

WM Record File

101.2

WM Project 3

Docket No.

PDR

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3101.4/RRB/83/01/11/0

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PDR

WMHL: WM-10
3101.4

101.2

Mr. O. L. Olson, Project Manager
 BWI Project Office
 Richland Operations Office
 U. S. Department of Energy
 P. O. Box 550
 Richland, WA 99352

Dear Mr. Olson

Attached is a copy of a letter (Enclosure 1) which the U. S. Nuclear Regulatory Commission (NRC) received from Mr. Russell Jim of the Yakima Indian Nation. In his letter, Mr. Jim requested information on the site characterization activities at the Hanford Reservation.

On January 10, 1983, the NRC provided a response to Mr. Jim's request. Enclosure 2 is a copy of our response.

We are forwarding this correspondence to you so that you can provide Mr. Jim with any additional information that you might have on this matter that you believe is appropriate.

Sincerely,

Robert J. Wright
 Senior Technical Advisor
 High-Level Waste Technical
 Development Branch
 Division of Waste Management

Enclosures:
 As stated

cc: Russell Jim

End in file

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NAME	: RRBoyle: lmc	: MJBell	: RJWright	: HJMiller	: JOBunting	:
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CONFEDERATED TRIBES AND BANDS

Yakima Indian Nation

YAKIMA NATION
POST OFFICE BOX 151
TOPPENISH, WASHINGTON 98948

November 23, 1982

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NRC

ATTENTION: JOE BUNTING

Mail Stop 623 S.S.
Washington, D.C. 20555

Dear Joe:

As an opening to our promised dialogue, we have five questions which are rooted in your presentation and your response to questions on November 16, 1982, in our Tribal Offices.

1. What information does NRC have that demonstrates that DOE has looked elsewhere to compare the relative advantages of the basalt at Hanford to the basalt off the Hanford Reservation?
2. Is NRC, or, has NRC, required DOE to look elsewhere? If not, why not? If not, then why is NRC and DOE focusing on the site on the Hanford Reservation?
3. Please give us a good map that outlines the basalt formations in the U.S.
4. Give us the thickness measurements of our local basalt in locations other than Pasco, WA.
5. Please supply us, and explain geologists' analyses that demonstrate why NRC and DOE believe that the basalt at Hanford is the best compared to elsewhere in the same formation. Please include raw geologic data.

We wish the above questions to be answered in two ways:

- so that the gist of the answers may be understood by a layman;
- so that the answers will have sufficient technical and scientific documentation so that scientists in the field will consider that your answers covered the situation completely.

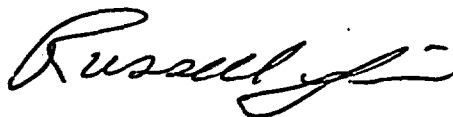
Wherever there are lacunae in our present state of knowledge, be sure you indicate same.

Mr. Joe Bunting
Page 2
November 23, 1982

You should understand that asking the above questions in no way implies that there will not be additional questions stemming from the November 16th meeting.

We also look forward to receiving the copy you promised of SECY-82-427.

Sincerely,

A handwritten signature in cursive script, appearing to read "Russell Jim".

Russell Jim
Yakima Tribal Council

RJ/is



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

JAN 10 1983

WMHL: WM-10
3101.4

Mr. Russell Jim
Yakima Tribal Council
Confederated Tribes and Bands
Yakima Indian Nation
P. O. Box 151
Toppenish, Washington 98948

Dear Mr. Jim:

This is in response to your letter dated November 23, 1982. In your letter you requested that the U. S. Nuclear Regulatory Commission (NRC) respond to several questions regarding the Hanford Reservation. It should be noted that the NRC has not concluded that the basalt underlying the Hanford Reservation is better than the basalts that lie elsewhere in the same formation. Our regulations governing the disposal of high-level radioactive wastes (10 CFR 60) require that the U. S. Department of Energy (DOE) submit to NRC a Site Characterization Report which includes, among other things, the method by which DOE selected a particular site for characterization.

As you are aware, the DOE submitted a Site Characterization Report to the NRC on November 12, 1982. DOE has stated that the Site Characterization Report provides documentation for the technical questions that have been identified at the site and the plans for resolving them through further site studies. They further note that the document describes the site to be characterized, provides information on the site screening and selection process, and describes the repository design, waste package research and development, and quality assurance efforts. Finally, the document summarizes the alternative geologic media and sites under investigation in the National Waste Terminal Storage Program. Chapter 2 of the Site Characterization Report discusses the site selection process that led DOE to the repository location at the Hanford Reservation.

