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NUCLEAR REGULATORY COMMISSION

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MEMORANDUM:

Robert E. Browning, Director
Division of Waste Management

FROM:

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

SUBJECT:

OBSERVATIONS, COMMENTS AND RECOMMENDATIONS
FOR THE PERIOD JANUARY 11 THROUGH FEBRUARY 21, 1986

TECHNICAL ITEMS

1. Waste Package--

a. Rockwell recently completed a "progress Report on Hydrothermal Interaction of Defense Waste Glass with Basalt and Groundwater at 150 degrees C," SD-BWI-TI-312. In addition new short term corrosion test data on low carbon steel and copper-base materials have just been collected and are being analyzed.

b. A document "Waste Package Preliminary Reliability Analysis Report," SD-BWI-TI-257, has been completed and submitted for internal RHO review. I will attempt to obtain this document through DOE and forward it for Staff's information.

c. Rockwell completed reviews of the Materials Review Board Ad Hoc Corrosion Panel report and the Brookhaven National Laboratory's report on RHO's waste package strategy. Written responses to these two reports now exist. I have requested copies of these responses as well as the Brookhaven comments for Staff's information.

d. Westinghouse Hanford Corporation (WHC) has been selected to produce the Waste Package Qualification Testing Engineering Plan. PNL will provide support. This appears to be a significant assignment of technical planning responsibility to a second level contractor. This area warrants careful review in future waste package workshops to assure coordination among the various groups creating the design, including accomplishment of R&D, from DOE (RHO'S) through DOE (RL), Rockwell, Westinghouse, to PNL and others actually accomplishing R&D, is achieved with appropriate interfaces documented and functioning. This area of design control will be necessary to assure a quality waste package design which complements other barriers in the disposal system and takes into account synergistic interactions.

In my opinion the organizational controls for the BWIP Project, considering the numbers of organizations participating and the complexity of the task, are and will continue to be insufficient to

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produce an adequate waste package design. Design activities (in particular R&D given its unique and new characteristics) involving more than three levels in organizational hierarchy--each succeeding level of which is subject to contractual controls and corresponding control interfaces--are inexpedient and likely to fail. The BWIP Project hierarchy appears to be planning on five and probably six levels, each of which is subject to passed-down contractual requirements and associated passed-up products for review and modification as a result of review. This issue should be addressed in a management meeting with DOE and in the context of organizational structures addressed in the review of DOE's quality assurance program.

Although the example above is associated with the apparent problematic management/organizational configuration for waste package design activities, other geologic repository design work for BWIP suffers from similarly complex management/organizational structures. Discussions with DOE and RHO personnel concerning the problem indicate an understanding of the problem, but an inability, because of lack of authority, to resolve the problem.

2. Repository Design/Engineering--

a. The BWIP Project is continuing to prepare an exploratory shaft conceptual design that provides flexibility to handle potential large water inflow rates and gassy mine conditions. Also since the scope of underground testing and schedules for completion of tests effect the numbers of workers that are needed, options in the conceptual design which consider various numbers of workers are being prepared. These characteristics of the exploratory shaft and underground testing area which will influence the quality and sufficiency of the site exploration data obtainable in the time allotted for testing should be of interest to Staff and considered in forthcoming workshops.

b. Engineering Study #11, Report of the Development of Liner Design Analysis Methodology and Acceptance Criteria," has been completed and should be available to Staff. I have requested a copy.

c. Attachment B provides a current schedule for key activities in the repository /exploratory shaft area. The earliest date for beginning the first shaft appears now to be July 1987, assuming the site is selected for characterization.

d. A ninety percent design review of the "advanced conceptual design" is scheduled for early in March. I intend to attend this meeting. The initial position of DOE was that this is a closed meeting and that my attendance would not be allowed. However, upon raising the item to DOE management (Anttonen) the meeting status was changed to "open".

