



POLICY ISSUE **(Information)**

October 13, 1987

SECY-87-256

For: The Commissioners

From: Victor Stello, Jr.
Executive Director for Operations

Subject: STATE/TRIBAL CONCERNS RAISED AT COMMISSION MEETING AND
SECOND ANNUAL MEETING WITH STATES/TRIBES IN HLW PROGRAM

Purpose: To inform the Commissioners of NRC staff efforts to address concerns raised by state and Indian tribal representatives in the high-level waste program.

Discussion: The Division of High-Level Waste Management, NMSS, staff has developed a paper addressing the high-level waste-related concerns raised by state and Indian tribal representatives at both the June 16, 1987 Commission meeting and the NMSS staff's June 30, 1987 second annual meeting with state and tribal representatives.

Enclosed is a copy of this list of concerns, with responses where appropriate. The list has been categorized into four groups:

- I. Concerns planned to be resolved by NRC efforts currently underway. The NRC efforts are specifically identified.
- II. Concerns not covered by NRC regulatory authority, or requiring further action by another agency before NRC can proceed.
- III. Concerns which NRC staff considers were addressed at the June 30th meeting and require no further NRC response (summarized from transcript).
- IV. Concerns NRC has addressed in this document or other specifically identified documents.

NMSS has distributed this document to its HLW state and Indian tribal contacts for comment, as well to other parties on their HLW mailing list, including internal NRC staff, DOE, and other federal agencies, for information.

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PDR WASTE PDR
WM-10

NMSS will periodically update the status of concerns included in Category I of this document.

A handwritten signature in black ink, appearing to read "Victor Stello, Jr.", written over the printed name.

Victor Stello, Jr.
Executive Director for Operations

Enclosure:
Categorization of
State/Tribal Concerns



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 23 1987

TO: State and Indian Tribal Representatives
in the High-Level Waste Program

FROM: Robert E. Browning, Director
Division of High-Level Waste Management
Office of Nuclear Material Safety and Safeguards

SUBJECT: STATE/TRIBAL CONCERNS RAISED AT JUNE 16 COMMISSION MEETING AND
JUNE 30 SECOND ANNUAL MEETING WITH STATE AND TRIBAL REPRESENTATIVES
IN THE HIGH-LEVEL WASTE PROGRAM

Enclosed is the NRC staff's summary of concerns raised by state and Indian tribal representatives at NRC's June 16, 1987 Commission meeting and the June 30, 1987 Second Annual Meeting with States and Tribes in the High-Level Waste Program. The concerns have been categorized into four groups as follows:

- I. Concerns planned to be resolved by NRC efforts currently underway. The NRC efforts are specifically identified.
- II. Concerns not covered by NRC regulatory authority, or requiring further action by another agency before NRC can proceed.
- III. Concerns which NRC staff considers were addressed at the June 30th meeting and require no further NRC response (summarized from transcript).
- IV. Concerns NRC has addressed in this document or other specifically identified documents.

We plan to periodically update the status of concerns included in Category I above. We would appreciate any comments you may have on the accuracy, completeness, and categorization of your concerns.

Sections of this list of concerns may need to be amended due to DOE's recent announcement of its plans regarding issuance of consultation drafts of the SCP's. These amendments will be incorporated into the next update of the list.

RE Browning
Robert E. Browning, Director
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

87/09/23

CATEGORIZATION OF STATE/TRIBAL CONCERNS
RAISED AT NRC'S JUNE 16, 1987 COMMISSION MEETING AND
JUNE 30, 1987 SECOND ANNUAL MEETING WITH STATES/TRIBES
IN THE HIGH-LEVEL WASTE PROGRAM

- I. Concerns planned to be resolved by NRC efforts currently underway. The NRC efforts are specifically identified.
- II. Concerns not covered by NRC regulatory authority, or requiring further action by another agency before NRC can proceed.
- III. Concerns which NRC staff considers were addressed at the June 30th meeting and require no further NRC response (summarized from transcript).
- IV. Concerns NRC has addressed in this document or other specifically identified documents.

I. Concerns planned to be resolved by NRC efforts currently underway.
The NRC efforts are specifically identified.

- A. Drilling of exploratory shafts (ES) at Hanford will disturb the groundwater system, which could lead to loss of hydrology data; ES drilling should not start until pre-ES hydrologic programs have been completed and all parties have consulted with DOE. (WA/Provost-6/16) Concerned about ES issue; is DOE legally able to drill shaft through sediment without a hydrologic baseline? The Tribe is depending on NRC to assist them in answering these kinds of questions. (Yakima/Jim-6/30)

Response: As discussed at the 6/30 meeting, NRC plans to continue consultation with DOE on its hydrologic program. The DOE's Mission Plan Amendment, 6/87, mentions recent changes in the hydrologic testing program proposed for the Hanford site. On p. 8, the Plan states that DOE has decided that the hydrologic tests to be conducted before the start of exploratory-shaft construction should be far more comprehensive than those planned in developing the schedule reported in the draft amendment. DOE has outlined its plans for evaluating the advantages and disadvantages of drilling shafts to a limited depth before the end of hydrologic testing. DOE has also committed to consult with NRC and affected states and tribes before proceeding with this process.

- B. Feel strongly that NRC should not separate review of ES issues from the total Site Characterization Plan (SCP) review. Worried that DOE will lose critical data if it sinks a shaft and proceeds with remainder of site characterization program. Concerned that DOE will begin sinking shaft, lose the opportunity to collect data or realize something is flawed, and will not be willing to back off. (TX/Zimmerman-6/30)
 Does NRC have a technical rationale for considering shaft sinking separately and first? (Yakima/Tousley-6/30)
 Rob MacDougall wishes to correct the 6/30 meeting record in which he mentioned that NRC's plans for reviewing exploratory shaft related issues first before total review of SCP is outlined in 10 CFR Part 60.

Response: Provision for a separate review and comment period on ES related issues is not specifically provided in 10 CFR Part 60. The DOE Project Decision Schedule specifies a 90-day timeframe for NRC review of exploratory shaft related issues in the SCP and a 6-month timeframe for publication of the NRC Site Characterization Analysis (SCA).

The NRC staff's agreement with DOE's request for a 90-day ES review following issuance of the SCP was contingent upon timely and effective consultation so that the NRC staff could review DOE information relevant to previously identified ES issues and could work with DOE on resolution of the issues prior to SCP issuance. Since the necessary consultations that would have allowed for an expedited 90-day ES review have not occurred, NRC plans to provide comments on ES-related issues at the same time it issues the Site Characterization Analysis.

NRC's final plans for review of the SCP's will be outlined in the Standard Review Plan for SCP's.

- C. NRC should work closely with the Tribe on review of SCP.
(Umatilla/Burke-6/16)

Response: 10 CFR Part 60, Section 60.18(b), requires NRC to "provide an opportunity ... for the State in which such area is located and for affected Indian Tribes to present their views on the site characterization plan and their suggestions with respect to comments..." NRC will specifically address state and tribal participation during review of an SCP in the Standard Review Plan for SCP's.

- D. The State of Virginia, as a potential second repository state, expressed interest in participating in, or at least observing, NRC's review of the SCP's. (VA/McNeer-6/30)

Response: As mentioned above, NRC will address in detail state and tribal participation during SCP review in the Standard Review Plan for SCP's.

- E. There is a need for an integrated SCP; NRC should not begin review of an SCP unless it addresses the technical, economic, social, and environmental aspects of site characterization. (NV/Murphy-6/16)

Response: Section 113 of the NWPA and Section 60.17 of 10 CFR Part 60 address the scope of an SCP. NRC will address its plans for SCP review in the Standard Review Plan for SCP's. NRC has no basis for refusing to begin review of an SCP if DOE fails to include economic, social, or environmental information in the SCP; this information would relate to the impacts of site characterization activities and are not subject to NRC's licensing jurisdiction. Since Section 113(a) of the NWPA requires DOE to conduct, in consultation with the host state and affected Indian tribes, site characterization activities in a manner that minimizes any significant adverse environmental impacts, these aspects of site characterization would be under the purview of state and tribal review.

- F. Confused about what NRC means by "resolution of issues".
(TX/Frushman-6/16)

Response: There are two basic approaches to issue resolution: formal and informal. The formal approach involves rulemaking or licensing adjudication. Informal issue resolution would occur through ongoing technical interactions to produce a consensus among interested parties that DOE's proposed actions or available data had made the issue no longer a licensing concern. NRC is developing a systematic process for identifying, examining, and closing issues to the extent practicable prior to the receipt of a repository licensing application. This process will include mechanisms for identification, prioritization, and resolution of issues; focusing technical meetings and technical positions on issue

resolution; assuring active and effective participation by affected states and tribes; identifying issues that are ripe for early closure; better definition of issues through the issuance of staff technical positions; and formal closure through rulemaking or possible early licensing board adjudication of selected issues. This process, which includes both approaches, is intended to reduce the number of issues and better define them for adjudication during the licensing hearing.

- G. Regarding a statement by Mr. Hugh Thompson, NRC, Director, Office of Nuclear Material Safety and Safeguards, that "at least one of the three sites is certainly licenseable," what is the basis for this statement? (TX/Frishman-6/16)

Response: This concern will be addressed in separate correspondence, and will be included in a future update of this list of concerns.

- H. When will the Licensing Support System be operational and what will it cost? (WA/Provost-6/30)

Response: The start-up of the LSS will depend on NRC's negotiated rulemaking; NRC expects the final rule to be published by October 1988. NRC does not have a figure on the cost to implement this system, but the negotiating committee will be looking at the technical and economic aspects of the system. It should be noted that DOE has the ultimate responsibility for development and implementation of the LSS.

- I. NRC should accelerate its own regulatory rulemaking process; cites PRM 60-2, filed in 1985, to which NRC has not yet responded. (NV/Murphy-6/16) (PRM 60-2, filed by the States of Nevada and Minnesota on 1/21/85, is a Petition for Rulemaking requesting the Commission to adopt a regulation governing the implementation of certain environmental standards which have been proposed by EPA. PRM 60-2A, filed 9/30/85, amended the original petition and requested the Commission to amend its repository licensing regulations to incorporate the equivalent substance of the assurance requirements as issued in the Final EPA Standards (40 CFR Part 191). The petition also suggests certain criteria for use by the Commission when deciding whether or not it is "practicable" for the NRC to adopt DOE's EIS.)

Response: As a result of lengthy rulemaking processes in the past, NRC issued, in February 1985, a directive to the staff requiring that rulemaking efforts be completed within a two-year timeframe. This directive includes requirements for detailed milestone schedules and routine high level management progress reviews. NRC publishes a quarterly report (NUREG-0936) regarding the status of rulemakings and petitions which is made available to the public; in addition, a regulatory agenda of the status of proposed and final rules is published in April and October in the Federal Register.

As noted in the current regulatory agenda, NRC intends to address Nevada's petitions for rulemaking through two pending rulemaking processes: conformance of 10 CFR Part 60 to the EPA HLW Standards and amendment of 10 CFR Part 51 regarding NRC's adoption of DOE's EIS. The recent Court decision to remand EPA's HLW Standards will affect NRC's schedule for the rulemaking on conformance of Part 60 to the EPA HLW Standards.

- J. Regarding NRC's separate NEPA responsibility and the adoption of DOE's EIS, NRC should begin thinking about its role in the EIS process. (TX/Frushman-6/16)

Response: NRC will address this in its 10 CFR Part 51 rulemaking proceeding.

- K. Will NRC deal with the question of adequacy of the number of viable alternatives in Part 51? (WA/Power 6/30)

Response: Section 114(f) of the NWA requires DOE to consider as alternatives three sites for which site characterization has been completed and DOE has made a preliminary determination that these sites are suitable for repository development consistent with the siting guidelines. The implications of this requirement for NRC's NEPA review will be addressed in the 10 CFR Part 51 rulemaking process.

- L. How will NRC proceed if litigation challenging an EIS is prolonged for two to five years? (NV/Davenport-6/30)

Response: NRC will address this in its 10 CFR Part 51 rulemaking process.

- M. A new issue could require some amendment to an EIS. How would the EIS be amended? (Nez Perce/Gover-6/30)

Response: Either DOE or NRC could choose to supplement the EIS. The Part 51 rulemaking proceeding will need to address the issue of criteria by which DOE or NRC would supplement the EIS.

- N. Regarding the ANPRM on the Definition of HLW, the Yakima Indian Nation (YIN) believes that the dual concentration test proposed by Commission, requiring that reprocessing wastes be both "highly radioactive" and "requiring permanent isolation" to be considered HLW, would unjustifiably exclude majority if not all of the old Hanford tank wastes. The YIN will support Commission adoption of concentration approach provided that the definitional test for HLW be considered satisfied if a mixture of nuclides satisfies either of the two criteria stated by Commission, rather than requiring that both be satisfied. (Yakima-6/16 from submitted written statement)

Response: This comment will be addressed in NRC's 10 CFR Part 60 rulemaking process on the Definition of HLW.

- O. Will NRC consider transuranic waste as HLW? (ME/Kany-6/30)

Response: This will be addressed in NRC's 10 CFR Part 60 rulemaking process on the Definition of HLW.

- P. Although NRC is under budget constraints/cuts, can NRC's technical staff increase technical interactions with states/tribes to assure the technical acceptability of state/tribal documents? (Yakima/Hovis-6/30)

Response: Under certain circumstances, NRC's high-level waste technical staff may be under stringent resource constraints and may not be able to participate in as much detailed technical interactions with interested parties as the staff might otherwise desire. NRC is interested in maintaining effective communications between NRC and state/tribal technical counterparts, however, and the staff has forwarded a listing of its HLW technical staff contacts to states and tribes for routine interaction.

- Q. The Tribe does not receive as much information as it would like from NRC. Understands NRC provides states with transportation information regarding when waste will be transported through the state. The tribes would like this same information. This Tribe has much ceded territory in Wisconsin, Michigan, and Minnesota. (Bad River Band of Lake Superior Chippewa/Jackson-6/30)

Response: NRC's regulation 10 CFR Part 71, Packaging and Transportation of Radioactive Material, Section 71.97, requires that prior to the transport of certain shipments of licensed material through a state, the licensee shall provide advance notification to the governor of that state, or the governor's designee.

In addition, certain information contained in the notification of spent fuel shipments are subject to requirements for the protection of safeguards information, as outlined in 10 CFR Part 73, Physical Protection of Plants and Materials, Section 73.21.

Affected NRC staff are discussing the subject of notification to Indian tribes of radioactive material shipments.