The NRC staff is currently reviewing the content of the Site Characterization Report. Upon the completion of this staff review, the Director of NRC's Office of Nuclear Material Safety and Safeguards will

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prepare a Draft Site Characterization Analysis of the information provided in the Site Characterization Report. Public comment will be invited on the Draft Site Characterization Analysis. Our current schedule for issuing the Draft Site Characterization Analysis indicates that it will be available in April, 1983.

Even though our Draft Site Characterization Analysis will not be issued until April, 1983, I will attempt to respond to each of your questions.

Question No. 1: What information does NRC have that demonstrates that DOE has looked elsewhere to compare the relative advantages of the basalt at Hanford to the basalt off the Hanford Reservation?

Response: The only information that we have concerning the efforts of DOE to evaluate the relative advantages of basalt at Hanford to the basalts elsewhere in the United States is that which is contained in the Site Characterization Report and the supporting documents cited in the Site Characterization Report.

Question No. 2: Is NRC, or, has NRC, required DOE to look elsewhere? If not, why not? If not, then why is NRC and DOE focusing on the site on the Hanford Reservation?

Response: The NRC requires that DOE characterize several sites. The NRC believes that characterization of several sites will prevent a premature commitment by DOE to a particular site and will assure that DOE's preferred site is chosen from a slate of candidate sites that are among the best that can reasonably be found. (It should be noted that the Site Characterization Report for the Basalt Waste Isolation Project (BWIP) is only the first of several Site Characterization Reports that the NRC expects to receive from the DOE over the next several years.)

Section 60.11(a) of 10 CFR 60 describes the information that must be contained in a Site Characterization Report. One of the requirements of this section is that DOE describe "the method by which the site was selected for site characterization." Our draft Site Characterization Analysis will include an assessment of the adequacy of DOE's Site Characterization Report in terms of meeting this requirement.

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Question No. 3: Please give us a good map that outlines the basalt formations in the U.S.

Response: Many geologic factors would have to be taken into account in developing a map of basalt formations. Among these are the chemical and physical properties of the rock, the extent of the formation, and the reliability of the existing data. DOE has included a map of certain basalt flows in a recent environmental impact statement (Management of Commercially Generated Radioactive Waste, Final Environmental Impact Statement, DOE/EIS-0046F, Volume 2, October, 1980). I have attached a copy of the map but it should be noted that other presentations of basalt flows could be made as well.

Question No. 4: Give us the thickness measurements of our local basalt in locations other than Pasco, WA.

Response: Any information that the NRC would have on this subject would be that which is contained in the Site Characterization Report and its supporting documents. Most of the information related to your questions would be contained in Chapter 3 on geology.

Question No. 5: Please supply us, and explain geologists' analyses that demonstrate why NRC and DOE believe that the basalt at Hanford is the best compared to elsewhere in the same formation. Please include raw geologic data.

Response: As stated earlier in this letter, the NRC has not concluded that the basalt underlying the Hanford Reservation is better than the basalts that lie elsewhere in the same formation. As indicated above, our review has not yet been completed. However, I would add that under our regulations, DOE is not necessarily required to demonstrate that the geologic characteristics of a site are superior to those elsewhere in the same formation. Other non-geological factors may be considered in the site selection process to assure that the slate of candidate sites selected are among the best that reasonably can be found.

The U. S. Congress recently passed a Nuclear Waste Bill which has not yet been signed by the President. The NRC staff is currently reviewing this legislation to determine what effect it might have on our review procedures.

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I have forwarded a copy of your letter to the Department of Energy for their consideration. I have also enclosed a copy of SECY-82-427 which you requested in your letter. If you should need any further clarification on these matters, please do not hesitate to contact me.

Sincerely,

Original Signed By:

Joseph O. Bunting, Chief
Licensing Process and
Integration Branch
Division of Waste Management

Enclosures:
As stated

FINAL

ENVIRONMENTAL IMPACT STATEMENT

**Management of
Commercially Generated
Radioactive Waste**

**Volume 2
Appendices**



October 1980

**U.S. Department of Energy
Assistant Secretary for Nuclear Energy
Office of Nuclear Waste Management
Washington, D.C. 20545**

B.6.4 Basalt Properties

Terrestrial basalt flows are considered here to be applicable to conventional geologic disposal. Basalt is a black to medium gray, extrusive volcanic mafic rock (high in magnesium rock silicates) with the major mineral component calcic plagioclase (usually as phenocrysts) olivine and accessory minerals of magnetite, chlorite, sericite, and hematite (Office of Waste Isolation 1978e, Holmes 1978). The texture of a basalt may be either glassy or granular. Generally, basalt flows have a large areal extent. The locations of potential basalt repository areas are illustrated in Figure B.6.4. The basalts of southeastern Idaho are not considered because of high permeability features such as the Lost River and known large open lava tubes.