3. Geology--

a. The first of four boreholes is being drilled west of the Cold Creek Syncline in order to better identify the location of the syncline axis for the purpose of repository configuration and layout during the conceptual design phase. In addition, the information will be used to better interpret gravity data which apparently suggests that the syncline may be in a location south and west of the location suggested by existing data from boreholes. The holes which are designated by the prefix DH are to be drilled to the top of the basalt

or to the Rattlesnake Ridge Interbed. There is no test plan which pertains to these holes to my knowledge.

b. The earthquake that I reported in my December 16, 1986 memorandum was followed by additional events in the same approximate location, but at varying depths and up to a 1.8 magnitude as calculated by the BWIP projects unique technique. Additional events recently occurred on the Yakima Ridge about 6 miles to the West of the RRL. Both areas are continuing to be active as of the writing of this report. They were discussed in some detail in a telephone conversation among NRC, RHO and DOE representatives on February 25, 1986.

The same area to the south of the RRL was the location of events which occurred in 1979 and were recorded on the State's seismic network over a period of about 6 months. It would appear that the Yakima Ridge structure, which is not expressed at the surface, is a seismically active structure. Since the structure may also provide a vertical mixing zone for groundwater in the basalt, the exact location of the swarm (depths as well as areal extent) is important to determine.

c. An assessment of magneto-telluric data pertinent to the site has been completed and is contained in SA-BWI-TI-233, a copy of which I have requested from DOE.

d. The core samples from the RRL-17 hole at the northeast corner of the current location for the proposed geologic repository operations area indicate a fracture zone in the dense interior of the Rocky Cooley Flow. The fractures appeared to have virtually no filling with secondary minerals. This condition suggests a potentially young fracture zone. I do not have information on the Cohasset Flow core samples.

Core drilling at DC-18 is also progressing, although slowly since water is being used as the drilling medium. I am informed that the depth of various flows and interbeds in the Wanapum Basalts was not as expected, based on nearby boreholes.

I recommend that Staff contact RHO via telephone to discuss current information collected from RRL-17 and DC-18.

4. Performance Assessment--

a. RHO has completed a technical report on the MAGNUM-3D code. I have requested this document for the Staff's information and review.

b. Performance allocation for structures, systems, components, including barriers, for the pre-closure period of the geologic repository appears to date not to have been considered in preparing the conceptual design for the geologic repository operations area. The pre-closure functional requirements for barriers seems to be an area of uncertainty. Whether such barriers, for example, the waste packages, are considered part of the geologic repository operations area conceptual design and "important to safety" as well as important to "isolation" is not clearly resolved. For example, the role the waste packages play during the operational phase to keep radioactive materials out of the mine's atmosphere and the drainage system appears merely to be a given and not necessarily "important to safety" or worker radiological safety. The Staff should assure that the

allocation of performance requirements relative to pre-closure and post-closure release limits and public exposure, including worker exposure, are identified. If not already an agenda item for future workshops, it should be added to such agendas.

5. Geochemistry--

a. Planning and the actual accomplishment of hydrochemical testing in conjunction with physical hydrology testing is progressing rapidly. Testing from DC-23GR during the drilling operations is being accomplished. down-hole samplers are working as planned. However the reaction of copper sampling tubes with sulfur in the groundwater is evident and may interfere with interpreting the actual groundwater chemistry. The development work at DC-23GR is in way of perfecting sampling procedures, equipment and implementing effective QC. Cleanliness and material controls on the equipment contacting groundwater samples and subsequent sample control during analyses may be an area which needs further development. This area could be addressed at the next workshop involving geochemistry.

6. Hydrology--

a. Drilling operations at RRL-17 included about a 6500 gal. mud loss in the Cohasset and GR#5 (Brickette) flow tops. Drilling at RRL-17 is now complete. It was reported that responses were seen at RRL-2 but not at DC-20 during the mud loss. I am attempting to obtain the head measurements at the two locations to confirm the responses that were observed. I will forward these upon receipt.

7. Quality Assurance--

a. BWIP recently issued their BWIP Quality Assurance Requirements Document, BQUARD. Staff should be receiving a control copy for their use.

