looking at thirty years ago.

Pat Tangora thought although the proposal does not specifically speak to it, it is quite focused on the site-selection process. She did not view it as proposal to open the whole process and begin again. Dr. Filby said he would like it to be a little more specific.

Phil Bereano disagreed. He said at the time the Act was being promoted vigorously by the utilities the belief was that the problem was urgent, but there have been changes in the technologies to such an extent that the problem is not nearly so great at the end of 1986. He wondered if there could be a comparative assessment made to buy time, to allow examining alternative technology. Dr. Filby said the technological debate as to what to do with radioactive waste has gone on for thirty years, and the presumption was that a permanent solution would eventually be found. He said although technology has changed, he thought that if the Governor's proposal even implies that the whole debate be re-opened, it will go nowhere. The NWPA was a compromise in many respects, but fundamentally the philosophy is sound, he believed. Mr. Bereano continued that he could not agree with that philosophy and thought that if the state is successful in its lawsuits it will be in a position at

some future date of wanting that rethinking to occur. He preferred being quiet on the subject and preserve flexibility for the future.

Representative Rust thought the proposal should not be tied down to a mediated agreement. USDOE may come up with another solution that has not even been considered, she said, and they should have that freedom to do so. She said the state should emphasize any consideration that would lead to a solution and not necessarily to changes.

Representative Miller thought the issue of the second repository should be pursued vigorously in order to bring the other players back into the picture. She warned that in taking this approach the implication is not given that the real motive is for Washington State to get rid of the problem. She said the goal is to find a scientific solution, not a political solution.

Representative Nelson said it was also important to point out that there are some who are not assured by the preliminary determination of suitability. He thought the Act itself contemplates that there might not be a deep, geological solution. It clearly states that standards have to be met, and if they are not, he presumed that would mean going back to the drawing board to find another solution. He said another unstated concern is that the whole process has been one of pushing to meet deadlines. He said he feared that there will be such a commitment of resources that at some place a decision will be made that still contains much uncertainty and scientific disagreement.

Mr. Eschels asked if he understood from the discussions that the message to the Governor should be to warn him not to aim to restart the process, but to keep an open mind should any negotiations point

to that possibility. Representative Rust and Dr. Filby agreed with this concept.

Representative Rust added that she believed the states which have the waste for disposal should be involved in the process. Mr. Reed said he considered this would be a detail to be dealt with when appropriate, once the decision is made to advise the Governor to make the proposal. He suggested taking action at this point, and once that is done, considering detailed advice to the Governor should the action be affirmative.

Mr. Bishop added that at the discussions held over the past two days, the members generally settled on three options:

1. Reject the invitation to discuss the C&C Agreement,
2. Agree to enter into discussions, or
3. Take an approach proposed by the Governor.

He thought it impossible to address all of the issues and concerns of each individual, and he suggested the body base its action on an endorsement of the Governor's proposed concept. Along with that endorsement, Mr. Bishop suggested sending in summary form the issues and concerns that the group has raised.

Mr. Reed moved that the Advisory Council endorse the Governor's concept, and recommend to the Board its adoption. The motion was seconded.

Mr. Bereano asked for some indication from Mr. Eschels as to what opportunities the Council might have to recommend some specifics as the Governor frames his proposal. Mr. Eschels thought the sense of the motion was consistent with that thought. Mr. Bishop said the intent was to summarize all of the concerns and suggestions and transmit that along with the endorsement. He said if any

individual member who did not attend the two-day meeting had further comments, they would be welcome.

The motion was called and passed unanimously with a vote of 7 to 0.

Representative Rust moved that the Board accept the recommendation of the Council. The motion was seconded and passed unanimously with vote of 5 to 0.

Following a short break, the group continued discussion on the best ways to transmit to the Governor the concerns and comments expressed by the members.

Mr. Reed proposed sending all of the memoranda prepared for the meeting today. He thought the material reflected with reasonable accuracy the deliberations of the past few days. He felt there also needed to be a process to deal with the result of the transmittal. He suggested a small sub-group composed of Board and Council members, carrying a responsibility to the Board and Council for interpreting these to the Governor's office when requested. It could also serve as a funnel for any additional comments that might be received in the interim, with the responsibility of reporting back to the Board and Council.