- II. Concerns not covered by NRC regulatory authority, or requiring further action by another agency before NRC can proceed.
- A. DOE has not yet provided critical data regarding historic contamination of deep aquifers by Iodine-129 at Hanford. (WA/Provost-6/16)
 - B. State believes groundwater travel time at Hanford would be less than that required by NRC regulations. (WA/Provost-6/16)
 - C. Fault pattern has been identified within controlled study zone; DOE should include provisions for early drilling to determine extent of suspected fault pattern. (WA/Provost-6/16)
 - D. Evidence of natural resources; could attract future prospectors to site. After Final EA was published, DOE determined that Hanford site would be a gassy mine. (WA/Provost-6/16)
 - E. High rock stresses could cause serious retrievability problems at Hanford. (WA/Provost-6/16)
 - F. Concerned with miner safety; loss of ventilation at Hanford. (WA/Provost-6/16)
 - G. Implication of potential earthquake swarms for repository performance at Hanford. (WA/Provost-6/16)
 - H. DOE's program and data management problems; inconsistency at sites. (WA/Provost-6/16)
 - I. Lack of site-specific environmental baseline data. (NV/Murphy-6/16)
 - J. DOE shortcuts the process; lack of conservatism in technical program. (NV/Murphy-6/16)
 - K. DOE unwillingness to give some credence to concerns/problems of states and tribes. (NV/Murphy-6/16)
 - L. Process cannot succeed until DOE rigidly conforms with obligations in the NWPA. (NV/Murphy-6/16)
 - M. DOE should integrate socioeconomic and environmental plans in the SCP, gaining an environmental baseline also. (TX/Frushman-6/16)
 - N. Storage problems can be solved by means other than an MRS. (TN/Smith-6/16).
 - O. Communication problems with DOE; four letters from Governor to DOE and no replies. (TN/Smith-6/16)

- P. There is public skepticism of program, due to DOE optimism. (Yakima/Jim-6/16)
- Q. DOE should more closely adhere to NWPA; the program has been flawed from time of DOE guidelines. (Yakima/Jim-6/16)
- R. The 90-day timeframe is insufficient for review of SCP. (Yakima/Jim-6/16)
- S. Why will NRC be allowed six months to review SCP, and other parties only three months? (Yakima/Aronson-6/30)
- T. DOE does not use Tribal comments in an effective manner. (Yakima/Jim-6/16)
- U. Concerned about Ben Rusche's remark at the 6/11/87 Commission meeting that a consensus had been reached among all parties, including states/tribes, at a recent BWIP hydrology meeting that DOE's planned tests were appropriate. The Yakima Indian Nation (YIN) agrees that the meeting was productive, but does not believe a technical consensus on adequacy of test plans was reached. The YIN believes these issues need to be resolved prior to commencement of testing. (Yakima/Jim-6/16)
- V. Believes problems began with NRC concurrence on DOE guidelines. (Yakima/Hovis-6/30)
- W. Needs to be recorded that government reorganizations are disruptive to the program. (Yakima/Hovis-6/30)
- X. DOE is overly optimistic; DOE lack of conservatism (Umatilla/Burke-6/16)
- Y. The Umatilla and the Nez Perce are investigating the presence of commercial quantities of oil & gas resources, which could disqualify site. (Umatilla/Burke-6/16)
- Z. NWPA has not been properly implemented by DOE. (Nez Perce/White-6/16)
- AA. DOE lack of conservatism; DOE indicates all three sites are acceptable and licenseable. (Nez Perce/White-6/16)
- BB. DOE delays in processing grant applications. (Nez Perce/White-6/16)

III. Concerns which NRC staff considers were addressed at the June 30th meeting and require no further NRC response (summarized from transcript).

- A. Regarding NRC's requirement for monitoring for about a decade after repository closure, why isn't a monitoring system required for more than 10 years? (WA/Patt-6/30)

Response by Dan Fehringer: It is a judgment call and depends on the repository process. We realize that more data will become available after longer periods of time, but it is NRC's judgment that within a decade or so after closure, one can obtain enough information to get all the good out of monitoring that is likely to be available. However, the monitoring period is not fixed in NRC's amendment; decisions will be based on the specifics of the site and of the type of monitoring that needs to be done at that time.

- B. Is NRC participating in DOE's hydrologic task group which will be addressing early drilling? DOE is in the process of scheduling meetings and looking for participation by states/tribes; has DOE approached NRC to participate? (WA/Provost-6/30)

Response by Robert Browning: NRC does not have the resources to attend and participate in all of DOE's meetings during the early stages of their thought process. After DOE conducts its independent evaluations, they have committed to consult with the NRC before proceeding. At that time, NRC will independently review DOE's proposed plans.

- C. Believed parties had an understanding at the recent hydrology meeting, but after listening to recent NRC Congressional testimony, now believes the understanding is lost and NRC has provided the impression that there are no technical problems with DOE's hydrologic program at the Hanford site. (WA/Provost-6/30)

Response by Robert Browning: NRC has identified groundwater as a concern. NRC expects to have continuing interaction with DOE, and all other parties, on the hydrology test program and other technical data gathering programs at Hanford.

- D. On June 5th, Oregon received a notice indicating three meetings were to be held in June; late meeting notification is not helpful. (OR/Blazek-6/30)

Response by Rob MacDougall and John Linehan: We provide at least ten working days' notice prior to NRC/DOE meetings and have an understanding with DOE that we will not attend a meeting unless there is a ten working day notification to states/tribes. DOE and NRC had, several months ago, listed meetings for June but could never come to an agreement on specific dates. We will hopefully provide four weeks notice and a minimum of ten working days notice for meetings in the future.

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- E. Will there be any attempt by NRC to hold more BWIP meetings in the Richland, Washington, area? (OR/Blazek-6/30)

Response by John Linehan - All BWIP meetings have been in Richland, although there have not been many meetings. We have travel resource constraints and will work with states/tribes in the future on locations; NRC will strive to hold the most important meetings in Richland.

- F. Is the DOE license application to NRC complete without an EIS? (NV/Davenport-6/30)

Response by Dan Fehringer: DOE must submit an application with an EIS to have a complete package; NRC then reviews the application and EIS to make a judgment on the adequacy of the package.

- G. If NRC supplements DOE's EIS, will there be an opportunity for states/tribes to challenge the supplement? (TX/Zimmerman-6/30)

Response by Dan Fehringer: We would use the procedure of issuing the draft EIS for comment and then issuing a final product. In accordance with the NWPA, the public would have a 180-day period for filing a court suit.

- H. To what extent would NRC regard judicial constraint from a prior ruling on the adequacy of DOE's EIS as limiting NRC ability to review substantive issues that were discussed in the EIS? (NV/Davenport-6/30)

Response by Dan Fehringer: To the extent that the court ruled on a specific substantive issue, this would bind NRC as a matter of law.

- I. What is the timing for NRC adoption of an EIS as its own or as the operative EIS? (Nez Perce/Gover-6/30)

Response by Dan Fehringer: NRC adoption of an EIS will be simultaneous with the decision to issue a license or reject an application, which could be as much as three years.

- J. If no changes are made to the NWPA, would NRC agree that DOE must characterize all three sites in order to meet the NEPA requirements for alternatives? (Nez Perce/Gover-6/30)

Response by Jim Wolf: We will need to await the outcome of litigation; if the courts rule that DOE must characterize three sites, the issue about whether or not one site would be sufficient would not arise.

- K. Does the requirement for an EIS make it a certainty that at least two sites would have to be characterized? (ME/Kany-6/30)

Response by Robert Browning: This will depend on what legislative changes are made.

- L. When NRC mentions "first round states," does that include only the three candidate site states? (UT/Kohler-6/30)

Response by Rob MacDougall: The term would include all states/tribes affected by the DOE nomination of sites for characterization, including Utah.

- M. How can NRC reconcile that we indicated a need for an MRS at a recent Senate Subcommittee hearing with Mr. Bernero's statement on 6/30 that NRC's role is as "an arm's length regulator." (TN/Smith-6/30)

Response by Robert Bernero on 6/30: NRC does not believe there is a need for an MRS based on health & safety considerations since NRC has licensed long-term storage at reactors. However, there are programmatic efficiencies related to having large volumes of waste at a few locations rather than at all reactor sites.

- N. When does the six-month review of the SCP begin? When all DOE documents have been produced? (Yakima/Aronson-6/30)

Response by John Linehan - NRC plans to do a quick acceptance review of the SCP to assure the package is complete. When NRC has formally "accepted" the package, the review period will commence.

- O. Does NRC have reasonable assurance that DOE will accept the results of the negotiated rulemaking process since DOE is proceeding with development of an LSS now? (TX/Stevens-6/30)

Response by Chip Cameron: DOE has committed to conform the LSS to the NRC negotiated rulemaking. NRC believes DOE will coordinate its LSS efforts with the negotiated rulemaking.

- P. If Congress imposes a moratorium on the HLW program, how will the negotiated rulemaking process be affected? All affected parties may not be represented on the negotiating committee. (Umatilla/Hester-6/30)

Response by Chip Cameron: We believe there is sufficient representation of interests participating on the committee. Regardless of a moratorium, NRC believes that it is important to continue with the development of the LSS, which will be the information base for repository licensing, whenever that will occur. However, if a moratorium is imposed, NRC will further evaluate this issue.

- Q. Is NRC involved in Manitoba, Canada, research program as far as lengthening the shaft? (ME/Kany-6/30)

Response by Robert Browning: No, the NRC's NMSS staff has not been involved in this, although NRC's research staff is following some of the Canadian research.

- R. Is NRC involved in WIPP and receiving information? (ME/Kany-6/30)

Response by Robert Browning: NRC does have access to reports, but there is not the degree of early-on NRC involvement in terms of test planning and the thought process for WIPP as there is for the civilian repository program.

- S. Based on NRC's recent audit at LASL, what are the ramifications of any data that might have been generated previously by Los Alamos? (MD/Eisenberg-6/30)

Response by Jim Kennedy: NRC is beginning to address the issue of existing data by publishing staff guidance on how to qualify data. Basically, DOE will need to go back and relook at all data if they want to use the data during licensing. The data must go through a rigorous review process.

- T. The 6/30 meeting site is not conducive to good participation and is too crowded. Tribe must sit at the edge of the room and cannot hear questions. Rapport with NRC is gone now. Agenda development should be done in consultation with states/tribes. Haven't met his expectations that there would be better interaction at the meeting. A one-day meeting is too short. A technical exchange meeting is much better. Meetings in Silver Spring are not good either. (Nez Perce/Halfmoon-6/30)

Response by Rob MacDougall: A draft agenda was distributed six weeks prior to the meeting for early comment, although no comments were received. NRC staff was advised by several parties that shortening the meeting from a day and a half to one day would be more convenient, due to the holiday weekend.

RECORD NOTE: Many more persons attended the 6/30 meeting than had notified NRC. NRC will, in the future, reserve meeting space to accommodate larger groups. NRC plans to continue arranging small technical exchange meetings, as well as periodic programmatic meetings.

IV. Concerns NRC has addressed in this document or other specifically identified documents.

- A. NRC should not support characterization at recommended sites when there are potentially disqualifying conditions at all of them. (Yakima/Jim-6/16)

What is the staff's position about the likely suitability of the recommended sites? (Yakima/Tousley-6/30)

Response: The Commission's position with regard to these concerns has been addressed in responses to recent Congressional inquiries. For example, in a 4/13/87 letter to Senator Bennett Johnston, Chairman of the Senate Committee on Energy and Natural Resources, NRC stated the following:

"While numerous concerns have been identified by NRC staff relative to each site, these concerns are of the nature anticipated at any site for which the existing data base is limited. While these concerns should not disqualify the sites from further testing to determine their suitability for the repository, they are significant with respect to the licenseability of each site. The purpose of site characterization is to develop data to evaluate the validity and significance of such concerns relative to site suitability. Hence, these concerns need to be addressed as the DOE draws up Site Characterization Plans (SCP's) for each site."

- B. On-site representatives (NRC and Tribal) are not given full access to DOE records, meetings, personnel, or facilities. (Umatilla/Burke-6/16)

Response: In a June 16, 1987 letter to Congressman Philip Sharp, Chairman of the Subcommittee on Energy and Power, Committee on Energy and Commerce, regarding DOE/NRC interactions, NRC identified two areas where interactions should be enhanced. These are the need for more formal site-specific technical meetings at all three projects and improved access for NRC's On-Site Representative at the Hanford site. Nevertheless, NRC staff has been able to keep generally current with all HLW site activities and has been able to adequately perform its review of DOE programmatic documents issued to date in a timely manner. Both NRC and DOE management have committed to improving the extent and effectiveness of technical interactions, as documented in DOE's commitment in the January 1987 draft Mission Plan Amendment to having substantially more interaction with the NRC.

- C. Concerns with National Academy of Science (NAS) involvement--with NAS' legal and regulatory expertise, it could render a judgment on the regulatory adequacy of DOE's selection of a site. This could coopt the Commission from rendering a truly independent judgment on the merits of the site. (NV/Murphy-6/16)

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Response: As a regulatory agency with clear statutory responsibilities for protection of the public health and safety and the environment, NRC has a well-defined role in regulation of HLW disposal. This role would not be compromised by NAS' activities.

- D. Independent experts should conduct evaluation of how defense wastes, such as Iodine-129, have reached deep groundwater on and off Hanford reservation. (WA/Provost-6/16)

Response: NRC will not be conducting any research into this subject. However, in a 6/25/85 letter from R. Browning, NRC, to W. Purcell, DOE, NRC requested DOE to incorporate Iodine-129 information into its evaluation of the deep groundwater flow system at the Hanford site.

- E. The site characterization program proposed in the Final Environmental Assessment (FEA) is inadequate in meeting 10 CFR Part 60 requirements. The State of Utah disagrees with NRC's conclusion, as outlined in a letter from the Chairman to Senator Johnston, that NRC review of the five FEA's did not identify concerns which would call into question suitability of any of the five sites. In the draft and final EA, NRC concluded that adequate characterization of groundwater movement in and near Davis Canyon may require drilling within the Canyonlands National Park. This would be precluded by disqualifying factors in the DOE siting guidelines. (UT/Storey-6/16)

Response: NRC responded to these concerns in a letter from Robert Browning to Ruth Ann Storey, State of Utah, dated 7/29/87. In our response, we cited a section from NRC's comments on DOE's final Environmental Assessment (EA) for the Davis Canyon site: "... the lack of geologic and hydrologic studies in and close to the National Park, as proposed in the final EA, may result in an incomplete site characterization program insufficient to produce needed data critical to the understanding of the hydrology and the geology of the Davis Canyon site." Should further consideration of this site occur, it is likely that based on these NRC staff concerns, DOE would need to re-evaluate the field investigation program.