MISCELLANEOUS ITEMS

a. I am in the process of reviewing and commenting on the Generic Technical Position, "Configuration Management for Conceptual Designs". Attachment A includes comments on definitions of terms in this and other technical positions. These definitions are key in understanding the rhetoric in these documents as well as other Staff communications. Several of the terms "verification" and "validation" have been defined in staff technical positions in the past, however the existing definitions are too narrow to be consistent with common usage. Other terms, for example "safety-related" and "conceptual design" mean different things to different people and their usage, without definition, confuses the reader and leads to inconsistent implementation of the guidance which we intend. A draft of these definitions was forwarded to Kennedy by separate correspondence.

Other comments on the technical position discussed above will follow in separate correspondence.

b. I attended the Washington State Waste Board and Waste Advisory Council meetings on February 20 and 21, 1986. Issues raised at these meetings were discussed with Staff in telephone conversations and/or

forwarded separately. A significant item that I learned at the meetings is that the State believes that a NRC license per 10CFR110 may be required for handling the spent fuel from a foreign reactor and has asked DOE for their license. A letter from Governor Gardner to the Secretary of DOE, Herrington, dated February 7, 1986, forwarded separately is pertinent to this item.

DOE indicated a generic EA has been prepared by NRC for the transfer cask to be used in the transport of the fuel. This was in response to the item in the Governor's letter which requested an environmental assessment concerning the transportation of the spent fuel. As the letter indicated, the State considers the old EA's may not be applicable to this particular shipment.

c. Dan Saltzman, who is vice chairman of the Oregon Hanford Public Advisory Committee, made a statement to the Washington Nuclear Waste Advisory Council, during the meeting noted in "b" above. This statement is included as Attachment C. Of note is the Oregon Governor's concern, echoed by the Washington Advisory Council members, regarding NRC/DOE meetings in Washington D.C. As can be noted in Saltzman's statement, Oregon considers additional meetings should be held in the Northwest--at least 1 per month.

d. I continue to be unable to obtain various information which would be pertinent to Staff's cognizance of planning and activities at BWIP. The most recent denials of DOE are identified in Attachment D. I consider their refusal to provide the requested information is inconsistent with expedient resolution of issues and the spirit and letter of NRC/DOE agreements, including Appendix 7 agreements. I recommend that this issue be taken up with DOE management with a request for reform in DOE/RL's performance. I have discussed this issue with DOE/RL (Anttonen) with no positive results.

e. Concerning Appendix 7 Agreements, DOE/RL still has not forwarded the Agreements to their contractors and subcontractors. As a result, RHO and other contractors are in doubt as to how to interact with me, this being nearly 9 months after the agreement was made. In this regard I recently had the Director of BWIP (Fitch) state to me that he was receiving 30 to 40 inquiries a week as to how to interact with the OR. I doubted his estimate of the numbers, but he insisted the estimate was accurate. I notified DOE (Mecca) of this BWIP situation, hoping that it would expedite RL's action.



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

Attachments as stated.

cf:

JOBunting	JJLinehan	MRKnapp	JMHoffman	JTGreeves
PHildenbrand	PTPrestholt	TRVerma	FRCook	ACGiarratana
OLOlson				

ATTACHMENT A: COMMENTS ON DRAFT STAFF TECHNICAL POSITIONS

Generic Technical Position on Configuration Management for Conceptual Designs

1. The following changes in the definitions of terms are intended to provide definitions consistent with, or as possible, identical to, usage in applicable laws, rules, standards and other related government specifications and orders. Where definitions of additional terms will make the document more precise and understandable they are added. A comment on the origin of the definition is included and reasons for specific changes or additions are noted.