Discussion followed, and the opinion was expressed that Mr. Eschels, as a Board member and liaison to the Office of the Governor, did serve in this capacity. Ms. Shreve continued that should further detail be needed, a request could be made for members' participation.

Phyllis Clausen commented there was merit to Mr. Reed's suggestion, as the Council in its role is closer to the public and more aware of their concerns. Ms. Shreve said she had suggested earlier in their meetings that one or two members take the list of concerns to the Governor, but Mr. Reed felt there would

be a continuing need for such a sub-committee.

Mr. Rose expressed his agreement with Mr. Reed's suggestion. He said his concern was that the actions taken today would be the final input, and he thought it would be helpful to form such a group for follow through.

Mr. Bishop said he saw the need for continuing interface as the process evolved, and it might be appropriate to name a few members to be available.

Discussion followed on the materials to be transmitted, and the decision was made to refine the comments to reflect the various points of view. Mr. Bishop said if any member felt there should be additional comments, they should be discussed at this meeting before transmitting the concerns. Ms. Clausen thought the items listed under Litigation should be clarified.

Dr. Filby expressed his approval of having a joint group from the Board and Council available to discuss the various aspects with the Governor.

Mr. Reed moved that the Council recommend to the Board that the materials being prepared relating to the work session be forwarded to the Office of the Governor, and that the Chair be authorized to appoint a sub-group of the Board and Council, constituting no more than four members, which would relate to the Governor's Office with regard to these comments and future concerns. The motion was seconded.

Mr. Rose suggested adding the wording: "including any additional items which may come up today." Mr. Reed said he intended that, and would accept that amendment to the motion. The Second agreed.

Following brief discussion the motion was called and carried unanimously.

Dr. Filby moved that the Board endorse the Advisory Council's recommendation. The motion was seconded and passed unanimously.

#### Public Comment

None.

There being no further business, the morning meeting was adjourned.

#### 1:30

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

#### ECO Northwest Report on their Review of USDOE Decision-Aiding Methodology

Mr. Husseman remarked that ECO Northwest had completed their review of the final work done by the U.S. Department of Energy on the Multiattribute Utility Analysis (MUA) Ranking Methodology used by USDOE in their selection process. He said on two prior occasions ECO Northwest did valuable work for the Board and Council when they were under contract with the Washington Institute for Public Policy. They were brought in to review the ranking methodology used in the Environmental Assessments, which the Board used as part of the Board's comments on the draft EA. Because of those comments, as well as many others including the National Academy of Science's, USDOE developed and utilized the MUA method. The second time ECO Northwest was under contract with WIPP occurred when the MUA was first made public by the USDOE. Again, through the Institute, the Board contracted with ECO Northwest who reviewed the methodology at that time and provided a report to the Board and Council.

Mr. Husseman said this time the contract to review the final use of the MUA is with the Washington Department of Ecology.

Mr. Husseman introduced Robin Gregory, Economist and Psychologist with a Ph.D in both fields, teaching environmental economics at the University of Oregon and doing work with ECO Northwest. Also introduced was Mr. Ed Whitelaw of ECO Northwest. Mr. Gregory reviewed the final report in detail, and a copy of the report is attached.

In the discussion that followed, Charlie Roe asked: if the validity of media diversity is assumed a proper implementation of the law, is there any further need for a rationale to do as was done in the small volume of the report. Mr. Gregory replied there was, as the media diversity is what leads into the portfolio analysis consideration. That could be brought in, he said, along with the other concerns discussed in the MUA. He said bringing in diversity and doing a portfolio analysis which properly reflects of USDOE's own study could result in different conclusions in terms of the preferred trios of sites. Mr. Whitelaw added that if one were to anticipate portfolio analysis of three sites in each group reflecting different rock types, one would not have started with only five sites. Mr. Gregory said one of the problems is that USDOE gave no evidence of the thinking that was followed.