- F. NRC's narrow review of EA's; NRC did not review DOE costs, schedule, or ranking of sites. (WA/Provost-6/16)

Response: As stated in a 4/13/87 letter from Chairman Zech to Senator Johnston, the staff's EA review was "limited to the specific responsibilities of NRC: public health and safety and the waste isolation considerations found in 10 CFR Part 60 ... In deciding whether to proceed with site characterization, the DOE has considered other factors outside NRC's regulatory responsibility (e.g., cost, schedule, ranking of sites). The NRC staff has not reviewed or commented upon such areas."

87/09/23

- G. "NRC needs to put teeth in its investigative process." Stronger NRC role would be prudent. (WA/Provost-6/16)
NRC should be more involved and take a more demanding approach. (Yakima/Jim-6/16)

Response: Reference discussion by NMSS management in a 7/23/87 Commission meeting related to the status of the HLW program. The introductory remarks beginning on p.5 of the transcript, which was sent to state and tribal representatives 8/5/87, explain NRC's interpretation of the Nuclear Waste Policy Act with regard to NRC's role in the HLW program.

- H. Will NRC consider the need for a Monitored Retrievable Storage (MRS) system? Will alternatives to an MRS be considered? (TX/Frishman-6/16)

Response: In a 6/15/87 letter to Chairman John Glenn responding to questions from Senator Sasser, NRC commented on this subject as follows:

"As we understand the NHPA, the Congress left it for NRC to decide which particular aspects of a DOE MRS proposal warrant NRC comment. In examining the DOE proposal, NRC decided that its most useful role would be to focus its comments on subjects falling within its later licensing responsibility. In preparing our comments, we regarded the matter of need as primarily a business decision within the overall waste management system by which DOE intends to implement the NHPA. We did not view the MRS as needed for protection of the public health and safety.

The proposal was therefore examined from the perspective of the licensability of the facility if authorized by Congress, specifically from the standpoint of its design adequacy to protect the public health and safety. The NRC reviewed the DOE evaluation of need for the MRS but, in keeping with the focus of its comments, assumed a neutral posture."

- I. NRC should take a closer look at cost versus benefit of an MRS; doubts DOE estimates of savings with an MRS. (TN/Smith-6/16)

Response: In a 4/27/87 letter to Senators Albert Gore and James Sasser regarding the need for the DOE's MRS facility, NRC stated:

"The Commission believes the question of need mainly reduces to economic considerations and the role the MRS might eventually play in reaching a final solution to the problem of high-level waste disposal. Although we recognize the regulatory benefits associated with an MRS, these policy issues are best addressed by DOE and elected officials who provide the impetus to the program rather than the NRC."

87/09/23

- J. Will NRC be making considerations on an ALARA basis and review the MRS as part of a total waste management system, or will NRC only be reviewing the MRS as an end point fixture? (TX/Frushman-6/16)

Response: The NRC staff believes, based on analysis of generic transportation impacts and a general knowledge of the other spent fuel management process steps involved in storage, that there would be no substantial difference in the occupational and public dose involved in a system with an MRS and one without an MRS.

- K. What standards will NRC use in granting "concurrence" on DOE's use of radioactive materials at the site--programmatic type concurrence or case-by-case? (TX/Frushman-6/16)

Response: As specified in 10 CFR Part 60, Sections 60.17 and 60.18, DOE's SCP must include plans for any onsite testing with radioactive material. NRC's Site Characterization Analysis of the SCP will include a determination regarding whether or not the Commission concurs that the proposed use is necessary to provide data for the preparation of the environmental reports and for a license application. Thus, any NRC concurrence would be on a case-by-case basis.

- L. What other entities have DOE/NV identified for audit? (NV/Davenport-6/30)

Response: This listing is included with the meeting minutes of the 6/30/87 meeting.

- M. Request for matrix providing authorities for all NMSS regulatory responsibilities. (NV/Davenport-6/30)

Response: This listing is included with the meeting minutes of the 6/30/87 meeting.

- N. NRC should provide routine HLW information to tribes in corridor states. (National Congress of American Indians/Holden-6/30)

Response: NRC's current policy is to routinely notify all interested parties of the availability of significant documents in the HLW program. In addition, a toll-free telephone recording system is maintained for information related to upcoming meetings in the HLW program.

STATEMENT OF DONALD O. PROVOST

STATE OF WASHINGTON

TO THE

NUCLEAR REGULATORY COMMISSION

June 16, 1987

Mr. Chairman and members of the Commission: Thank you for inviting me to present state of Washington concerns about the high-level nuclear waste program. For the record, I am Donald Provost, Performance Assessment Manager of the Department of Ecology's Office of Nuclear Waste Management.

Before I make specific comments, I will briefly discuss our earlier participation with NRC. Our first major involvement was with the 1982 Site Characterization Report (SCR) on the Basalt Waste Isolation Project (BWIP). State representatives had routine discussions with NRC staff. We were pleased by the excellent work from NRC staff. The draft Site Characterization Analysis (SCA), together with comparable reports from the state of Washington, affected tribes and USGS, influenced the U.S. Department of Energy (USDOE) to significantly improve the BWIP program.

Since 1982, we have worked closely with NRC staff. Recent meetings on Hanford hydrology issues and on general technical positions were

excellent examples of NRC's fair and independent approach. Your on-site representative is doing an excellent job and is a credit to the Commission.

As you know, we are now at a critical juncture of the high-level nuclear waste repository program. The site selection process is on the brink of total collapse. USDOE credibility is at an all time low. NRC and the other affected parties may be "painted with the same brush" if we do not address the credibility issue now, rather than wait until we are in a crisis situation.

Today NRC finds itself in a position reminiscent of its earlier nuclear power plant licensing efforts. NRC staff review of the license was limited to specific NRC responsibilities. Cost, schedule, need, and management capabilities were not reviewed. The result was an extended, controversial, contentious licensing hearings which lead to much higher costs and a very great loss of credibility for the utilities and NRC. NRC chose to narrowly limit staff review of the environmental assessments to the Commissions specific responsibilities. The decision was not to review USDOE cost, schedule or overall ranking of the sites. This approach was taken even though there is a compelling record which documents defective data collections, a lack of adequate quality assurance, a disregard of important data, biased interpretations of data, and over optimistic site evaluations.

Hanford was ranked dead last in both the pre-closure and post-closure comparisons of sites. In the year since Hanford was selected as one of the three sites to be characterized, the situation at Hanford was worsened.

- The stop work order has not been lifted because adequate quality assurance is not yet in place.
- USDOE disregarded important information which could disqualify the site.
- When preparing the Hanford hydrology program, USDOE did not schedule consultation with NRC, states or tribes.
- USDOE has not provided critical data concerning historic contamination of deep aquifers by iodine 129 as promised.
- The cost of site characterization has increased between 10 and 20 percent.

It is important that you understand some of the reasons we in the state of Washington are so adamant in our position that:

- the site selection process must be brought to a halt;
- the May 28th decisions must be retracted; and
- the process must be restructured before this program goes on.

We have identified many serious technical concerns which cannot be brushed aside by simply attributing them to the NIMBY syndrome. Our concerns are real and they are substantial.

Groundwater Travel Time: State of Washington and USNRC consultants believe that there is a significant likelihood that groundwater travel time would be less than that required by NRC regulations.

Exploratory Shaft (ES) Drilling: Drilling exploratory shafts will disturb the groundwater system, which would lead to the loss of "perishable" hydrology data. ES drilling should not start until the pre-ES hydrology programs have been completed and NRC, states and tribes have an opportunity to consult with USDOE concerning study results.

Geologic Features: Scientists have identified a suspected fault pattern within the controlled area study zone (CASZ). USDOE plans should include provisions for drilling to determine the extent of the suspected fault pattern.

Presence of Natural Resources: There is strong evidence to suggest the presence of natural resources in the vicinity of the proposed repository. Methane (natural gas), geothermal resources, and groundwater could attract future prospectors to the site. After the final EA was issued, USDOE determined that a proposed repository at Hanford would be a gassy mine.

Retrievability: The Act requires that nuclear waste packages must be retrievable after placement in a repository. Hanford's high rock stresses cause serious retrievability problems and USDOE has attempted to engineer around the problem. At an early stage of the program, the plan was to place multiple canisters in long boreholes. In the EA, USDOE described an approach which utilized short boreholes. Now USDOE is considering a shallow trench approach. Each succeeding approach has greatly increased cost while not providing confidence that canisters could be retrieved.

Miner Safety: Shaft and tunnel construction will relieve in situ stresses which could lead to spontaneous fractures within the rock and rockbursts from walls of shafts and tunnel. Physical stresses caused by high temperatures and a wet environment will require that miners work shorter hours. A loss of ventilation could allow methane concentrations to reach levels which would allow explosions and/or asphyxiation.

Earthquakes: The many small earthquake "swarms" which occur in the immediate vicinity of the Hanford site indicate the release of rock stresses. The distribution of such swarms gives an indication of where fracturing is occurring in the basalts. The fractures are possible groundwater pathways. The earthquakes locations appear to coincide with the geologic features mentioned earlier.

Radionuclide and Chemical Contamination: Previous Hanford activities have resulted in heavy contamination of the controlled area study zone (CASZ). Independent experts should conduct an evaluation of how defense wastes such as iodine 129 have reached deep groundwaters on and off the reservation.

Program and Data Management: USDOE's high-level waste management program has been plagued by serious program and data management problems. The overall management approach has been based on competition among several different repository projects. This has led to inconsistent management and data quality at different sites. USDOE is now planning to contract for an overall manager for site characterization programs at the three candidate sites. This is probably an improved approach, but the man-

agement contractor will not be in place for at least two years.

Clearly, substantial site characterization should not occur until a new management philosophy is operational.

The scope of the state of Washington review activities will continue to cover all health, safety, environmental, socioeconomic and technical issues. We ask that NRC broaden its review. At a minimum, wrong doing, lack of disclosure, ethics violations or misconduct should be investigated prior to the time USDOE submits the license application to the Commission. Simply stated, NRC needs teeth in its investigational process.

In summary, the high-level nuclear waste program is on the brink of collapse. A stronger NRC role at this time would be a prudent decision. A stronger NRC role would help ensure that ratepayer and taxpayer money is well spent.

STATEMENT OF FUSSELL JIM
MANAGER, NUCLEAR WASTE PROGRAM
YAKIMA INDIAN NATION

before the

UNITED STATES

NUCLEAR REGULATORY COMMISSION

"Status of the High-Level Radioactive Waste Disposal Program"

June 16, 1987

Mr. Chairman, members of the Commission--

My name is Russell Jim. I am Manager of the Nuclear Waste Program of the Yakima Indian Nation. I would like to thank you for this opportunity to present the views of the Yakima Nation about the status of the federal nuclear waste disposal program.

The Yakima Nation is an affected Indian tribe with respect to the proposed Hanford repository site in Washington State. The Yakima Indian Reservation is thirteen miles from the Hanford Site at the closest point, and most of the Hanford Site is on Yakima Ceded Lands. Under the Treaty with the Yakimas of 1855 the Yakima Indian Nation retains hunting, grazing, and food gathering rights on those Ceded Lands and fishing rights at usual and accustomed places on the rivers and streams which pass through them, including the Columbia and Yakima Rivers. It is on the basis of these treaty rights that the Secretary of Interior determined that the Yakima Nation is an affected Indian tribe under the Nuclear Waste Policy Act, and found that these treaty rights would be affected by the location of a nuclear repository at Hanford.

I would like to discuss the very different conclusions that are reached by the respective parties about the suitability of the sites DOE has recommended for characterization. We are convinced that the process that has been used to select sites for characterization--and the results of that process--are seriously flawed. Looking at the same information and process, experts who are optimistic--including the Commission--conclude that there is no reason not to proceed with the sites recommended by DOE for characterization.

What is the basis for these differences in conclusions? All of the parties agree on one point: Not enough is known about the sites at this time to make conclusive determinations about their suitability. The differences of opinion revolve around the

appropriate degree of conservatism to use in making the assumptions that are necessary to fill in the gaps in our present understanding. DOE, which wants to justify its previous decisions about which sites to characterize, almost invariably makes optimistic assumptions. DOE is not really trying to find negative factors, so it is not surprising that they do not find them unless they are unavoidable. DOE's largely unfounded conclusion is that all the sites are suitable for repositories.

The NRC, in contrast, has identified significant issues for all of the sites which must be resolved if they are to be found licensable. Significantly, the Commission's official stated position appears to be that if these issues are not resolved, they could prevent licensing of any of the sites. In spite of this presumption, the Commission concludes that there is no reason not to proceed with characterization of the three recommended sites.

The Commission apparently supports characterization of the recommended sites because it cannot now be determined conclusively that any would be unsuitable. We hold the more conservative view that the adverse conditions at some if not all of the sites are sufficiently numerous and serious to dictate their elimination from consideration. We believe that the Commission should not be supporting characterization of the recommended sites when by its own admission there are potentially disqualifying conditions at all of them. A conservative program with a comprehensive national screening using truly selective siting guidelines could identify sites which the Commission could endorse more enthusiastically. Instead of having to say that significant issues could disqualify any of the sites, NRC should be able to say that it cannot identify any issues that would prevent licensing of the recommended sites.

We believe that sites could be found that would satisfy these conditions. Such sites might be in basalt or granite, but they would probably not be in extremely complex geohydrologic settings, with plentiful flowing groundwater, adjacent to major rivers. They might be in salt, but they would probably not be under extremely important aquifers and prime farmland, or adjacent to pristine national parks, or directly beneath towns. They might be in unsaturated tuff or other unsaturated rocks, but they would probably not be closely surrounded by potentially active earthquake faults. The sites that DOE identified for the most part before the NWPA was passed have all of these problems and more.

DOE takes the approach that it need not find the best sites, but rather only "suitable" ones. DOE looks at these sites and sees no significant problems. The NRC is also optimistic, although less so than DOE. The Commission looks at these sites, sees significant problems, and concludes that they should be

characterized to resolve the problems. Tribes and states, and most of their citizens, look at the sites, see the same problems, and conservatively conclude that since we could obviously do much better, we should do so.