I recommend establishing a glossary of terms which are used in our technical positions and that the various technical positions refer to that glossary or include it as a standard appendix for easy reference by users. Such action will help assure coordination of the usage of the terms among the various staff authoring or changing technical positions as well. Two such glossaries exist in the generic technical positions on Design Information Needs in the Site Characterization Plan and Licensing Assessment Methodology for HLW Geologic Repositories.

a. The term CONCEPTUAL DESIGN with reference to natural or engineered structures, systems and/or components, including barriers and facilities, (items) means the part of design documented at the initial stages of a project and needed to (1) justify plans for accomplishing research and development, including site characterization, pertinent to the item(s) conceptualized to accomplish specified functional goals, objectives and requirements, and (2) justify existing design procedures validated for application to the conceptualized item(s).

DISCUSSION:

In major projects with a R&D phase, a construction phase and an operation phase, intended to meet specified goals and subject to allocation of funds for each phase, a conceptual design is called for to provide bases for an estimate for the funding needed to accomplish the R&D as well as a technical basis for the R&D plans themselves. (Other purposes not tied to the planning of R&D, for example, determination of potential environmental impacts, may also be associated with information contained in conceptual design.)

DOE uses the term in this context when providing the basis for "Title I" project funds, upon which Congressional controls are generally placed. This scheme for control is described in the DOE Order for project management, Attachment A, although the designation for the appropriate funds, i.e., Title I, Title II, etc. is not explicitly linked to the phases of the project. Post R&D activities are authorized once the feasibility of a project is established by R&D, and the scope of the subsequent construction phase can with confidence be defined and costs estimated. The information called for to justify funding for R&D for a geologic repository is in major

part the information required by Part 60 at the start of site characterization.

As can be seen by the use of terms in the above definition and in the definitions which follow, site characterization is a subset of activities included within the set of activities covered by the term R&D.

Project feasibility includes demonstration of the practicability of fabrication techniques for conceptualized structures, systems and components and the identification of all procedures (sometimes called design procedures) necessary for assessing the performance of structures, systems and components, including barriers and facilities, relative to specified functional goals, objectives and requirements. When procedures exist and are validated for the intended application, for example, in the form of codes and standards and validated computer programs, conceptual design includes such information and, thus, delimits the scope of necessary R&D activities.

NWPA [SEC. 113 (b)(1)(C)] and 10CFR60.11 (a)(6)(ii) in connection with site characterization require conceptual designs of a "repository" and a "geologic repository operations area" respectively. (See definitions of these terms in the law and the rule respectively.) As can be seen from the definitions, there is a difference in the required conceptual designs, with the scope of the "repository" conceptual design potentially being greater than that required by 60.11 by including the geologic setting, the seals and the other engineered barriers, for example, the waste packages, not included in the definition of the geologic repository operations area, as part of the disposal system connoted by "repository". This appears to be an area which needs review and potential revision to bring the rule in conformance with NWPA.

In addition, since our staff technical positions use the term "repository" its definition should be included in the glossary suggested above. (See definition "j" below.) The technical positions should be written carefully to use terms consistent with definitions in the related laws, since they are intended to be consistent with the legal requirements.

b. The term PRELIMINARY DESIGN with reference to natural and engineered structures, systems and/or components, including barriers and facilities, (items) means the part of design needed to (1) justify plans for construction of the respective item(s), including but not limited to preliminary engineering specifications, (2) accomplish performance assessments and other pertinent evaluations producing design information in accordance with validated design procedures for the respective item(s), and (3) demonstrate feasibility and practicality to construct and characterize the item(s) and otherwise meet specified functional goals, objectives and requirements for the item(s). DEFINITIVE DESIGN has the same meaning as PRELIMINARY DESIGN when used with reference to the items noted above.

DISCUSSION:

The part of design represented by preliminary design is used to demonstrate the feasibility of the next large phase of a major project following the R&D phase, i.e., the construction phase. Typically this phase is funded by Title II funds. DOE in Attachment A uses the term "definitive design" to designate this part of design. The conceptualized details of design are greater than at the beginning of the R&D phase and are sufficient enough to allow construction to proceed to completion. Section 114(a)(1)(A) of NWA calls for "preliminary engineering specifications" relative to justifying construction of a repository at the site selected. The definition of "preliminary design" includes these "preliminary engineering specifications".