Discussion continued on the rock-diversity issue, and Mr. Gregory remarked, not being a geologist, he did not know if that universe of tuff, basalt, and salt actually satisfies the requirements for rock diversity. It may be there are other rock media which should be in that group, he said. It could be there should be more work looking at doing a portfolio analysis, bringing in the rock-diversity argument and looking at all

three sites together. Mr. Eschels suggested progress could be made without sensitizing many people who live at or near specific sites if the question were pursued as to how important is rock diversity, and if granite were examined, or expanding the number of tuff and basalt sites.

Nancy Kirner asked the difference between bedded salt and domed salt sites. Mr. Lasmanis explained domed salt is essentially a vertical pillar of salt that has pushed through overlying formations and has a vertical structure. Bedded salt is laid down in a dried-up seabed and is lying flat in the rock layers, and there is a major difference from a geological point of view. He said he was told earlier this year by a former USDOE hydrologist that USDOE was looking at that aspect and whether it would satisfy the diversity requirement.

Mr. Bereano objected to the use of the word "stakeholder" in the literature and presentation, as it does not truly indicate an interested party. He suggested that word not be used in the state documents.

Representative Nelson said one of the USDOE rebuttals to the criticism of the numerical ranking was that the three sites were very close. He thought that argument was being used to give emphasis to geological diversity. He asked where does subjectivity of analysis lead. Mr. Gregory said on the preclosure side the rankings are not that close. On the postclosure side it's a question of perspective. All five sites, using the base-case postclosure equivalent consequence impacts, score above the EPA Guidelines. At the same time, there is an order of magnitude difference in the base-case score between Hanford and the next four sites, Hanford being the worst. However, Hanford is still within the EPA Guidelines. That difference in postclosure sites can be translated into, for example, deaths, he said, and it does

result in a difference in the number of fatalities. Another point to make is that he did not believe that base-case impacts should be examined, but if there are optimistic or pessimistic scenarios deemed reasonable, those are also relevant.

Mr. Whitelaw added that by saying if they are close, after the analysis is all done, it destroys the integrity of the initial analysis. One cannot establish the criteria for closeness after the analysis, unless beforehand all parties had agreed that if it were in a certain margin of closeness, it would be a tie. But, he said, this was not done.

Mr. Gregory said that formally in a MUA the only things that should be looked at are those considerations that might be important in distinguishing the sites.

Dr. Filby asked if any attempt were made in the MUA, or any other analysis, at error analysis or uncertainty. He wondered if there were any way to come up with a standard deviation of the numbers. Mr. Gregory thought a very good job of that was done in the MUA in terms of the sensitivity analyses, but they do not go back and state which of the differences make a difference. Mr. Whitelaw said there are no analogs to standard deviations with this kind of an analysis, hence, the importance of sensitivity analysis. If plausible, alternative criteria were found yielding substantially different results, that is the analog to a standard deviation. Dr. Filby remarked that then sensitivity analysis would be analogous to error analysis. Mr. Gregory thought the reason there was not a closer correspondence was the explicit role that value judgements play. Mr. Whitelaw emphasized it was important to remember the source of the value judgments, which was the panel of four.

Mr. Lasmanis commented that perhaps the post-closure numbers were close because to some extent they relied on

EPA criteria in terms of releases, and the same standards apply to all sites equally. In fact, he said, performance would not be known until site characterization is completed.

In response to Mr. Eschels, Mr. Gregory said the final utility numbers are, in a sense, meaningless in terms of being abstract, except to be used in ranking, and are not relative to some threshold. Mr. Eschels said those scores that fall out at the end of the utility analysis, although not sensitive to changes in the absolute numbers, are sensitive to the value judgments and how the values are assigned. Since only four individuals were making the value judgments, as pointed out, others could question whether those values were appropriate.

There was further discussion of the value judgments, and Mr. Gregory said by the rules of a MUA utility analysis, the only input that can be had to those value trade-off's comes from the identified group of interested parties. There is no other additional information source that can go in. Mr. Eschels said then the argument becomes that of values. Mr. Whitelaw inserted that on that particular point one is left arguing values, but there were other omissions and errors addressed in the report. Mr. Gregory said a judgment, not of value, but of fact - also subjective - comes in terms of how the scales are constructed, which is also arguable. These are areas in which reasonable people might differ, and it should be followed through to see what those differences mean.