Which approach should govern implementation of the waste program? If public confidence in and acceptance of nuclear waste disposal are truly crucial to its success, as Congress declared in the NWPA, then the implementing and regulatory agencies should adopt the conservative approach urged by the states and tribes. The reason for this is simple: the American public does not share DOE's optimism about this enterprise. The people are, in general, very skeptical about the ability of our institutions to safely manage and dispose of hazardous materials.

Because of its skepticism, the public will never accept nuclear waste disposal unless it is convinced that this activity is being carried out as carefully as possible. The people of the Yakima Indian Nation, and the public as a whole, want assurance that the federal government is truly working to find the best possible sites to dispose of these materials.

What they see instead is a program that refuses to accept the need for conservatism, and which could obviously have come up with a much better slate of sites. They see sites that are selected because the government already owns them, rather than because of their favorable geologic characteristics. They see that those sites have many common sense problems, like flowing groundwater, nearby rivers, valuable aquifers, and earthquake faults. They see the DOE doing a comparative evaluation of the sites, then choosing for characterization the site--Hanford--that ranks in last place for virtually all considerations. They see excessive optimism in all of the assumptions. All of this cumulative non-conservatism destroys public confidence that this program is being implemented adequately.

The advantages of a conservative approach hold true even if the scientific optimists are correct in their assertion that there are no significant technical impediments to successful waste disposal, but rather only perceptual, or political impediments. Even if perceptions are the only real problem, it should be apparent that the government and industry cannot alleviate the widespread perception that nuclear waste disposal is unsafe by simply asserting the contrary, and always making the most optimistic assumptions. Indeed, such a course of action only worsens public skepticism. Many observers who were initially willing to give DOE the benefit of the doubt have become vigorous opponents of the Department's implementation of this program after observing it.

The present opposition of tribal and state governments to the implementation of the nuclear waste program is simply a

reflection of the views and concerns of their citizens. So long as the people see a program that is based on unbounded optimism (which they do not share), and that rejects the need to try to find sites for repositories that are among the best that can be found, they will never accept the program as safe. Consequently, their tribal and state governments will reflect that skeptical attitude, and it will be very difficult for the program to succeed.

We sincerely believe that the Commission would in the long run be more helpful to the success of this program if it took a more involved and demanding approach to site selection, rather than deferring to DCE's excessively optimistic approach.

High Level Waste Definition

The Commission has circulated an Advance Notice of Proposed Rulemaking for its definition of high-level radioactive waste ("HLW"). We applaud the Commission for the decision to issue this proposal as an ANPR rather than as a proposed rule, and for extending the deadline for comments. The issue is complex and controversial, and the extra opportunity for analysis and comment preparation is very helpful. The YIN, whose formal comments on the proposal will be submitted shortly, is very concerned about its potential impact on disposition of the existing defense wastes at Hanford.

The Commission has suggested two options for dealing with reprocessing wastes: 1) determinations based on concentrations, and 2) maintaining the traditional approach, which defines all reprocessing wastes as HLW. The concentration-based proposal appears to be better justified in terms of technical and health effects considerations. But the dual concentration test proposed by the Commission, which would require that reprocessing wastes be both "highly radioactive" and "requiring permanent isolation" to be considered HLW, would unjustifiably exclude the majority if not all of the old Hanford tank wastes. As it was clear that Congress considered those wastes to be HLW when it passed the Energy Reorganization Act of 1974, and there is no contrary indication in the Nuclear Waste Policy Act, it would be inconsistent with congressional intent for the Commission to redefine them as LLW now.

The Yakima Indian Nation will therefore support Commission adoption of the concentration approach, provided that the test for HLW should be considered satisfied if a mixture of nuclides satisfies either of the two criteria stated by the Commission, rather than requiring that both be satisfied. If material exceeds the concentrations in either of the two tables of 10 CFR Part 61--that is, if it is above-class C LLW--it should be considered HLW. Under such a test, material which is highly

radioactive would be considered HLW, and material which requires permanent isolation would also be considered HLW. Most of the contents of the old Hanford tanks would probably still be considered HLW, which is consistent with congressional intent concerning those materials.

Licensing Support System Negotiated Rulemaking

The Commission has proposed to undertake a negotiated rulemaking to establish procedures for information management and submission in the licensing of repositories. The Yakima Indian Nation supports that proposal, and commends the Commission for the effort to include affected parties early in the process of formulation of these controversial rules. We understand that the convenor for the negotiated rulemaking has submitted his feasibility report, which recommends proceeding with the negotiated rulemaking in spite of serious concerns about mistrust of DOE by other affected parties. We share those concerns, but nonetheless feel that the effort will be worthwhile.

Consensus on Characterization Testing

In his remarks to you last week, Ben Kusche mentioned the participation of affected states and tribes at the recent BWIP hydrologic testing meeting, and stated that consensus had been reached that DCE's planned tests were appropriate. While we agree that there was a consensus that the meeting was productive and cooperative, there was not technical consensus on the adequacy of the test plans. Technical representatives of the Yakima Indian Nation raised numerous issues concerning the number and location of planned tests which have not yet been addressed. We look forward to further discussion with DOE about these issues, and expect that NRC staff will also be interested in their resolution prior to the commencement of testing.

CONFEDERATED TRIBES OF THE
UMATILLA INDIAN RESERVATION
BEFORE THE
NUCLEAR REGULATORY COMMISSION

June 16, 1987

Commissioner Zeck, and Members of the Commission, my name is Bill Burke and I am the Director of the Umatilla Nuclear Waste Study Program. The Umatilla Tribe appreciates this opportunity to appear before the Commission and to present our perspective on DOE's repository program. We have been reviewing the transcripts of your meetings with Ben Rusche the last few years and have found his comments on progress in the repository program to be consistent with many of DOE's favorable findings in the EAs in that they are overly optimistic.

As an affected Indian tribe under the NWPA, the Umatilla Tribe has broad authority to conduct independent oversight of DOE's repository program and to insure the Tribe's interests, namely our treaty rights, are protected. Our involvement in the repository program over the past 4 years has generated considerable tribal cynicism and distrust of DOE's implementation of its duties under the NWPA. DOE's manipulation of the site selection process for the first repository and their "indefinite postponement" of the second repository evidenced a callous disregard of their statutory obligations under the NWPA and of the need to make siting decisions based on technical merit rather than political and programmatic expediency. The resulting public outcry, the lawsuits and the battle lines drawn by host states and affected Indian tribes have doomed the development of public confidence in nuclear waste facilities that Congress found essential. If site characterization proceeds in a manner similar to site selection, and we see no reason to suspect it won't, then the NRC can count a contentious and bitterly adversarial licensing proceeding. We share the NRC's

stated objective of seeking to have licensing issues resolved satisfactorily prior to the licensing hearing. Our experience in the repository program to date, however, does not inspire any confidence that that will be the case.

Reports from the NRC staff substantiate our concerns. Because of DOE's failure to conduct the repository program conservatively, there is a strong need for vigorous oversight of DOE's characterization activities by the NRC and affected parties. We have been gravely concerned by DOE's publically stated working hypothesis at the outset of the site characterization that each of the 3 sites will be found suitable for development as a repository and that each site will easily meet the EPA standards.

Your staff has reviewed DOE's Environmental Assessments and their analysis challenged important DOE findings and conclusions for the first repository sites. The NRC comments on the Hanford Environmental Assessment found that many of DOE's findings of favorable site conditions were based on sparse data that could just as easily support alternative findings adverse to DOE's interpretation. The NRC characterized many of DOE's favorable findings as "premature", "extremely tenuous" and reached by means other than a "conservative approach." The NRC claimed many of DOE's Environmental Assessment conclusions were "overly favorable" or "optimistic." The findings and conclusions that were the subject of your staff's critical review went to the heart of Hanford's containment capability. They included concerns about groundwater travel time, the tectonic suitability of the site, earthquake swarms, and life expectancy of the waste package and the potential for human interference in the vicinity of the site because of the presence of geothermal resources.

The NRC made similar critical comments about the Yucca Mountain and Deaf Smith sites as well. The NRC report concluded that DOE's claim concerning the superior performance of each site in meeting the EPA standard was "overly optimistic." Looking ahead to site characterization, your staff sounded the alarm about where DOE's repository program could lead. The staff warned:

"The significance of the above concerns is to DOE's ongoing preparation of the site characterization plans and eventually to site characterization activities, since both the general over optimism as well as the specific concerns could result in inadequate testing programs and inadequate information at the time of licensing."

There are several particular concerns we have that suggest your staff's warning is appropriate. The Umatilla and Nez Perce Tribes, and our consultants, are actively engaged in an investigation of the presence of commercial quantities of oil and gas resources in the vicinity of the Hanford site which could disqualify the site under the siting guidelines. Oil and gas exploration activities around Hanford are increasing in an era of depressed exploration budgets. DOE's dismissal of the issue in the Hanford Environmental Assessment based on the "current economics" of this rapidly depleating, nonrenewable resource of great potential value surrounding a repository required to isolate radioactive wastes for thousands of years defies reason.

In December 1986, Amoco Production Company requested participation from all interested parties, including the Tribe, in laboratory analyses of a number of well cuttings from two of the deep Shell tests, the Bissa # 1-29 and the Yakima Minerals #1-33. The Tribe received a grant modification from DOE to expend \$3,000 to participate in this research and be able to utilize the resulting data. In May 1987, the CTUIR and the Nez Perce Tribe, sponsored a workshop to review a number of logs of Hanford area wells. The Yakima Nation, the states of Washington and Oregon, and the NRC attended this workshop. The logs reviewed at this time showed that considerably more methane gas was present in the basalts and their interbeds than was understood from the literature. A paper by a Rockwell geologist (Deacon R.J., 1987), presented several days after this workshop, stated that data from the three deep Shell wells

indicated that:

...the structure of sub-basalt sediments...suggests that entrapping conditions may have occurred that could contain major hydrocarbon reserves.

In F.Y. 1988,, the CTUIR plans to develop study plans for hydrogeology and for structural geology/seismotectonics. The BWIP SCP, DOE documents, and information from outside DOE will provide a basis for determining what types of studies will be done.

Other affected parties, and organizations as well as NRC staff, have worked on hydrogeology and seismotectonic issues again finding DOE's claims over optimistic. We feel the studies we plan will help the Tribe understand NWPA issues and we urge the NRC and their staff to work closely with the Tribe on these critical issues. Let me remind the commission of the close working relationship the NRC and all affected parties had especially with the Tribe during the Environmental Assessment Process. We encourage NRC and their staff to work with us again by sharing comments on the SCP. Our team of consultants and NRC's consulting team should meet especially during NRC's Site Characterization Analyses (SCA) phase. We desire early and close communications with NRC's staff.

Both the NRC and the Tribe should be sure DOE adequately addresses all technical issues and not skew results for our people and environment.

Addressing these technical issues will require that DOE implement conservative site characterization program that assumes nothing and one that purports to disprove disqualifying conditions and that conservatively analyzes each sites performance. In addition, DOE must open the process up to close inspection and greater involvement by the NRC and the affected parties. We have found DOE to be extremely reluctant to accept the broad authority of affected parties under the NWPA. The Tribe has confronted DOE's reluctance in C & C negotiations over the last two years which we terminated last January. As you are aware Congress withheld \$79 million of DOE's 1987 budget pending Congressional certification of DOE's

progress in negotiating C & C agreements. The CTUIR has withdrawn from C & C negotiations because of DOE's insistence on narrowly interpreting NWPA provisions concerning the authority of affected Indian tribes. A related issue of mutual concern to the NRC and the Tribe continues to be an issue with our on-site representatives at Hanford. A NRC report evaluating the effectiveness of your on-site licensing representative program concluded:

"Through the OR [On-Site Representative] program has provided the staff with an exclusive source of important information, DOE and DOE Project representatives have not been giving the ORs the access to records, meetings, personnel, and facilities intended in Appendix 7 to the Site-specific Agreement and needed to be fully effective. Interactions with DOE and DOE Project representatives have been the least effective at BWIP where the OR has been restricted from access to some draft information, select meetings, and other interactions with various DOE Project representatives. The restrictions imposed by DOE/Rockwell can be largely attributed to differences in interpretation of Appendix 7 which affect not only the OR program, but interactions with NRC headquarters staff as well.

The report goes on to note that the Nez Perce and Umatilla representative at Hanford is experiencing similar problems.

"The Nez Perce/Umatilla Indians already have such a representative at BWIP, with whom the BWIP OR has frequent interaction. Difficulties that have been encountered in this area are primarily due to DOE reluctance to release or make information available for staff review."

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For instance, both the NRC and the Umatilla/Nez Perce On-Site Representatives were not allowed to attend a Hydrologic Task Force meeting and other internal meetings at Rockwell (Westinghouse now). It is the combination of DOE's flawed implementation of the repository program since the NWPA was enacted and their failure to permit the affected parties to assume the level of involvement and participation Congress intended that has brought this program to its knees.

In summary, the Umatilla Tribe desires a close working relationship with NRC. Like NRC, we feel the DOE has been overly optimistic in their approaches to technical issues. Public confidence in DOE's performance has eroded to the point of virtual nonexistence primarily due to a siting process that is deraged and a deraged schedule. Both the NRC on-site representative and the Umatilla/Nez Perce On-Site Representatives have had difficulty entering critical DOE planning meetings. We feel the NRC and the Tribe need to stand firm on their resolve to improve DOE's performance under the NWPA even if it means going to Congress for a remedy.

UMATILLA NUCLEAR WASTE STUDY PROGRAM

NRC BACKGROUNDER

Summary-

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) has been involved in the High-Level Nuclear Waste Program since 1983 in developing technical information to prepare the Tribe in its understanding of high-level nuclear waste issues of particular importance to the Tribe. It is felt that as these studies continue and issues become better defined, that the Tribe will put itself in a position to participate in a meaningful and informed way at the NRC licensing hearing, if the Hanford site progresses to the licensing phase.

1.0 Scientific and Technical Foundation of the NWSP

The Nuclear Waste Study Program (NWSP) was established by the CTUIR after careful consideration of its roles and responsibilities as an "affected Indian tribe" under the Nuclear Waste Policy Act (NWPA). Upon its designation by the Secretary of Interior as an affected tribe in the Fall of 1983, the CTUIR commissioned a "scoping study" by the Tribes prime contractor. This scoping study included a regional characterization of tribal resources potentially affected by a nuclear waste geologic repository at the Hanford site which includes portions of the Tribe's treaty-protected possessory and usage rights area. This study also evaluated various modes of tribal participation in the NWPA vis-a-vis the U.S. Department of Energy (DOE), U.S. Nuclear Regulatory Commission (NRC), and other cognizant federal, state, and tribal governments.