As can be seen by reviewing the definition of construction, which includes the act of designing, (see below) it is expected that some design will be created during the construction phase or during construction. However, it is not intended that construction necessarily include all the creation of design relative to a project. Indeed some designing occurs in the form of R&D and preparation of preliminary design during the pre-construction phase. Many users of the word "design" do not intend that it encompass research and development, including exploration activities or creation of preliminary design; however, as used in the rules and the staff technical positions, when referring to activities, it does include these "pre-construction" activities.

c. The term DESIGN means (1) specifications, plans, drawings, blueprints, and other items of like nature; (2) the information contained therein; or (3) the research and development data pertinent to the information contained therein. When used with reference to an activity or as a verb, DESIGN means, respectively, the activity or act itself as inferred from the context, involved in producing information listed under (1) and (2) herein.

DISCUSSION:

This definition is consistent with the definition in Sec. 11 (i) of the Atomic Energy Act of 1954 as amended. The inclusion of the part of the definition which covers activities is consistent with common usage which implies the meaning--collecting or creating design (information). In addition since the NRC's rules generally use terms in a manner consistent with the applicable laws, it would be assumed that it was intended that Part 60 also use the term in a consistent manner. This position is specifically implied in the Discussion (Section 3.0) of the NRC Review Plan for Quality Assurance Programs for Site Characterization of High Level Waste Repositories.

d. The term DESIGN PROCEDURE means the description in a document or record of a rational, validated, quantitative or qualitative procedure for collecting or creating design, allowing for appropriate verification of actions accomplished in accordance with the procedure, including procedures for (1) evaluating and assessing the performance of conceptualized and/or defined natural or engineered structures, systems and/or components, including barriers and facilities, (items) relative to their functional goals, objectives and requirements and any other specified requirements, and (2) for accomplishing research and development, including

exploration during site characterization pertinent to the items. DESIGN PROCEDURES include computer programs, utilizing models, and other automated processes and procedures, any of which accomplish evaluations, assessments, and interpretations regarding items, including interpretation of data pertinent to the respective items.

DISCUSSION:

The use of this term is consistent with common usage in many engineering projects which do not have R&D phases and which start out with validated design procedures. In addition however, item (2) of the definition specifically identifies that use of validated procedures are considered pertinent to the R&D phase, since the collection of pertinent, valid data is necessary to develop validated procedures identified in (1) of the definition. This usage is rare since application of formal QA controls, meeting 10CFR50 Appendix B requirements, involving procedures for R&D, including exploration, has been rare.

It should be noted that per the definition, design procedures must be validated for their intended application before they become design procedures. The term does not apply to candidate, analytical evaluation and assessment procedures, using models which have not been validated in design procedures and other rationale applied to the assessment of conceptualized items during R&D, including site characterization. Finally, the definition is entirely consistent with the definition of "design" which includes the reference to activities for producing certain (design) information.

The concept that activities under a QA program should be accomplished in accordance with procedures so that verification, including QC, can be accomplished is commonly held. Hence "design procedure" as defined above allows the wherewithal to accomplish verification of R&D during site characterization, as well as subsequent to R&D, for example, during construction. The fact that R&D and other design activities may be accomplished without the benefit of procedural control is recognized. The information so collected or created is still "design" for example, research and development data, but its validity is not established. Procedures for validating information to whatever extent possible, particularly raw data and interpreted data, for use in subsequent validation of design procedures are themselves design procedures. (See discussion associated with the definition of validation below for further elaboration of its role in design.)

e. The term CONSTRUCTING or CONSTRUCTION means the design, manufacture, fabrication, placement, erection, installation, modification, inspection or testing of an engineered structure, system or component of a facility or activity which action is (1) subject to the regulation specified in 10CFR60.3(b) and other regulations contained in or referenced by that Part; (2) occurs subsequent to the filing of a license application or an application for construction authorization whichever occurs first, and (3) is not R&D, including "site characterization" as defined by 10CFR60.2. The term CONSTRUCT means to do construction as defined herein.