Mr. Eschels concluded that this would be useful but states and other interested parties are left with a values trade-off which does not reflect their values. He said the way to resolve that kind of values conflict is to have a conflict resolution agent. He added there is a big gap between the recommendation report and the methodology report, in that the

rock diversity issue was not treated in the systematic way that all other issues were. He questioned the usefulness of that method applied to the three choices, and there was a need to look at the process by which this conclusion was reached.

Mr. Husseman pointed out that on post-closure comparison, the risk of health effects over the next 100,000 years was basic. He said the radionuclides would invade the environment principally through groundwater. USDOE estimates Hanford has a 22,000-year groundwater travel time, with the Mississippi site having a 35 million-year travel time. In comparing the sites, he thought the length of the travel time is a significant factor, and he asked how USDOE dealt with that difference.

Mr. Gregory said he tried to trace that through, and it was one of the few areas where he believed the report is unclear as to what was actually done. He said it seemed this consideration was omitted, or neglected. However, in Appendix G of the MUA groundwater travel time is specifically mentioned as being looked at, but it is unclear how they examined this issue. This is definitely something worth pursuing, he said, and it might be possible to pick this up from some of the other background documents.

Max Power commented that the presentation put a great amount of weight on the four project managers as judges of the values. He thought the Department took the position that including outsiders at that stage would have been difficult, as it would have revealed a lot of technical information not ready for release. He asked if the interested parties could have met to assign those weights without having site-specific, technical information disclosed in the process.

Mr. Gregory said he saw no reason why they could not have done that. In fact, he said, a very normal use of MUA is simply getting different groups together, who are engaged in some kind of dispute, to clarify the differences in the value trade-off's those different groups make. He thought this might be a perfect case to conduct the analysis to that step - elicit the values information to see how others would trade off, for instance, changes in the aesthetics effects scale, socioeconomics scale, and some other worker or public death scales. This could be done without releasing anything relevant to national security, he said.

Mr. Power then inquired if it would be unprecedented for a small group of people to try to set those values, having been immersed in a large public comment period, as a funnel through which all the comments were translated into some set of values. He asked if there were a model for doing it that way. Mr. Gregory, said they may be a precedent, in terms of having been done before somewhere, but it is certainly unaccepted procedure as far as the MUA is concerned. He said typically what is done almost concurrently with, or sometimes even before looking at objectives, is to define the interested parties, knowing that the MUA would be giving the judgements a value. He saw absolutely no way anyone involved in a decision of this importance could genuinely refer to himself as some sort of funnel for society's values. He said even judges in a court of law need to look outside their own opinions toward precedents established in the law. Procedure followed here, he said, is clearly contrary to that followed in MUA analysis for very good reasons.

Nancy Kirner asked if the decision to select Deaf Smith County as the salt site was a well-documented decision, from what the MUA analysis shows, and does the ECO Northwest analysis arrive at the

same conclusion. Mr. Gregory said in response to the first part of her question, looking at the overall ranking of sites in terms of the salt sites, a site not included in the final recommendation looks to be the best of the salt sites. Richton Dome appears to be a better salt site than Deaf Smith, and the question remains why it was not the choice in the recommendation report. Secondly, he repeated his earlier comments that what is being done in these two reports is quite different. In the MUA the ranking is of single sites, and on the basis of the requirements, without rock diversity, Yucca Mountain is the best site. Once one moves to portfolio analysis, it is not clear how to select the top three sites as being the best, partly because of the rock-diversity argument. Also, he said, it is because once there is characterization, the value of the information expected to be obtained will be looked at. None of the attributes directly address what is expected to be learned from the characterization. Therefore, if that is important, as the recommendation report states, it is necessary to bring that in to be one of the determinants of the portfolio analysis. Professor Keeney, he said, did that, looking at different combinations three at a time, and he arrives at a different ranking, subsequent to all of this. There is no indication that the later work of his had any effect on the recommendation.

Phyllis Clausen inquired how long the EPA Standards referred to in the discussions had been in effect, and whether during that period they had changed appreciably. Mr. Gregory said he did not have the EPA documents with him, but he considered it interesting that in several places in the analysis reference is made either to the Siting Guidelines or to there EPA Guidelines. Both are products, he said, and have not existed forever. The Siting Guidelines are products of the same group that did the analysis, and the

EPA Standards should be periodically reviewed. Mr. Provost explained that the EPA Standards were under consideration at the time the Act was passed in 1982, and it took a couple of years to implement them. During that comment period there were many variations, and the Standards have been in place a little over a year. Also important to note, he said, is that General Counsel of USDOE indicates that to meet diversity only one of the Federal sites is needed.