The CTUIR scoping study resulted in a determination by the Tribe that is participation in the NWPA should be based upon direct, active involvement by tribal governmental leaders in all pertinent aspects of the siting, technological developments, and decision-

making processes associated with its role as an "affected Indian tribe" under the Act. Recognizing that it did not possess the necessary scientific and technical resources to participate on a "one-to-one" basis with the vast technological resources of the DOE, the Tribe committed itself to building a technical team of consultants which would be capable of reviewing, monitoring, and evaluating the extremely large body of technical data and information which would be generated by DOE and its contractors and by other federal agencies throughout the NWPA siting and development process.

2.0 Activities and Accomplishments

Since its foundation, the Umatilla NWSP has proceeded from the "pre-characterization" phase to the present "site characterization" phase which is designed to engage the Tribe fully in cooperative intergovernmental review, monitoring, and other participation processes as well as in the conduct of independent tribally sponsored technical analysis, impact assessments, and public informational activities. During the period 1984 until mid-1986, the NWSP was oriented to DOE's precharacterization site evaluations and included a variety of related tribal efforts. The Tribe performed technical reviews and submitted formal comments on several key NWPA documents during the precharacterization period. These included:

- Draft Mission Plan for the Civilian Radioactive Waste Management Program
- "Proposed General Guidelines for Siting of Geologic Repositories"
- Draft Environmental Assessment for the Hanford Site, Washington

Several hundred scientific reference documents, associated with the Draft Environmental Assessment (DEA) and other DOE and NRC documents, were reviewed by the Tribe's technical team during this period. Other major NWPA documents, including the Office of Civilian Radioactive Waste Management (OCRWM) draft Transportation Business Plan and draft Transportation Institutional Plan were also

reviewed and formally commented upon during this precharacterization period. The Tribe provided written comments also concerning the Draft Environmental Impact Statement for Hanford defense waste disposal alternatives which have implications for the NWPA repository program.

Meanwhile, the Umatilla NWSP was preparing contingency plans for its larger and long-term roles in the event that the Hanford Site was formally recommended for site characterization. Assisted by its technical contractor team, the Tribe evaluated various approaches to its site characterization monitoring efforts and adopted a strategic plan for participation.

Immediately following the May 28, 1986 decision by the Secretary of Energy and the President recommending that the Hanford Site be among the three sites to be characterized, the Tribe took steps to convert its contingency plans into an "action plan" which specifies the major tribal projects to be conducted during the site characterization phase. Its Comprehensive Program Plan was completed in October 1986 and was submitted as a "deliverable" to DOE. This strategic plan describes a program of work to be performed by the Tribe, its program staff, and its technical contractors for the review and evaluation of DOE activities and for independent environmental, socioeconomic, and cultural assessments.

The NWSP Comprehensive Program Plan provided for development of specific project plans which were also issued as "deliverables" in October 1986. These plans included:

- Environmental Surveillance Plan;
- Socioeconomic and Cultural Assessment Plan; and a
- Preliminary Risk Assessment Method Plan.

Another major project of the Umatilla NWSP is the analysis of site characterization activities by DOE. To facilitate effective monitoring of the Basalt Waste Isolation Project (BWIP) at Hanford throughout the site characterization phase, the Umatilla Tribe and the Nez Perce Tribe entered into a mutual assistance agreement which provides for a qualified full-time on-site representative at Hanford. This position and an office was established in Richland, Washington in mid-1986.

To date, the Tribe has utilized a highly qualified technical contractor team consisting of geologists, hydrogeologists, nuclear engineers, economists, environmental scientists, and other professional specialists in virtually all aspects of its program. This technical team has worked continuously since 1984 in reviews and analysis of DOE technical developments and has provided scientific services for the planning of tribal projects. As proposed in its FY 1987 grant application to DOE, this existing team would be expanded to include approximately 12 additional part-time or full-time professional consultants to accommodate the much greater workload for the BWIP site characterization phase and associated tribal assessment activities.

One of the significant examples of the Tribe's "oversight" activities concerning DOE siting efforts has been a recent study initiated by one of the Tribe's senior consulting geologists (who also served as the interim on-site tribal representative at Hanford) related to potential oil and gas resources in the Hanford area. Section 112(a) of the NWPA of 1982 requires the DOE to prepare "general guidelines for the selection of sites in various geologic media." Section 112(a) then states that:

...Such guidelines shall specify factors that qualify or disqualify any site from development as a repository; including factors pertaining to the location of valuable natural resources,...

The most likely natural resources to be found in or below the Columbia Plateau basalts in the Hanford area are oil and gas, ground water, and geothermal resources.

On page 6-184 of the Hanford Environmental Assessment, released on May 28, 1986, DOE states that, "the presence of hydrocarbons from beneath the basalts is, at best, speculative." On the preceding page, however, DOE contradicts this conclusion by stating that Shell Oil and Atlantic Richfield have completed and tested four wells in the area, although they were "deemed noncommercial." In at least one of these wells, a significant amount of gas was produced, but current prices were too low to support major field development. These wells were deep and very expensive to drill in the tough plateau basalts, but exploration in the area continues at a rapid pace. In a period of low oil and gas prices, combined with a nationwide decline in oil company budgets for domestic exploration, this activity is particularly significant.

The interest in the Hanford area as a potential oil and gas exploration target zone is also shown by the requests for exploration by oil companies. The Bureau of Land Management (BLM) and the Washington Division of Geology and Earth Resources have received over 150 lease applications for areas within the Hanford Reservation. During 1986 alone, more than 250 line miles of seismic exploration data were collected in the Hanford area. A fifth wildcat exploration well was also granted a permit to drill to 15,000 feet, a very expensive undertaking with current exploration budgets.

As stated by DOE in the Hanford Environmental Assessment (EA) (page 6-183):

"A small, depleted, low-pressure, natural gas field in basalt that was in production from 1929 to 1941 is present on Rattlesnake Mountain at the southern edge of the Hanford Site (11 kilometers (7 miles) south of the reference repository location). At current economics, the old Rattlesnake Hills gas field is noncommercial."

As in the previous example, the DOE conclusion on repository disqualification is based on "current economics," not on long-term supply/demand curves for natural gas resources. Basing a disqualifier for repository site on "current economics" of a rapidly depleting, nonrenewable natural resource of great value seems unrealistic. Instead, the disqualifying condition should be oriented to the long (up to 1,000 years) postclosure period when such resources may be sufficiently valuable to attract exploration ventures and thus making the site subject to "human interference." In addition, this "small, depleted, low-pressure" field produced a total of 1.3 billion cubic feet of gas prior to 1941 (McFarland, 1983, Washington Div. Geol. Info. Circ. 75).

The presence of natural gas in the plateau basalts is becoming a concern to DOE for a reason other than economic development. DOE recently began discussing the potential for redesigning the exploratory shaft. This redesign is apparently due to the need for increased ventilation of methane gas in the basalts at the repository horizon. The change in diameter of the exploratory shaft from 6 feet to 9-12 feet indicates a significant change in the amount of ventilation deemed necessary for worker safety.

The deep exploration wells, the seismic profiles, and surface geophysics, such as aerial magnetometer and side-looking radar surveys, are beginning to delineate features that may directly impact the repository program. Since structural traps, such as folds and faults, are the first places explored for oil and gas resources, a significant amount of new structural data are being acquired. Piecing some of these data together in a logical manner was the goal of the CTUIR interim on-site representative at Hanford in mid-1986. His cross-section (see attached fold-out page) presents some of these geologic data in a diagrammatic form. This cross-section shows that several thrust faults may have been present in the old Rattlesnake Hills gas field, as indicated by a potentially repeated series of Oligocene (older) coal seams overlying Miocene

(younger) basalts. Several major folds north of Rattlesnake Ridge, such as the Yakima, Umtanum-Gable Mountain-Gable Butte, and Saddle Mountain anticlines, may be bounded on their northern flanks by similar thrust faults. Thrust faults in the Wyoming-Idaho Overthrust Belt have, in the past 20 years, become the most important onshore oil and gas exploration province in the continental United States and Canada. This indication of potentially significant faults near the Hanford Site should be evaluated by DOE for the impact of capable faults and seismicity on the location of a repository.

This tribally sponsored study concerning potential hydrocarbon resources at Hanford further supports the Tribe's contention that the site may not be suitable for characterization. The Tribe contends that, at the very least, DOE should provide for a drilling and test program to determine the extent of subterranean faults and potential hydrocarbon resources at the site during characterization. However, at present, DOE does not plan to conduct such tests.

It should be noted that these tribal activities were coordinated to the extent possible with those of the State of Washington, which shares similar concerns about the Hanford site.

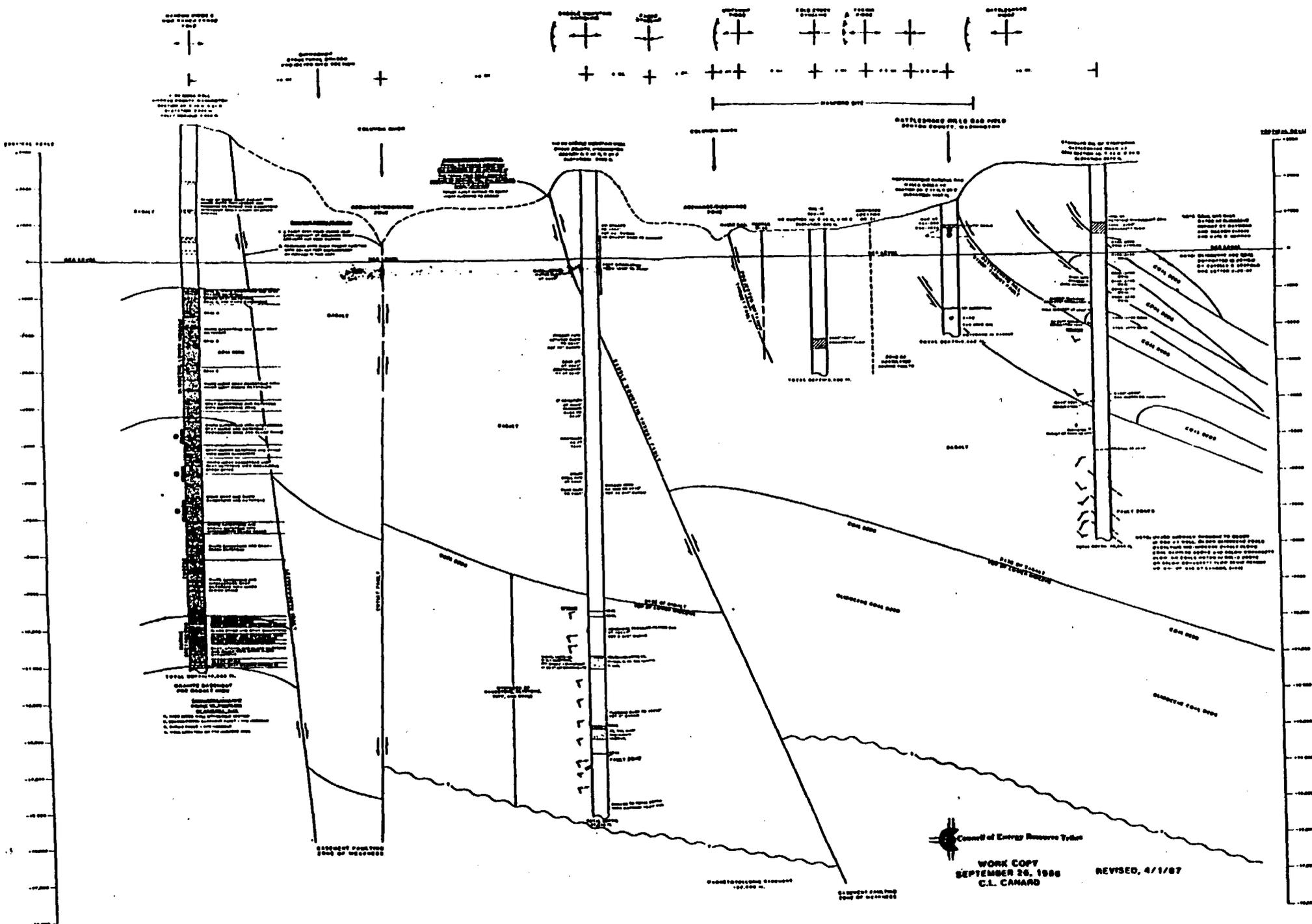
Tribal critiques of DOE site evaluation activities have also raised concerns about the adequacy of DOE efforts regarding: (a) planned hydrologic testing; (b) off-site environmental impacts within the Tribes's treaty-protected possessory and usage rights area; (c) quality assurance programs at Hanford; and (d) impacts associated with transportation of spent fuel and other high-level radioactive wastes (HLW) through the Tribe's reservation and treaty rights area. While substantial progress has been made in recent months in convincing DOE that its plans for site characterization and impact

assessment activities need to be expanded substantially so as to encompass all credible scenarios associated with repository and transportation operations, the Tribe believes that the "schedule-driven" approach to site characterization by DOE may militate against conducting truly comprehensive drilling, in-situ, and other testing programs sufficient to characterize the site.

The Umatilla NWSP is behind schedule because of funding but is prepared to expand its site characterization analysis and monitoring and its independent impact assessment activities in order to fully exercise its "oversight" and cooperative roles with NRC under the Act. However, recent issues have been raised by DOE regarding the Tribe's rightful and lawful roles under the Act.

DIAGRAMMATIC CROSS SECTION
SHOWING SUBSURFACE FACIES AT QUAD

SW



Geological Institute of the University of Toronto

WORK COPY
SEPTEMBER 26, 1986
C.L. CANARD

REVISED, 4/1/87

ON-SITE LICENSING REPRESENTATIVE ISSUES

This enclosure provides the following information on R. Cook's Issues:

1. List of R. Cook's Issues
2. February 3, 1987 letter from R. Cook on Questions and Answers provided to James Curtis
3. Memorandum from R.E. Browning to J.G. Davis on the February 3, 1987 R. Cook letter
4. Congressional Questions and Answers on the NRC staff's position related to Cook's Issues

ON-SITE LICENSING REPRESENTATIVE ISSUES

1. High in-situ stress at Hanford and its effect on constructability and isolation.
2. From time to time, R. Cook has raised issues regarding DOE's lack of QA in design, and the need for a more formal NRC pre-licensing interface with DOE.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

WM Record File
101

WM Project 10
Docket No. _____
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Distribution:

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(Return to WM, 523-85) Sae

February 3, 1987

MEMORANDUM: Robert E. Browning, Director
Division of Waste Management

FROM: F. Robert Cook, Senior On-Site License
Representative, Basalt Waste Isolation
Project (BWIP)

SUBJECT: QUESTIONS ASKED BY JAMES CURTISS ON JANUARY 30
1987 AND MY ANSWERS

The following are questions asked by Mr. James Curtiss of the Senate Environment and Public Works Committee. They are not in the order asked and are not exact quotes. Answers are essentially the information I provided. The total conversation was lengthy--about an hour. I did about 95% of the talking in answering his questions and providing tutorial information in helping him understand the answers.