DISCUSSION:

This definition has been taken from the definitions of 10CFR21, modified as appropriate to make it applicable to Part 60 regulations and provisions of the NWPA. The term is also indicative of the activities envisioned by DOE orders for project control during the construction phase of a major project, (see Attachment A).

It is also structured to reflect the idea that, nominally, construction is not appropriate until complete preliminary design is prepared. This is consistent with Staff statements as to the desirability of a complete license application to assure action within the 3 years allotted for the review. However, it does provide for design activities, including R&D, after the applications are made, and in this regard takes into account the provisions of 10CFR60.21(c)(14) which anticipates R&D beyond the point construction begins.

Staff should realize that incomplete preliminary design means that feasibility of some aspect of the repository is still in doubt and hence the construction may be subject to substantial delays and/or change. This situation is not unlike starting a reactor construction with incomplete plans, except that, feasibility of actually being able to construct is still in doubt, providing more uncertainty as to the final outcome than in the case of a reactor where no R&D is necessary.

It would appear that this allowance in the rule may be unnecessarily liberal considering the provisions of the NWPA regarding preliminary engineering specifications in Sec. 114(a)(1)(A) and in fact conflict with being able to authorize construction given the specified considerations of 60.31. Specifically, it will be difficult, if not impossible, to determine reasonable assurance required by 60.31(a) if R&D described in 60.21(c)(14) remains to be accomplished. (Also see the discussion above under item (b) concerning preliminary design.)

f. The term RESEARCH AND DEVELOPMENT means (1) theoretical analysis, exploration, or experimentation; or (2) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes.

DISCUSSION:

This term research and development (R&D) is consistent with common usage and is taken directly from Sec. 11(x) of the Atomic Energy Act of 1954. It should be noted that "site characterization" does not include the development part of R&D covered under (2) in the definition. Research and exploration are, however, contained within the scope of "site characterization". As noted above in the discussion for definition "a", "site characterization" is a subset of the activities defined to be research and development.

As can be seen in the discussion of the term "conceptual design", (see item a above) for major projects the specification of R&D is closely related to "conceptual design". This relationship should be

maintained in the context of all technical positions which address R&D, site characterization and conceptual design.

g. The terms VERIFICATION or VERIFYING means (1) checking, auditing, and inspecting and other review of activities, subject to procedural control and performed by persons and organizations performing functions of attaining quality objectives; (2) checking, inspecting and other review of structure, system, and component, including barrier, characteristics which are safety-related; and (3) checking, inspection and other review of design, including the peer review of design procedures and/or design, but not including validation activities; all of which [(1), (2), and (3) above] are accomplished by persons or organizations assigned quality assurance functions as required by 10CFR50 Appendix B, Criteria I, "Organization". When used with reference to a computer code and as determined by context, VERIFICATION also means checking and review (accomplished by the persons or organizations responsible for creating or implementing the computer code, but not serving a quality assurance function included in (3) above) to demonstrate that the computer code performs the operations specified in a numerical model. The term VERIFY means to do verification as defined herein.

DISCUSSION:

This definition covers two common usages of the term VERIFICATION. The first definition is consistent with the connotation intended in Appendix B and standard QA usage. It is a "checkers" function and is related to checking specified functions or characteristics whether they be for hardware or design.

It also includes over-checking validation by use of peer reviews. Such an over-checking would be recognized to utilize a quasi-subjective process similar to the process which may have been used to accomplish the validation act in the first place. It is important to note that validation is a function of persons or organizations responsible for R&D. This is a key part of the definition of "validation" below. Verification of validation is to be accomplished, as necessary, by persons or organizations performing quality assurance functions.