Mr. Provost then asked if it were feasible to use interested parties to redo the part of the analysis that was done by the USDOE Program Managers. Mr. Gregory said it would be an extremely useful thing to do. Two or three different groups of people could be taken and simply asked to make the same kind of value judgments that the USDOE Project Managers were asked to make. Then, it would become an empirical discussion, he said. He thought it should be done.

Pat Tangora asked if removing Yucca Mountain and Hanford from the list of sites possibly affects the ranking of the salt sites. Mr. Gregory said it would, keeping in mind the word "possibly".

Ms. Tangora then commented that regardless of whether or not the MUA was done well, she thought its objective was not stated correctly up front, or the question it was designed to answer was not the right question, because at this point the final site is not selected. Mr. Gregory said he could not quite agree with this assessment, as the input from the MUA is needed. The single-site-at-a-time information is needed as one of the inputs to the decision. Once that is obtained, then the sites can be combined into three-way combinations.

Dr. Filby referred again to the closeness of the numbers for postclosure. He asked if the closeness were related to the fact that all of the numbers are very much

lower than the EPA Standards, so even though there may be orders of magnitude difference for those numbers, the fact that the EPA Standards are so high is what drives the closeness. Mr. Gregory replied that was absolutely correct. He said there is a Table in the report which computes for each of the five sites the expected releases and directly compares them.

Dr. Filby then inquired if, given the fact that the position of the state is that the whole selection process is flawed, should the site selection process be re-opened, would this methodology be used again. Mr. Gregory said in his opinion it would and he considered it the proper approach to use. Changes he would recommend are those he has mentioned throughout this discussion, such as more reasonable trade-off's between scales, do a better job of developing some of the constructed scales, look at injuries as well as fatalities, expand the range of pessimistic conditions in terms of postclosure, etc. He said he knew of no other evaluative technique which does such a nice and explicit job of combining factual judgments with the subjective judgments, judgments of value.

Sam Reed said from listening to the presentation and the discussion he was left with only a couple of conclusions from which to make a choice. One, there was either a very inadequate understanding of the MUA process and its utilization in reaching recommendations, or there was an intent to use the process to reach a predetermined conclusion. In either situation, he said, there is a bad result.

Representative Nelson inquired about the role the National Academy of Sciences played in reviewing the methodology. He wondered if they missed on the portfolio analysis and they missed on assigning a value to the rock diversity factor. If these were recognized procedures, he asked why the NAS did not catch these.

Mr. Gregory said back in 1984 when the first three approaches to evaluation were recommended by USDOE, essentially two were planned and the only one that came through having any value was what they called Expected Utility Analysis. USDOE then went outside to Professor Ralph Keeney and Lee Merkoffer. In the NAS review the only individual whose name he saw attached to that was another Professor at USC, Detlof von Winterfeldt, who is also a world expert. Von Winterfeldt, in writing his part of the NAS review, specifically started with "... given this set of preclosure and post-closure objectives, and working with a site-specific analysis, has this report done a good job?" The rock-diversity consideration, as well as the portfolio analysis, consideration would not enter into that. The mandate of the report was not to do a portfolio analysis, but to do a site-specific analysis without including the rock-diversity argument. From that as a starting point, it could be concluded it is a very well-done report, with the kinds of questions ECO Northwest introduced. As far as he understood it, Mr. Gregory said, those two considerations were considered to be outside the realm of NAS comment.

In looking at the recommendations report, Von Winterfeldt wrote a stinging review of that report.