Basalt is commonly a very dense, high-strength material. Consequently, porosity and permeability are favorably low, with negligible moisture content, although interflow sedimentary units may be more permeable. Basalts remain relatively strong under elevated temperatures but may exhibit expansion. An average chemical composition of basalt is included Table B.6.2. More data are needed about basalt-waste reactions under repository conditions.

Joints are generally platy or columnar. They may be filled with various secondary minerals, alteration or weathering products of basalt. Joints may be unopened or opened with wide spacing (~ 0.3 - 1.8 m) and be smooth to rough. Joints in basalt may be extensive. They are generally unfavorable because of their potential for high permeability and ground water flow.

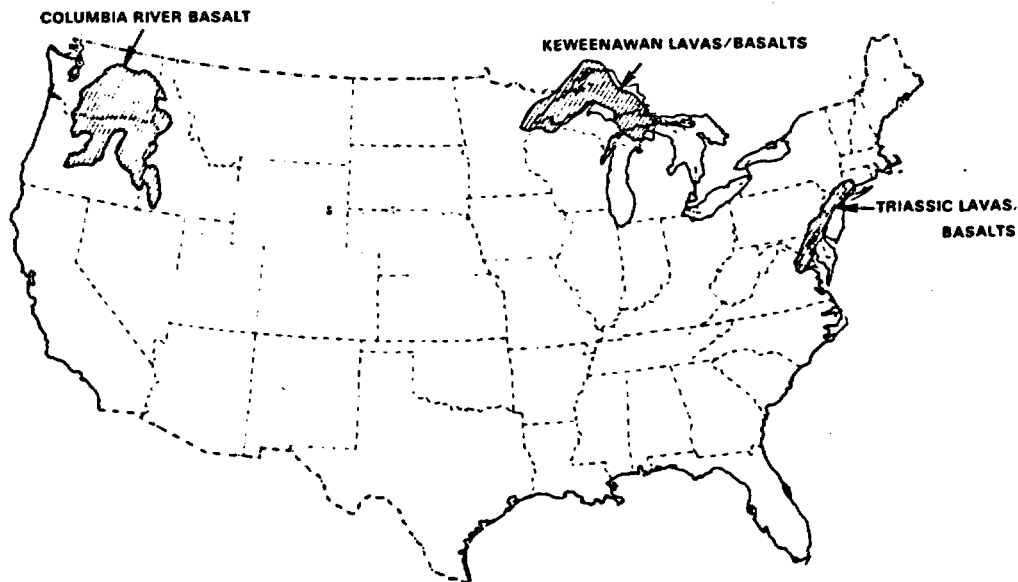


FIGURE B.6.4. Potential Repository Basalts in the United States (adapted from Office of Waste Isolation 1978a, Dott and Batten 1971)

October 21, 1982



SECY-82-427

RULEMAKING ISSUE

(Notation Vote)

For: The Commissioners

From: William J. Dircks
Executive Director for Operations

Subject: COMMISSION OPTIONS ON DEVELOPING FINAL TECHNICAL CRITERIA
FOR DISPOSAL OF HIGH-LEVEL WASTE IN GEOLOGIC REPOSITORIES

Purpose: The purpose of this paper is to advise the Commission of an issue that has arisen in developing the final HLW rule as a result of the absence of an EPA standard, and to seek the Commission's guidance on how to proceed.

Discussion: The NRC staff has been developing its licensing criteria for geologic disposal of HLW for several years. An Advance Notice of Proposed Rulemaking was published for comment in May 1980, and a Proposed Rule was noticed for comment in July 1981. Throughout this period publication of a proposed EPA standard for HLW disposal was believed to be imminent. EPA was also expected to have taken the lead in preparing an Environmental Impact Statement on the environmental radiological effects of its proposed standard. Accordingly, to avoid duplication of effort, and at EPA's suggestion, the NRC environmental appraisal which accompanies Part 60 does not consider the radiological effects of the performance objectives. Neither the EPA standard nor the EIS have yet been published. The proposed standard has been under review by OMB for about nine months. No decision is yet available on a date for issuance of the EPA standard.

A number of commenters on the proposed rule questioned the numerical performance objectives NRC had proposed and how they related to the standard EPA was developing. The NRC

Contact:
M. J. Bell, NMSS
427-4612

staff attempted to address these issues in developing the final rule by adopting as an overall performance objective a working draft EPA standard that was referenced by several of the commenters on the proposed rule. The staff then analyzed the performance of model repositories in several geologic media of interest and demonstrated how the proposed NRC numerical criteria contributed to ensuring that the working draft EPA standard was met.