In contrast to the definition for "validation" below, verification does not include the records themselves concerning the accomplishment of verification. These records are part of the records under the classification "Quality Assurance Records", discussed under 10CFR50 Appendix B, Criteria XVII.

h. The terms VALIDATION or VALIDATING with reference to design means (1) the process, accomplished by persons or organizations responsible for obtaining quality objectives for design, confirming that procedures proposed for collecting, identifying and creating design, considering intended application, are sound, cogent, convincing and telling and having such rational and being supported by data such as to compel acceptance as evidenced by consensus of technically competent scientists and/or engineers in the pertinent technical disciplines; (2) the documents and records, including design, which are pertinent to or the result of the process of (1) herein, including evidence of consensus where such consensus exists. When used with reference to a computer code and as determined by context, VALIDATION means the documents and records confirming that

a model as embodied in the computer code is a correct representation of the process or system for which it is intended. The term VALIDATE means to do validation as defined herein.

DISCUSSION:

This definition is consistent with the common definition of the root word "valid". The idea that validation applies to design procedures and is in way of establishing and documenting their quality, considering the subjective assessment of competent engineers and scientists, is noted. The subjective part of their judgement without documentation of their rational does not constitute validation. Documentation is necessary to achieve validation for the record. The concept that the validation process is subjective only means that part of it is not controlled by procedure. Much of the validation process should be controlled by procedure, including such parts as the selection of personnel for peer review groups, document controls, requirements and procedures for producing records, and the identification and handling of data collected by validated design procedures. All aspects of validation can, however, be verified, including the subjective parts. These can only be verified by other subjective methods.

As can be seen in considering R&D purposes, the status of data--whether it has been collected or identified by validated procedures--is important for subsequent validation of proposed design procedures. Hence the need for using design procedures for site characterization and other R&D and the upgrading of existing data as necessary and possible becomes evident.

i. The term SAFETY-RELATED with reference to actions, structures, systems and components, including barriers, and information pertinent to 10CFR60 rules means those activities, structures systems and components, including barriers, and information pertinent to the Commission's determinations specified under 10CFR60.31 (a) "Safety", and post-construction authorization determinations identified under 10CFR60.33 (b) in so far as review of considerations of 10CFR60.31 (a) are necessary.

DISCUSSION:

This definition appears to be a logical extension of the use of the term "Safety" in Part 60. It also parallels usage in Appendix B as applied to reactors, although this usage is ill-defined and ambiguous. (The experience associated with the poor understanding of the term as it relates to reactor licensing, discussed in the report for the TMI investigation and as revealed in Staff efforts to prepare a NUREG on the meaning of "safety-related", should not be duplicated in Part 60 licensing actions.)

j. The term REPOSITORY means any system licensed by the Commission that is intended to be used for, or may be used for, the permanent deep geologic disposal of high-level radioactive waste and spent nuclear fuel, whether or not such system is designed to permit the recovery, for a limited period during initial operation, of any materials placed in such system. Such term includes both surface

and subsurface areas at which high-level radioactive waste and spent nuclear fuel handling activities are conducted.

DISCUSSION:

This definition is identical with the definition in NHPA. It includes the concept of a system for disposal, not merely a facility. The system appears to include all pertinent barriers, natural and engineered, as well as handling areas. It is broader than the 10CFR60.2 definition of "geologic repository" in that it does not appear to exclude engineered barriers, for example, seals and the waste packages.

Attachment B

EXPLORATORY SHAFT

	<u>PLANNED START</u>	<u>PLANNED COMPLETION</u>	<u>ESTIMATED START/COMPLETION</u>
Initiate ES Phase II Definitive Design	7/85	N/A	7/86
Complete Definitive Design	N/A	9/86	6/87
Start Drilling Second Shaft	7/87	N/A	1/88
Complete ES Phase II Construction and Testing	N/A	1/89	7/89
Complete Underground Facility	N/A	5/89	11/89
Complete ES In Situ Testing per ES Test Plan	N/A	2/91	8/91
Complete ES Testing Data reports.	N/A	6/91	12/91

DAN SALTZMAN, VICE-CHAIRMAN
OREGON HANFORD PUBLIC ADVISORY COMMITTEE
STATEMENT BEFORE THE WASHINGTON NUCLEAR WASTE ADVISORY COUNCIL
FEBRUARY 21, 1986

I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE YOU TODAY.