1. Q. How long have you worked at the site?

A. About 3.5 years. I came in September, 1983.

2. Q. When did you come to the NRC?

a. September 1980.

3. Q. Where were you before?

A. I worked for the Navy in the Naval Reactors Program for 18 years. For Rickover.? Yes.

4. Q. What is your opinion about the adequacy of the site?

A. I do not believe it has adequate margin to allow demonstration of adequate isolation capability given the current requirements in Part 60 and considering current licensing procedures and in any case I do not believe it represents a practical, safe option.

5. Q. What is it that makes you conclude this?

A. The high in-situ stress in the rocks and its relation to instability.

At this point he asked me to explain and I did as best I could over the phone. I emphasized that what I was going to tell was my OPINION and did not reflect the NRC's positions. stated he wanted my opinion and ideas.

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I mentioned a number of documents which I have discussed in my periodic reports. I also explained the effects of the in-situ stress on the practicality of safely constructing and operating the repository's underground facility. I noted the sensitivity of the size of the repository to the in-situ stress. I noted the uncertainty the stresses cause in determining the disturbed zone and, hence, the isolation capability of the geology around the facility. I tried to explain the potential effects of the instability of the site as represented by the site's micro earthquakes and faults, new and old. I noted comments I have received from Olson regarding expanding the repository to the East following BWIP selection as a site and RHO's thwarted desire to determine the in-situ stresses prior to the selection. I noted Ash's major concern regarding the stress situation. I noted N. Cook's concerns expressed in review sessions which I attended in November, 1986.

I discussed the potential synergistic effects of construction, dewatering, thermal loading, local seismicity and in-situ stress and the difficulty associated with validating a design procedure to assess the site. I noted that I considered the pre-placement ground water travel time was going to be heavily dependent upon the hydrologic integrity of the Grande Ronde basalts directly above the underground facility in the thermal plume. I noted that I doubted that the pre-placement integrity could be demonstrated, much less the post-placement integrity, i.e., considering the disturbed zone. I noted that once contamination reached the Wanupum Basalts there was basically no barriers left in terms of travel time.

I explained the potential for lower stresses to the East of the current site. I discussed the recent experience with fatalities at the Lucky Friday mine and contrasted and compared that mine with the potential BWIP facility. I noted that our rules do not focus on non-radiological safety, but that this was a current concern within NRC. I noted my opinion on the subject of public health and safety and explained why I thought it was a critical issue for BWIP considering the public sensitivity to nuclear power. I noted that I did not consider MSHA controls for mine safety were adequate to assure worker safety--i.e., reasonable expectations of no deaths and acceptable frequency of injuries.

In general I tried to fully explain the factual basis for my opinion and the projected judgement of the inadequacy of margins in the site parameters to allow a successful facility and licenr review.

6. Q. He asked me what my work consisted of?

A. I told him that my reports were my primary product.

7. Q. He asked if I would send him all my reports?

A. I said I would send him the reports and pertinent attachments.

8. Q. Was any of this discussed before by NRC?

A. I told him some of the stability concerns were pointed out in the SCA and in EA comments, for example, major comment #4.

9. Q. He asked me who else was familiar with the stability issues associated with the site?

A. I told him P. Prestholt had written much of the SCA on the subject and referred him to Paul. I believe I also mentioned H. Lefevre.



F. Robert Cook, Senior
On-Site Licensing
Representative, Basalt
Waste Isolation Project
(BWIP)

FRCook/rdg

MEMORANDUM FOR: John G. Davis
FROM: Robert E. Browning
SUBJECT: F. R. COOK'S FEBRUARY 3, 1987 MEMORANDUM
CONCERNING THE SUITABILITY OF THE HANFORD SITE AS
A REPOSITORY

Mr. Cook's memorandum stated that, "I do not believe it (the proposed Hanford site) has adequate margin to allow demonstration of adequate isolation capability given the current requirements in part 60 and considering current licensing procedures and in any case I do not believe it represents a practical, safe option." However, in subsequent telephone conversations with him, he told me that he was not suggesting eliminating Hanford as a potential repository. Rather, he thinks the DOE should move the repository location to an area further East where, in his opinion, the data indicates the existence of a much lower in situ stress field.

The attached Q's & A's present the staff's positions related to Mr. Cook's issues which he raised in his memorandum as well as associated questions related to the site selection process and the suitability of the three sites chosen by the DOE for characterization.

We would be happy to brief you if you need further clarification of the items raised in Mr. Cook's memorandum.

Robert E. Browning

Enclosure: As stated

QUESTION 1. What is the NRC's role in regulating the DOE high-level waste program? What is the NRC's role in the site selection process and do the concerns about Hanford question this role?

ANSWER.

The role of the NRC in regulating the DOE high-level waste program is set forth in the Atomic Energy Act (AEA) and the Energy Reorganization Act (ERA). Sections 202(3) and (4) of the ERA provide the NRC with licensing and regulatory authority regarding DOE facilities used primarily for the disposal of high-level radioactive waste. The Nuclear Waste Policy Act (NWPA) further specifies the NRC's role in the high-level waste program. Pursuant to these authorities, the NRC developed procedures and technical criteria (10CFR Part 60) for licensing the construction, operation, closure and decommissioning of geologic repositories for high-level waste disposal.

Under NWPA, the formal role of the NRC involves (1) concurrence in the DOE siting guidelines; (2) review and comment on the site characterization plans and semi-annual progress reports prepared by DOE; (3) adoption, to the extent practicable, of the EIS prepared by DOE; and (4) consideration of applications for construction, operation and closure of a repository.

In addition to NRC's formal role, a procedural agreement was developed by DOE and NRC in 1983. This agreement established prelicense application consultation procedures for assuring that an information flow is maintained between the two agencies so that issues are raised early and guidance provided

for DOE's consideration during site characterization and issues can be resolved to the extent practicable by the time of licensing.

With respect to the site selection process, NRC's formal role is limited to: 1) concurrence in the siting guidelines and 2) review and comment on Site Characterization Plans (SCP's). In addition, as a part of our ongoing prelicense application consultation activities, the NRC staff have followed DOE's implementation of the siting guidelines by considering whether the existing data for the sites under investigation were used by DOE in the EA's and if there were any inconsistencies between DOE's evaluation and the siting guidelines. Our involvement to date has been consistent with our prelicensing role and expertise in radiological health and safety. Site selection decisions made by DOE consist of key factors and programmatic judgments in addition to those related to NRC's radiological health and safety role. Involvement in these other areas could detract from NRC's role as an independent regulator and could dilute the ongoing staff review of the site information specifically related to the health and safety requirements of 10CFR Part 60.

Concerns raised about Hanford have not changed the staff's view on its role in the DOE site selection process since DOE's implementation of the site selection process is consistent with the guidelines and since we have found no indication that any of the three sites should not be characterized. The NRC staff are aware of the technical concerns raised to date, have informed DOE of these concerns and consider that they can only be resolved through site characterization by additional data collection and analysis along with consultations among DOE, NRC, States and Tribes.

QUESTION 2. Why not start over in the site selection process and did the DOE process meet the DOE siting guidelines? Do you agree that the three sites selected are "among the best" available?

ANSWER.

The Nuclear Waste Policy Act (NWPA) laid out a site selection process, including development by DOE of the siting guidelines. The Commission has concurred on these guidelines and by so doing, played a major role in the development of specific guidelines and evaluations required for making various site selection decisions. The NRC staff continues to consider that proper implementation of these siting guidelines by DOE should lead to the selection of a suitable site. The staff's review of the draft and final EA's identified no major concerns regarding the consistency between the overall selection process which DOE used and the siting guidelines as concurred in by the Commission. Furthermore, although the staff did not evaluate the site rankings themselves, the staff's review of DOE's EA's has not resulted in identifying any health and safety related conditions which indicate that any of the three sites recommended by DOE should not be characterized. Beyond this observation, the NRC staff did not evaluate and therefore is not able to comment on whether the three sites recommended are among the best of the initial nine considered by DOE. In addition, the staff in its draft EA review of the nine sites found no conditions which would disqualify any of the sites.

The Commission believes that the siting guidelines provide a basis for DOE to select three sites that will be reasonable alternatives for the purposes of NEPA. Furthermore, the Commission in its concurrence on the siting guidelines has stated that the characterization of several sites "...will assure that DOE's preferred site will be chosen from a slate of candidate sites that are among the best that can reasonably be found."

QUESTION 3. Has any NRC work -- or other work of which NRC is aware -- suggested that any of the three sites is unsuitable for characterization or for selection as a repository?

ANSWER.

The NRC staff have found nothing to suggest that any of the three sites is unsuitable for characterization or selection as a repository. However, others, although not necessarily finding the sites unsuitable for characterization or selection, have identified the following two concerns which they suggest question the suitability of the Hanford site.

Groundwater Travel Time at the Hanford Site

Questions concerning groundwater travel time at the Hanford site relate to whether it will exceed the 1000 years specified in 10 CFR 60.113. During the final EA review, one NRC contractor reviewed the DOE's groundwater travel time analysis for the Hanford Site and concluded that "...there is a low probability that the GWT will exceed 1000 years (between 20% and 50%)...". The contractor further concluded that "...there is a high likelihood that the BWIP site will fail the 1000-year travel time rule based on current data." Additionally, the contractor recommended that "The NRC staff should consider directing DOE to show cause why the site should not be disqualified...."

The NRC staff, after reviewing and discussing the contents of the report with the contractor, concluded that with the existing limited data base, it is premature to place a significant amount of credibility on any current estimate of groundwater travel time until additional data has been collected. This conclusion is reflected in the staff's EA comment which concluded that because of the limited hydrogeologic data base and other concerns, high levels of confidence cannot be assigned to any estimates of groundwater travel time at Hanford. The staff further concluded that the groundwater travel time estimates presented in the EA were overly optimistic and that travel times, based on available data, may be significantly closer to 1000 years than was stated in the final EA.

After meeting with and considering questions raised by the staff, the contractor was requested to provide additional support for the conclusions reached in the original report. The contractor (subsequent to finalization of the staff's comments on the FEA's) developed an additional report in which the original conclusion was amended as follows: "...the reviewers consider that there is a significant likelihood that the BWIP site will fail the 1000-year travel time rule as currently interpreted in the IFC's draft technical position". Additionally, the show cause recommendation of the first report was omitted from the second report. The contractor called for the collection of more data at the site, but expressed the opinion, based on their analysis, that further data is likely to show "...failure of the site on the GLT criteria". Upon review of this additional report, the NRC staff and other contractors came to the same conclusion as for the original report. The staff has concluded that there is no basis at the present time to determine that the

site is unsuitable for characterization or for selection as a repository based on GWTT criteria.

Both the staff review and that of the contractor question DOE's conclusion that the groundwater travel time at the Hanford site will be well in excess of the 1000 year requirement. They differ significantly, however, in the degree to which they challenge DOE's conclusion. Based upon the contractor's analysis and the NRC staff's analysis and interpretations of the uncertainties existing at this time, the staff concluded that one could only state that travel times may be significantly closer to 1000 years than DOE stated. The contractor, based upon their assumptions, analysis, and their interpretation of the uncertainty, concluded that there is a significant likelihood that the site will fail the 1000 year requirement.

Questions concerning groundwater travel time at the Hanford site can only be resolved by collecting data and using it appropriately in models. This is the purpose of site characterization. The staff and all contractors agree that additional site characterization work is necessary and desirable. Additional hydrologic testing should be performed as soon as possible upon consultation with the NPC and prior to commencement of shaft sinking. The NRC and DOE have previously agreed upon a testing strategy for the Hanford site which has been documented in the NPC's Technical Position 1.1. Modification of this general testing strategy should include proven and accepted procedures for determining other hydrologic parameters that are crucial to determining groundwater travel time (such as effective porosity). Such a testing program, if performed appropriately, should yield data that would allow better

estimations of pre-placement groundwater travel time at the Hanford site as well as the data needed to begin addressing questions related to post waste emplacement groundwater flow and radionuclide transport.

It should be noted that the regulations provide the flexibility for consideration of lower groundwater travel times on a case by case basis. The reason for this is that groundwater travel time is but one of a number of critical parameters that must be analyzed individually and collectively during site characterization, and there is the potential that a site with a lower groundwater travel time may provide adequate waste isolation and meet all other NRC criteria as well as the EPA standard. In fact, the NRC contractor, who has questioned whether the Hanford site will exceed the 1000 year travel time has stated on a number of occasions that the Hanford site is a good site with respect to groundwater characteristics even if the travel time turns out to be relatively low.

In Situ Stress and Rock Instability

The NRC staff has long recognized the potential problems associated with high in situ stress and rock instability at the Hanford site. The significance of core diskings and its relationship to high in situ stress and rock bursting was pointed out to the DOE by NRC staff in a letter dated December 15, 1981. Since 1981 the NRC has raised many issues associated with high horizontal stress levels at the Hanford site. In November, 1983, the NRC participated in an Exploratory Shaft Test Plan Workshop at Hanford. Problems associated with high in situ stress were discussed with the DOE at this workshop.

Additionally, staff and contractor comments on the Exploratory Shaft Test Plan were transmitted to the DOE in a follow-up letter dated March 18, 1984 indicating that high in situ stress could present problems during exploratory shaft construction activities and recommending monitoring the liner throughout the testing period. In a May 22, 1984, letter the staff further emphasized their concern about constructibility of a repository and retrievability of waste canisters due to new evidence (spalling boreholes as seen in video tapes during a January 23-27, 1984 data review) indicating high horizontal stresses.

The staff have also been aware of the potential for rock instabilities at the Hanford site. Since rock bursting is associated with high stress conditions, the staff agrees that rock bursting may be present during construction at the Hanford site. However, it should be noted that the DOE has proposed mitigative measures to reduce the hazard associated with rock bursting. Furthermore, it is our understanding that the DOE has entered into a Memorandum of Understanding with MSHA which would give MSHA a specific role in inspecting the repository during construction and operation for compliance with their regulations.