Because the final EPA standard might differ from the draft used for the analysis, the staff made provisions to allow for DOE to propose alternatives to the numerical performance objectives for the individual barriers, provided the final EPA standard were met.

While the staff considered this technical approach reasonable in light of the continued delay by EPA, we want to bring a policy question to the attention of the Commission.

Continuing to follow the course we are on to finalize Part 60 in the absence of an EPA standard is likely to subject the agency to considerable criticism, both from the public and the Congress. We would end up taking the blame for EPA's failure to perform. In fact, we would divert much of the attention away from where it belongs -- on EPA and OMB. When EPA finally does issue its standard, we would need to review the rule in any event, and revise it, if needed. There may be little to be gained from finalizing the numerical criteria in question and much to lose. Therefore, we are proposing several options for the Commission's consideration:

Option 1 - Finalize the rule except for the numerical subsystem performance objectives for the engineered barrier system. These two performance objectives, for the waste package containment time and the release rate from the engineered barrier system, are closely linked to providing confidence that the EPA standard would be met. They would be reserved until after EPA publishes an effective standard.

Option 2 - Finalize the rule except for the numerical performance objectives for the waste package containment time and the release rate from the engineered barrier system. These two numbers would be reserved as in Option 1, but we would request public comment on how to proceed in the absence of an EPA standard.

Option 3 - Finalize the rule including the two performance objectives for the engineered barrier system and state that we will review the performance objectives after the EPA standard is issued and revise them in a subsequent rulemaking, if necessary. This is the path we have been on.

Option 4 - Leave the entire rule in proposed form until the EPA standard is issued.

Option 5 - Re-notice the rule described under Option 3 and in SECY-82-288.

Analysis of Options

Option 1 - This option has the advantage of getting most of the rule in place so that it would be available to guide the National Program over the next several years while DOE is conducting site characterization. It also focuses attention on the absence of the EPA standard and avoids putting the NRC ahead of EPA in the eyes of Congress and the public. When the EPA finally promulgates its standard, we should be able to finalize the performance objectives relatively quickly. We expect this option would require the least staff resources.

Option 2 - This option is similar to Option 1 in that it allows the rule to be finalized except for the two numerical performance objectives for containment and controlled release, but it allows for public comment on where we are and how to proceed. It has the advantage of allowing public input to the decision-making process, and increasing public awareness of the implications of the absence of the EPA standard.

If the Commission selected this option, we would request public comment on the approach of reserving the two numerical performance objectives until the EPA standard is published versus the approach of finalizing the numerical performance objectives and relying on the flexibility provisions that have been included in the final rule to accommodate changes in the EPA standard.

Also, in the notice of proposed rulemaking for the technical criteria, we stated that additional criteria might be developed for regulating disposal in the unsaturated zone. The staff has now done so, and would need to request public comment on proposed criteria for disposal in the unsaturated zone, in any event. For efficiency, we would combine these requests for comment with the notice of publication of the final technical criteria.

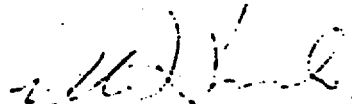
Option 3 - Under this option, we would publish the final rule, including the numerical performance objectives for the engineered barrier system. While this approach would put the entire NRC regulatory framework in place, it has the disadvantages noted above.

Option 4 - Under this option the DOE program to select sites for characterization and to carry out site characterization would proceed without either the EPA standard or the NRC criteria in place to provide direction. This option could put considerable pressure on EPA to get its standard issued, but at the price of public perception that the federal government can't perform. DOE staff have informed the NRC staff that they need the rule in place to focus their program.

Option 5 - Under this option we would re-notice the technical criteria as revised in light of public comment received on the proposed technical criteria. This would allow the prominence of the technical criteria-- and, hence, their utility as guidance--to be preserved; and the relationship between the technical criteria and the draft EPA standard, referenced in public comment on the proposed rule, to be reviewed by the public. It would flag to Congress and the public the absence of and need for an EPA

standard. This approach would have the disadvantages of delaying issuance of final technical criteria, of requiring further expenditure of staff resources to finalize them, and of perhaps appearing to be ahead of EPA in the eyes of Congress and public.

Recommendation: That the Commission approve Option 2.


William J. Dircks
Executive Director
for Operations

Contact:
M. J. Bell, WMHL
427-4612

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Friday, November 5, 1982.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Friday, October 29, 1982, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of, when comments may be expected.

This paper is tentatively scheduled for discussion at an Open Meeting during the Week of November 1, 1982. Please refer to the appropriate Weekly Commission Schedule, when published, for a specific date and time.

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