Mr. Whitelaw said he was curious about Representative Nelson's reaction to ECO Northwest's statements about the socioeconomic impacts. He asked if they had stated clearly enough the tourism stigma dimension of the constructed scale for socioeconomic impacts. Representative Nelson replied he understood and agreed with them. Mr. Whitelaw said he asked that because a lot of his work has to do with regional economic development, and in this report it is stated as "tourism", or a stigma effect. He thought that might understate and not convey richly enough the impact upon a state or regional

economy. He said he is in the midst of setting up a course on the economics of the Pacific Northwest and one of the revolutions in regional economics that has occurred over the last five to ten years is readjusting the relative roles played by quality of life variables. He said surfacing in the regional economic literature is an appreciation of not simply tourists, but the impact of those same variables on the choices of residential sites by households. He thought in the Northwest that is a variable that is not represented anywhere nearly as fully as it should be, even with the term "tourism". He thought that may not have been incorporated fully, and the sensitivity of the Northwest economy is very great to that dimension. Representative Nelson said NAS was advised of this concern before they gave their stamp of approval.

Ms. Clausen said the effect was on many more aspects of the economy and speaking of tourism was only one example.

Narda Pierce commented that it was not only the opinion of the Counsel of USDOE, but also of the Board's Counsel, that geologic diversity only requires two different rock types. She believed that was a value that Congress superimposed on the USDOE value making. They determined that there was possibly a failure of one rock type if USDOE concentrated on only one. There was no analysis done of whether a third rock type was needed, and Congress allowed USDOE that discretion by saying "...to the extent practicable..there will be geologic diversity". She said there was no reasoning or decision-making, just a statement that including Hanford gives maximum rock types. Mr. Gregory said as a part of portfolio analysis that question should be asked, and leads to the question of whether to characterize perhaps not three at a time, and maybe

not two at a time, but maybe one at a time - a sequential analysis, rather than a simultaneous analysis of two or three sites.

Nancy Kirner said, referring to the stigma effect, she thought the word "stigma" implied fear; fear implies insufficient education. She also thought stigma implies something that does not exist and brings to mind self-fulfilling prophecy. She believed talking about it can bring it about; that probably could be unfounded just because of the basis of fear. She hoped in dealing with the issue a self-fulfilling prophecy would not be created.

Ms. Clausen commented the use of the word by others could not be controlled, and there has already been reference to efforts by some asking the Department of Agriculture to supply some individual buyers certification that the products were radiation free. Ms. Kirner said the Department of Social and Health Services is assisting the Department of Agriculture in coming up with such certification.

#### Other Business

Two Resolutions were distributed to the body, and Mr. Bishop asked for action by the Nuclear Waste Board. Both Senator Guess and Senator Goltz will be leaving the Board at the end of the year, and Resolutions were drafted to honor their service.

Ray Lasmanis moved that Senator Sam Guess and Senator Barney Goltz be recognized for their dedicated service to the Nuclear Waste Board and the state of Washington. The motion was seconded.

Mr. Lasmanis stated he had certainly enjoyed Senator Guess' good sense of humor and entertaining discussions. Mr. Bishop added both Senators had been

very valuable members of the team and will be sorely missed.

The motion was called and passed unanimously. (See Resolutions 86-7 and Resolution 86-8 attached.)

#### Public Comment

Marie Harris of Bacon and Hunt asked if it were feasible to consider a panel of NAS people to perform a value judgment rather than recruiting people from the states, environmental groups, etc. She asked if so, could the state rely upon them.

Mr. Gregory said he personally believed multiple groups were needed in order to do it well. A set of groups should be developed that would have different opinions, perhaps from industry, environmental associations, etc. He said much more information could be gained from multiple groups.

Ms. Harris asked if it were feasible to think these groups could ever come to a consensus. Mr. Gregory thought definitely yes, they could. He said he could cite other examples where other problems of either state or national significance have used groups of a small number of interested parties, less than five, and have received values most people would agree are representative.

Ray Lasmanis inquired about the composition of groups. He wondered about the age spread, and if that were considered. Mr. Gregory said it should be considered.

#### Socioeconomic Committee Report

Mr. Bishop asked Curt Eschels to update the Board on the status of the Request for Proposal for contractor selection. He reported the top four of the seven responding firms were interviewed by the Committee on December 15 and 16. No

decision was made to choose a final candidate. He asked that the Board grant authority for the Committee to go into negotiations with the proposers and return to the January meeting with a potential contract for its review.