In February, 1985, a report entitled, "Heat, high water and Rock Instability" by Dr. Arjun Makhijani and Kathleen B. Tucker with a supplement by Dr. Donald E. White (geologist) was published. The authors questioned the site selection process and the suitability of the Hanford site for technical reasons related primarily to the presence of high in situ stresses and rock instability (including rock bursting).

On May 30, 1986, the NRC Headquarters received a memorandum from NRC Region V regarding concerns of Mr. William Schiex (Petroleum Geologist) over DOE's continuing high-level waste repository investigations at Hanford. Mr. Schiex presented testimony at a public hearing on the Draft EA. His primary technical concerns were in the areas of rock characteristics.

On September 25, 1986, S. J. S. Parry (ACRS Fellow and Chemical Engineer) expressed concern that a marginal site is being investigated which may drop out of contention very quickly. He expressed the opinion that it will prove to be prohibitively dangerous or costly to develop the facility.

Robert Cook, NRC BWIP On-site representative, has expressed concern about the adequacy of the site based on in situ stress and rock instability. He believes the present location is undesirable compared to locations further away. Mr. Cook also raised concerns about the adequacy of MSHA controls in assuring worker safety.

As stated above, the staff has been aware for several years of the presence of core diskings and borehole wall spalling and recognizes the correlation between these phenomena and high horizontal stress and rock bursting. The NRC has investigated the concerns raised by the individuals referenced above and has not identified any new concerns that have not already been considered in the staff's evaluations of the issues. The NRC believes that a final resolution of the in situ stress and rock instability issues cannot be obtained without the construction of the exploratory shaft and underground site characterization.

Following a May, 1984 recommendation by the NRC staff that a peer review of the hydro-fracture test results should be performed, the DOE convened a panel of experts in 1985 to review the existing information related to the state of in situ stress at the Hanford site and make recommendations for further work. The conclusions reached by the panel of experts are similar to NRC staff's position including the determination that further test work will be necessary during site characterization in order to resolve the in situ stress issue.

The staff believes that the DOE now recognizes the need for this type of data. The DOE has proposed, in the draft Exploratory Shaft Test Plan, additional in situ stress testing during site characterization. Recent plans by DOE indicate that additional surface based testing as well as underground in situ testing will be performed during site characterization. Although a repository site with a lower horizontal stress field would be more desirable, existing data does not warrant changing the site location. Recent data provided by the DOE indicates that the magnitude of the horizontal stress field is comparable inside and outside of the Reference Repository Location.

Regarding the mining related issues that have been raised, DOE acknowledged in the Hanford final EA that construction at the Hanford site will cost approximately 20% more than the NMSS or the salt site. They also acknowledged the worker safety problems that are inherent to any mining operation. The final EA estimated that a repository constructed in basalt could result in 976 disabling injuries and 22 fatalities during the periods of construction and operation. The site comparison performed by the DOE

QUESTION 4. Why go forward with characterization of Hanford when there are so many questions about it?

ANSWER.

The Commission continues to consider that proper implementation of the siting guidelines by DOE should lead to the selection of suitable sites. In its review of the EA's, the staff have evaluated the technical questions that have been raised about the Hanford site. While the staff consider that these questions are major concerns which must be resolved during site characterization, none indicated that the Hanford site should not be characterized. Only through the collection and analysis of additional site data can the significance of the various concerns on overall repository performance and therefore site suitability be assessed.

More questions have been raised at the Hanford site than the other sites. This is likely due to the existence of more data for that site. In the early stages of collecting site-specific data, more concerns are often raised than previously known from more regional, non-site specific studies because of limitations in the amount and quality of this initial data. The purpose of site characterization is to gather the data needed to answer the questions.

ENCLOSURE 5

WASTE BOARD ISSUES

This enclosure provides the minutes of the Nuclear Waste Board meeting of September 18, 1987. This document provides information on the Waste Board's members and insight into the issues considered by the Board.

WARREN A. BISHOP
Chair



STATE OF WASHINGTON

NUCLEAR WASTE BOARD

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**MINUTES OF THE NUCLEAR WASTE BOARD MEETING
September 18, 1987**

1:30 p.m.

**EFSEC Hearings Room
Rowesix, Building #1
4224 Sixth Avenue S.E.
Lacey, Washington 98504**

Board Members Present:

**Warren A. Bishop, Chair
Senator Max Benitz
Curtis Eschels
Representative Shirley Hankins
Representative Louise Miller
Representative Dick Nelson
Senator Irving Newhouse
Representative Nancy Rust
Senator Lois J. Stratton
Richard Watson, State Energy Office
Senator Al Williams**

Board Designees/Alternate Designees Present:

**Ray Lasmanis, DNR Designee
Robert Mooney, DSHS Alternate Designee
Roger Stanley, Department of Ecology Designee**

Council Members Present

**Pam Behring
Phyllis Clausen
Nancy Hovis
Sam Reed
Commissioner Ken Miller
Betty Shreve
Michael Spranger
Shirley Tucker
Jim Worthington**

The September 18, 1987 Nuclear Waste Board meeting was called to order by Warren A. Bishop, Chair.

Introductory Remarks

Mr. Bishop introduced Ms. Shirley Tucker (West Richland, WA) as a newly appointed Advisory Council member. He then acknowledged Robert Mooney present at the day's meeting to represent Terry Strong, Department Social Health Services (DSHS).

Minutes

A motion for the approval of the August 21, 1987 Nuclear Waste Board minutes was entertained. The motion was moved, seconded and carried. The minutes were approved as published.

Correspondence/Recent Developments

Max Power reported on the following recent developments in regard to nuclear waste issues.

- Ben Rusche, U.S. Department of Energy, announced his resignation as Director of the Office of Civilian Radioactive Waste Management (OCRWM) to become a senior vice-president of a private engineering firm in Atlanta, Georgia. Deputy Director Charles Kay will become the Acting Director during the interim process of selecting a permanent Director for OCRWM.
- The state of Washington had previously made a request to USDOE concerning an extension of the 90-day review schedule of the Site Characterization Plan (SCP). USDOE had agreed to adjust the process of preparing the SCPs by first issuing "consultation draft" SCPs for all three sites in early January 1988. The USDOE will hold consultation workshops with

the states, tribes and NRC upon release of the draft documents. Comments and ideas will be obtained from the consultation meetings to assist the USDOE in its preparation of the SCPs. The SCPs will then be released and followed with a 90-day comment period and public hearings.

- A recent release of report language from the Senate Appropriations Committee reflected its recommendation that \$360,000,000 be provided for repository related activities from the Department of Energy's nuclear waste fund in FY 1988 (it was noted that the House Appropriations Committee had requested \$500,000,000). The Committee's recommendation intended to allow the Department to proceed toward construction of a monitored retrievable storage (MRS) facility, select a single candidate repository site for characterization, and provide incentive payments for a repository or MRS according to the provisions of Senator Johnston's earlier bill, S.839. If, however, Congress decided to continue along the current course and characterize three repository sites in parallel, significant additional resources would be required to carry out the program in FY 1988.

- The House Committee on Interior and Insular Affairs, Subcommittee on Energy and the Environment held a hearing on Congressman Udall's moratorium bill (H.R. 2888) and the revised moratorium bill with special negotiator (H.R. 2957). Terry Husseman, on behalf of Governor Gardner, presented testimony to the Subcommittee in support of the Udall legislation. The state of Washington was optimistic that H. R. 2888 and H.R. 2957

would provide an opportunity to put the site selection process onto the right track and develop a solution to the nation's nuclear waste disposal problem.

Several Congressional members and representatives from first- and second-round states were present at the hearing to provide their views to the moratorium approach. Governor Bryan of Nevada reiterated that the state of Nevada was not interested in hosting a repository. He spoke forcefully against the Johnston bill and in favor of the moratorium approach. A spokesperson for utilities endorsed the Johnston bill but noted support of the Udall negotiator proposal. The National Association of Regulatory Utility Commissioners (NARUC) did not take a position on the moratorium but noted that the management of the program was in need of redirection. A panel of governor representatives, including Washington, Texas, Tennessee and Maine, unanimously supported the Udall moratorium approach. In addition, a panel of affected Indian tribe representatives also supported the Udall bill.

The state of New Mexico's interest in the repository program has resulted in significant developments during the last few weeks. On September 4, 1987 the Business, Economic Development and Telecommunications Committee of the New Mexico legislature unanimously passed a resolution requesting USDOE to consider southeast New Mexico for the repository. (The state already hosts the Waste Isolation Pilot Project (WIPP) where future shipments of military transuranic waste may eventually be buried.) In addition, Governor Carruthers has indicated his sup-

port of having New Mexico studied as a waste repository site under the conditions that all safety and environmental standards and requirements could be met. On September 17, the Energy, Natural Resources and Extractive Industries Committee of the New Mexico legislature passed yet another resolution. It explicitly urged the Governor and the New Mexico Congressional delegation to support legislation that requires USDOE to select, by January 1, 1989, one site for characterization as a possible site for a high-level waste repository (Johnston-McClure Bill). Furthermore, it requested that the legislation be amended to allow a site in southeastern New Mexico to be added to the list of candidate sites for both the monitored retrievable storage (MRS) and the permanent high-level repository facility.

Representative Dick Nelson inquired if there would be enough volume within the WIPP location to accommodate both high-level and transuranic waste. Mr. Power responded that the existing WIPP site was limited by law to transuranic waste only. A separate site approximately 10 miles southeast of WIPP was being proposed as a possible repository site.

As reported during the August Board meeting, Congress had withheld \$79 million from the USDOE's FY 1987 appropriations pending certification of satisfactory progress in consultation and cooperation with the states and affected Indian tribes. The USDOE had submitted a C&C Certification Report to Congress indicating that progress had been made, thus requesting a release of the \$79 million. The state of Washington had also prepared a report on consultation and cooperation in which

concerns and recommendations to improve USDOE-state/tribal relations were noted.

An invitation had been extended to Mr. Ben Smith of the Tennessee State Planning Office to address the October meeting of the Board and Council on the subject of near-term storage of high-level nuclear waste. Mr. Smith has been asked to present information on Tennessee's analysis of the need for an MRS facility, experience as a candidate state, the feasibility of alternative storage options, and views on federal legislation to amend the NWPA.

Economic Baseline and Future Scenarios for Tri-Cities

John Petterson, Impact Assessment, Inc., presented a slide show that depicted various employment scenarios of the Tri-Cities area (Kennewick, Richland and Pasco) that could be expected with various defense waste, nuclear material production, and repository related activities. Upon completion of his presentation, Mr. Petterson called upon the Board and Council for questions or comments.

Representative Nelson inquired as to an MRS being included as a potential option to employment in the scenarios. Mr. Petterson responded that the first repository states could not be considered for an MRS under the current NWPA. However, if the Act were re-written it would be a viable option. Next, Representative Nelson asked if non-Hanford employment for the next 100 years had yet been projected. Mr. Petterson stated that graphs for tourism, agriculture, manufacturing and trade had been completed but it had been difficult to distinguish between portions of the economy that were Hanford related or non-Hanford related. Representative

Nelson inquired if relative comparisons would be done on the full life of the Hanford project including forty years of operations. Mr. Petterson confirmed that these types of comparisons would be performed.

Representative Hankins asked if a scenario had been done on a total statewide basis in regard to a complete shutdown of the N-reactor. Mr. Petterson commented there had not been a scenario done on this issue. Representative Hankins recommended that such a scenario be done, starting with the assumption that the N-reactor was down and employment consisted of safety enhancement personnel only. This would be followed by the next layer of permanent personnel lay-offs (to include scientists and staff). Discussion of various scenarios continued.

At the conclusion of the joint session of the meeting, appreciation was expressed to Mr. Petterson for his presentation of scenarios depicting the potential economic and community impacts on the Tri-Cities area. There being no further business, the meeting was adjourned and a recess of the Board and Council was called.

BREAK

The Board resumed and the meeting was called to order.

Mr. Bishop informed members that the Board and Council would be returning to the original format of separate sessions beginning in October. Special joint sessions would be held separate from the regularly scheduled Board and Council meetings.

Defense Waste Fees

Joe Stohr presented background information on the calculation of fees for the disposal of defense high-level nuclear waste.

On April 30, 1985, President Reagan made a decision to commingle defense high-level waste and commercial high-level waste into one repository. The NWPA of 1982 had anticipated this possibility and gave USDOE the authority to allocate costs for the development and operation of a repository system (Section 8 (b)(2) of the Act).

On July 29, 1986, the National Association of Regulatory Utility Commissioners (NARUC) passed a resolution in regard to disposal of defense high-level waste (DHLW) fees. In support of that action the Washington Nuclear Waste Board adopted Resolution 86-5 (September 19, 1986) which included the following NARUC provisions:

- *urged USDOE to allow all affected parties to participate in negotiated rulemaking to determine the formula*
- *urged provisions for interest on payments not yet made to the fund*
- *urged periodic financial reviews*
- *urged USDOE to follow mandate of the NWPA in determining amounts of defense waste to be disposed*
- *urged Congress to assiduously oversee USDOE on this matter.*

On December 2, 1986, the USDOE issued a Federal Register notice that contained three alternative

approaches for the calculation of DHLW charges. They were:

- Option 1: a fee that equals the total cost of disposing of defense high-level waste by OCRWM (*"full cost recovery using sharing formulas"*)
- Option 2: a fee based upon 1 mill per kilowatt-hour electric-generation equivalent for the defense reactor operations that produce these wastes (*"1-mill electric-generation equivalent fee"*)
- Option 3: a fee based on estimates of the costs of separate repository systems so that defense and civilian fees equal a fraction of the combined repository program costs which are the same as each sector's fraction of the sum of the evaluated costs for separate repository programs (*"cost shares proportional to avoided costs"*).

The public had been requested to submit written comments in response to USDOE's December notice of inquiry. In January 1987, the Nuclear Waste Board submitted comments that specifically addressed the process by which the fee-sharing formula was developed and a choice among the three optional methods presented for calculation of defense waste share costs. Representative Dick Nelson and Senator Al Williams also submitted comments that addressed: 1) exclusion or inclusion of certain specific costs; 2) timing of payments; and 3) assumption used in the appended "sample calculations".

On August 20, 1987, the Office of Civilian Radioactive Waste Man-

agement (OCRWM) published a Federal Register notice that set forth the methodology USDOE intends to use in its calculation of the DHLW disposal fees. The Department selected Option 1 ("full cost recovery using sharing formulas") as the preferred option because it seemed most consistent with the intent of the NWPA that both civilian and defense waste generators would pay their full shares of actual costs for the OCRWM disposal system.

NARUC Subcommittee on Nuclear Waste Disposal

Commissioner Richard D. Casad, Utilities and Transportation Commission reported that on September 9, 1987, NARUC had filed a petition with the U.S. Court of Appeals (District of Columbia). The petition requested a review of the Department's procedures in the establishment of defense program contributions to the repository program. It was directed at USDOE's rulemaking decision for methodology set forth in the formula used to allocate the cost of DHLW disposal fees. The cost analysis used to calculate the fee formula had been grouped into three categories: 1) assignable costs - costs are incurred solely for disposal of either civilian waste or defense high-level waste and are allocated in entirety to defense or civilian generators; 2) common variable costs - costs are allocated to both generators on the basis of cost sharing factors developed from physical parameters; and 3) common unassigned costs - costs are the remaining components of those which cannot be directly allocated or cannot be allocated based on the cost sharing factors. In closing, Mr. Casad welcomed support given by the Washington Nuclear Waste Board regarding NARUC's position and prosecution of that position.

Further discussion followed. Senator Al Williams inquired as to what actions the Board could take to support NARUC's position. Mr. Bishop commented that NARUC and the state of Washington had taken different positions in regard to USDOE's choice of options for developing a methodology. Mr. Stohr stated that prior to USDOE's December notice both groups had supported the negotiated rulemaking issue. However, the differences came about when Washington State identified Option 1 as the preferred option; NARUC chose to suggest an option that would look at cost sharing and deferred costs to be gained by not having two separate systems. Mr. Casad responded that NARUC's view of USDOE's adopted methodology for an allocation method was questionable in regard to meeting the mandate of the legislation.

U.S. Bureau of Mines Report

The U.S. Nuclear Regulatory Commission had previously requested the Bureau of Mines to do a study on the feasibility of sinking a shaft to the Cohasset flow at the Hanford site. Ernie Corp, of the Bureau's Spokane office, presented an update on the study. In review of different aspects of the Hanford site, the Bureau had concluded that technology existed to safely sink a 3,300 ft. shaft through the basaltic lava flows of the Pasco Basin. The largest problem that would confront the shaft sinking operation would be water control and would require advanced methods in shaft sinking and water control technology.

The major concerns noted in sinking a shaft at Hanford:

Water inflows - in terms of the water conditions, two methods of

shaft sinking appeared feasible:

1. Large-hole drilling: preferred method in terms of economics and safety, however it might limit the size of the shaft and the sinking method suitable for the exploratory shaft.
2. Conventional drill and blast with freezing and pregrouting: most common method used for large diameter shafts; freezing of the upper unconfined aquifer would probably be required.

High horizontal stress - zones of weak rock, fractured and brecciated pillow basalts; water pressure potentials of 1,400 psi could wash out causing ground instability; in addition, a high horizontal to vertical stress ratio (range of 2.3 to 2.7) had been cited as being indicative of rock bursting. However, Mr. Corp said that most rock failures were nonviolent and not classed as rock bursts; if bursting should become a problem, the rock could be drilled and fractured ahead of mining to relieve excessive stress buildup.

Litigation Status

Narda Pierce reported that the Court had scheduled an oral argument in State of Washington vs. Herrington (Challenge to Suspension of Second Repository) for October 9, 1987. Prebriefing conferences in EPI vs. Herrington (Siting Guidelines Cases and the 1986 Nuclear Waste Policy Act Cases) are scheduled for September 22, 1987.

On August 26, 1987, the Environmental Protection Agency (EPA) filed a motion for a rehearing (a motion to amend the

judgment in Natural Resources Defense Council vs. EPA). The EPA has requested the Court to reinstate portions of the environmental standards for storage and disposal of high-level nuclear waste which had not been found to be faulty. The agency argued that only individual protection and groundwater protection standards should be vacated and remanded.

Committee Reports

Hanford Historical Documents Review Committee: Curtis Eschels reported on the progress of the HHDRC during its August meeting. The committee and a group of technical advisers met to discuss the Dose Reconstruction Study and the criteria for the selection of the Technical Steering Panel (TSP). (The TSP was to be the sole source of technical direction for Battelle's Pacific Northwest Laboratories and others involved in the study.) A request for TSP nominees had been issued and a final selection of eight to twelve panel members would take place in October.

The committee also requested assistance from the Centers for Disease Control (CDC) to develop a Health Study Feasibility Review in which USDOE agreed to provide up to \$50,000. In addition, the Department agreed to fund additional health studies that are shown to be feasible and reasonable. The Health Study Feasibility Review is anticipated to be completed during 1988.

Environmental Monitoring Committee: In regard to the large volumes of high-level, transuranic, and low-level radioactive wastes and chemical wastes that have been stored on or discharged to soils at the Hanford Reservation, Resolution 87-9 was before the Board for its consideration. The recommendation addressed the issues of: the federal government's responsibility to provide for permanent disposal of wastes in

accordance with the NWPA, Resource Conservation and Recovery Act, and the Comprehensive Environmental Response Compensation and Liability Act; independent environmental monitoring and evaluation by the state and affected Indian tribes with respect to the Hanford reservation; extensive participation by the state in the regulatory process; and the need for accelerated characterization and monitoring of environmental radiation conditions. Extensive discussion ensued. A motion was made for the adoption of Resolution 87-9, as amended. The motion moved, seconded and carried. (See attached)

Socioeconomic Committee: Curt Eschels, Chair of the Socioeconomic Committee, reviewed a proposal formally received from a Spokane group of local governments to participate by a Memorandum of Agreement in the socioeconomic impact studies being conducted by the Nuclear Waste Board, with particular emphasis on the transportation impacts of nuclear waste. The Board moved to direct the staff to develop and finalize a Memorandum of Agreement with the Spokane area local government group in coordination with the Local Government Committee of the Nuclear Waste Advisory Council. The motion was carried.

Washington Institute for Public Policy

Dan Silver presented an update of recent WIPP activities. Eight legislative members of the Board would soon be traveling to Europe to meet with European high-level waste managers. There will be two tours in Richland, dealing with the geology of the area, on October 23. The Tri-Cities area will hold a session for legislators, similar to one held for Eastern Washington legislators, beginning October 25; WIPP will sponsor that part which is related to the Hanford reservation. The Institute will

also sponsor a conference for legislators in regard to the NWPA and future of the nuclear waste industry on December 2.

Other Business

- Resolution 87-7 was presented to the Board for approval. It expressed appreciation for the effort and guidance of all 1985-1987 Advisory Council members and also expressed sincere thanks to the outgoing Advisory Council members for their substantial and significant contributions to the nuclear waste program. The resolution was moved, seconded and carried. Resolution 87-7 was adopted unanimously. (See attached)
- Charles Roe presented an update of developments on the liability Price-Anderson front. The House had recently passed a compromise bill between three committees and was now referred to as the Udall-Sharp bill. It has a \$7 billion limit on liability from the nuclear waste fund and provides for Congressional development of payments above the liability limit. The Senate Energy Committee's version of the Price-Anderson bill has a 30 year life and increases the liability limit from \$500 million for DOE contractors to approximately \$6 billion. It was noted the bill dealt only with contractors and would have to be modified to include commercial reactor liability. There would be a new, expedited Congressional procedure established to cover amounts above the \$6 billion. The Senate Environment Committee's bill differs in view of a \$7 billion liability limit and continues to incorporate direct unlimited liability through an established judgment fund.

Currently, Section 114 of the Nuclear Waste Policy Act (NWPA) provides that after characterization of a suitable site DOE must go through a licensing process by filing an application with the Nuclear Regulatory Commission (NRC) for authorization to construct a repository. A judicial process would follow in which the NRC would rule upon its decision whether or not to authorize the repository construction. Mr. Roe reported that the issue of the licensing support system (LSS) and negotiated rule-making had been the topic of discussion in a meeting that had been held between state, utility, USDOE and other federal agency representatives. During that meeting, the NRC had proposed to meet on a monthly basis with 18 formally designated parties to negotiate on procedural rules in areas that dealt with the processing of an application for a licensed repository project. Updates of the meetings would be presented to the Board and Council as they occur.

- Mr. Eschels acknowledged that USDOE had agreed to provide a 7-day pre-notification on future shipments of unclassified shipments of spent nuclear fuel and high-level waste. The Department's advance notification procedures commenced on August 1, 1987.
- Representative Hankins commented on one of the top 100 technological developments of the year. Two scientists have developed a chemical process to remove transuranic elements from nuclear waste streams and won a prestigious IR-100 award for their efforts.

Public Comment

None.

Adjourn

There being no further business, the September 18, 1987, Nuclear Waste Board meeting was adjourned.

NUCLEAR WASTE BOARD

RESOLUTION 87-8

September 18, 1987

WHEREAS, the Nuclear Waste Advisory Council had diligently and wisely advised the Nuclear Waste Board regarding radioactive waste management and public involvement programs; and

WHEREAS, all members of the 1985-1987 Advisory Council are to be applauded for the many hours they contributed to planning, organizing, and implementing a major program to inform the public about issues which have far-reaching state and national implications; and

WHEREAS, thanks to the effort and thoughtful guidance of the Advisory Council, a successful public information and involvement program has been launched and communication with the state's local officials, organizations and citizens has been enhanced;

NOW THEREFORE BE IT RESOLVED, that the Nuclear Waste Board expresses sincere thanks to outgoing Council members Philip Bereano, Estella Leopold, Valoria Loveland and Terry Novak for their substantial and significant contributions to the state's nuclear waste management program; and

BE IT FURTHER RESOLVED, that the Nuclear Waste Board expresses its deep appreciation for the valuable contributions and dedicated service of William Sebero and Harry Batson.

Approved at Olympia this 18th day of September 1987.



**WARREN A. BISHOP, CHAIR
WASHINGTON STATE
NUCLEAR WASTE BOARD**

Washington State Nuclear Waste Board

Resolution 87-9

September 18, 1987

WHEREAS, large volumes of high-level, transuranic, and low-level radioactive wastes and chemical wastes associated therewith, have been temporarily stored on or discharged to soils of the Hanford Reservation in Washington State; and

WHEREAS, this accumulation of radioactive and associated chemical defense wastes results from U. S. Department of Energy nuclear defense operations; and

WHEREAS, the federal government has the responsibility to provide for permanent disposal of such wastes in accordance with the Nuclear Waste Policy Act, Resource Conservation and Recovery Act, and the Comprehensive Environmental Response Compensation and Liability Act; and

WHEREAS, the Nuclear Waste Policy Act requires independent environmental monitoring and evaluation by the state and affected Indian tribes with respect to the proposed nuclear waste repository on the Hanford Reservation; and

WHEREAS, the Clean Air Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Clean Water Act require extensive participation by the state in the regulatory process; and

WHEREAS, to establish an accurate environmental baseline requires fully characterized environmental conditions, taking into consideration the generation of defense wastes; and

WHEREAS, independent environmental monitoring to determine and verify the Hanford area baseline by the state and affected tribes is essential; and

WHEREAS, the continued generation of defense wastes creates a need for accelerated characterization and monitoring of environmental radiation conditions; and

WHEREAS, the resolution of all issues raised in the Defense Waste Draft Environmental Impact Statement (DEIS) is a high priority for the Nuclear Waste Board; and

WHEREAS, the federal government has worked closely with the state to resolve specific DEIS concerns; and

WHEREAS, the U. S. Department of Energy has committed to continue to work in good faith with the Nuclear Waste Board during the future decision making process involved with improved defense waste management; and

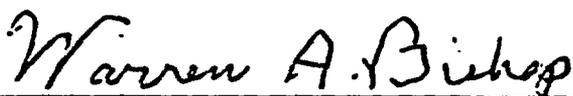
WHEREAS, Nuclear Waste Policy Act funding to Washington and the affected tribes is narrowly constrained to repository siting concerns; and

WHEREAS, Congress has not appropriated other funds for the purpose of state and tribal monitoring of defense waste activities at Hanford and for carrying out related regulatory activities.

NOW, THEREFORE, BE IT RESOLVED by the Washington State Nuclear Waste Board that

1. Funding for the improved management of existing defense wastes at Hanford should receive a high priority from the U. S. Congress.
2. Funding of state and tribal activities to assure their informed participation in waste management decision-making is a high priority as well.
3. Adequate funding must be provided now from the Nuclear Waste Fund and other USDOE sources in order to characterize the current radiological and chemical environment at Hanford and to monitor any future changes.
4. Congress should establish a mechanism to set aside money in the defense budget, including a "pay as you go" system, for the improved management of newly-generated radioactive, chemical, and mixed defense wastes on the Hanford Reservation.
5. The Board directs the Chair to transmit this Resolution to the Congressional delegation and appropriate persons in the U. S. Department of Energy, and to ask for their assistance on these issues.

Approved at Olympia this 18th day of September 1987.


WARREN A. BISHOP, CHAIR
WASHINGTON STATE
NUCLEAR WASTE BOARD

ENCLOSURE 6

CONGRESSIONAL ISSUES

Other than the materials provided in the previous enclosures, no other Congressional Issues have been identified in relation to the Hanford, Washington Site.

PROPOSED AGENDA
COMMISSIONER CARR'S VISIT TO HANFORD, WASHINGTON
NOVEMBER 18, 1987

- 7:15 - 7:30 R. Cook meets Commissioner Carr at Hotel and transports to DOE
- 7:30 - 8:15 Briefing by M. Lawrence, DOE on HLW Activities at Hanford
- 8:15 - 12:00 Tour of Hanford Site with R. Cook
- 8:15 - 8:45 Travel to Rattlesnake Mountain
- 8:45 - 9:00 Aerial overview of Hanford Reservation from Rattlesnake Mountain
- 9:00 - 9:50 Travel to Exploratory Shaft (ES) with stop to observe drilling of DC-24
- 9:50 - 10:40 Tour Main Shaft, Big Rig, and view videos of boreholes (tour conducted by DOE)
- 10:40 - 11:00 Travel to Core Library
- 11:00 - 12:00 Tour Core Library and Waste Package Development Area (tour conducted by DOE)
- 12:00 - 3:00 DOE Presentations and Tours
- 12:00 - 1:15 Defense Waste Management Briefing and Lunch (by DOE)
- 1:15 - 1:45 Travel to Near Surface Test Facility (NSTF)
- 1:45 - 2:30 Tour NSTF (by DOE)
- 2:30 - 3:15 Travel to Richland
- 3:15 - 5:00 Meeting with Tribes at NRC office
- 5:00 - 5:15 Transported to Hotel by R. Cook