Representative Nelson moved that the Socioeconomic Committee be authorized to enter into negotiations to finalize a contract which will be brought before the Board with recommendation at the meeting on January 16. The motion was seconded and carried unanimously.

Mr. Eschels said the remainder of the Committee report concerned the relationship between the local governments and the Board. Following many discussions, some proposed contracts for involving local governments, either singly or in concert, have been prepared. These will support their efforts in two categories: (1) Payments Equivalent to Taxes (PETT), and (2) Involvement in the impact analysis and the report the contractor will be developing. Conversations

are being held with the Cities' Association, the Counties' Association, and some of the Councils of Government that represent several governments in the Clark County area, the Tri-Cities Area, Spokane, and several others.

#### Other Comment

Sam Reed mentioned the film shown to the body the other evening at Alderbrook and its possible use for public involvement purposes. He said there seemed to be a lot of concern and he felt there needed to be some discussion held before any decision is made. Mr. Bishop said this would probably be a topic for discussion at one of the Thursday night Council Informal meetings, and would be considered by the Board.

There being no further business, the meeting was adjourned.

**NUCLEAR WASTE BOARD**

**RESOLUTION 86-7**

**December 19, 1986**

**WHEREAS**, the Nuclear Waste Board was expanded to include ex officio legislative members in 1984; and

**WHEREAS**, service on the Nuclear Waste Board and its committees requires a great commitment of time, energy and interest; and

**WHEREAS**, legislative members of the Board have important responsibilities to keep the House and Senate informed of the state's actions regarding nuclear waste; and

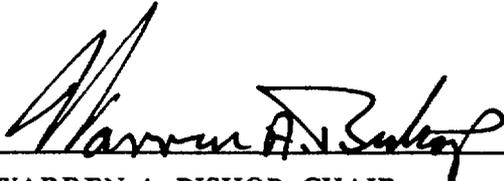
**WHEREAS**, the Board has dealt with many critical decisions during the past three years; and

**WHEREAS**, Senator Sam C. Guess has served actively and vigorously as an ex officio member of the Board for three years.

**NOW, THEREFORE, BE IT RESOLVED** that the Washington State Nuclear Waste Board expresses its deep appreciation of Senator Sam C. Guess for his knowledgeable, dedicated, and effective participation in the Board's activities;

**BE IT FURTHER RESOLVED** that the Board commends Senator Guess' service to the people of the state of Washington during a long and distinguished career in public service; and

**BE IT STILL FURTHER RESOLVED** that the Board wishes Senator Guess a rewarding and restful retirement, while reserving the right to seek, on occasion, his wise counsel.

  
WARREN A. BISHOP, CHAIR

**NUCLEAR WASTE BOARD**

**RESOLUTION 86-8**

**December 19, 1986**

**WHEREAS**, the Nuclear Waste Board was expanded to include ex officio legislative members in 1984; and

**WHEREAS**, service on the Nuclear Waste Board and its committees requires a great commitment of time, energy and interest; and

**WHEREAS**, legislative members of the Board have important responsibilities to keep the House and Senate informed of the state's actions regarding nuclear waste; and

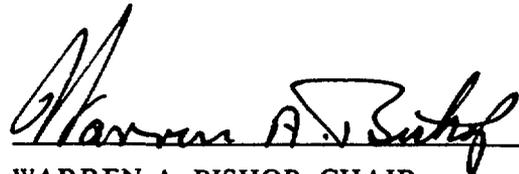
**WHEREAS**, the Board has dealt with many critical decisions during the past two years; and

**WHEREAS**, Senator H.A. "Barney" Goltz has served actively and vigorously as an ex officio member of the Board for two years.

**NOW, THEREFORE, BE IT RESOLVED** that the Washington State Nuclear Waste Board expresses its deep appreciation of Senator H.A. "Barney" Goltz for his knowledgeable, dedicated, and effective participation in the Board's activities;

**BE IT FURTHER RESOLVED** that the Board commends Senator Goltz' service to the people of the state of Washington during a long and distinguished career in public service; and

**BE IT STILL FURTHER RESOLVED** that the Board wishes Senator Goltz a rewarding and restful retirement, while reserving the right to seek, on occasion, his wise counsel.

  
WARREN A. BISHOP, CHAIR