OREGON'S INTEREST AND CONCERN OVER HANFORD ARE NO DIFFERENT THAN WASHINGTON'S. FOR BOTH STATES, THE STAKES ARE ENORMOUS IN THE FEDERAL GOVERNMENT'S SELECTION OF A HIGH-LEVEL NUCLEAR WASTE REPOSITORY. LIKE DIAMONDS, NUCLEAR WASTE IS FOREVER.

OREGON, THROUGH ITS INTERAGENCY TECHNICAL REVIEW COMMITTEE AND ITS PUBLIC ADVISORY COMMITTEE, IS COMMITTED TO WORK CLOSELY WITH WASHINGTON TO ENSURE ONLY THE BEST, OBJECTIVE, AND THOROUGH SCIENTIFIC EVIDENCE FORM THE BASIS OF ANY FEDERAL DECISIONS ON HANFORD, NOT THE ROLL OF THE DICE OR A CONGRESSIONAL VOTE COUNT FOR OVERRIDING A STATE VETO.

HISTORY AND MISSION OF OREGON PUBLIC ADCOMM AND TECHCOMM

DENIED A FORMAL ROLE AS AN ADJACENT AND AFFECTED STATE IN THE NUCLEAR WASTE REPOSITORY SITING PROCESS, OREGON HAS NEVERTHELESS COMMENCED A REVIEW PROCESS TO ENSURE THAT OREGON'S INTEREST IS REPRESENTED AND PROTECTED IN THE DECISION PROCESS RELATED TO HANFORD.

IN 1983, GOVERNOR ATIYEH DIRECTED THE OREGON DEPARTMENT OF ENERGY (ODOE) TO LEAD A HANFORD REPOSITORY REVIEW COMMITTEE OF RELEVANT STATE AGENCIES TO ADDRESS OREGON'S INTERESTS.

THE MISSION OF THE HANFORD REVIEW COMMITTEE IS TO ENSURE THAT THE HEALTH, SAFETY, WELFARE, AND ENVIRONMENT OF OREGONIANS ARE ADDRESSED AND PROTECTED:

1. DURING STUDIES OF A POTENTIAL REPOSITORY AT HANFORD
2. IF A REPOSITORY FOR HIGH-LEVEL RADIOACTIVE WASTE IS ESTABLISHED AT HANFORD
3. WHEN SHIPMENTS OF HIGH-LEVEL RADIOACTIVE WASTE OCCUR THROUGH OREGON ENROUTE TO FUTURE STORAGE OR DISPOSAL FACILITIES, AND
4. WHEN SPECIAL SHIPMENTS TO AND DISPOSAL OF RADIOACTIVE MATERIAL AT HANFORD OCCUR.

THE REVIEW COMMITTEE WILL ALSO ADDRESS OTHER NUCLEAR-RELATED ACTIVITIES AT HANFORD AS RESOURCES AND PRIORITIES PERMIT.

IN APRIL 1985, ODOE APPOINTED A HANFORD PUBLIC ADVISORY COMMITTEE OF LOCAL GOVERNMENT REPRESENTATIVES, INDUSTRY, CITIZENS AND PUBLIC INTEREST GROUPS TO WORK WITH THE ODOE AND THE HANFORD REPOSITORY REVIEW COMMITTEE TO ENSURE THAT OREGON'S REVIEW IS BOTH THOROUGH AND COMPREHENSIVE AND TO PROVIDE FOR PUBLIC OUTREACH AND EDUCATION ON HANFORD-RELATED ISSUES.

THE MISSION OF THE HANFORD PUBLIC ADVISORY COMMITTEE IS:

1. TO ADVISE THE HANFORD REVIEW COMMITTEE REGARDING PUBLIC CONCERNS WITH THE ISSUES THE REVIEW COMMITTEE IS STUDYING, AND
2. TO ASSIST THE REVIEW COMMITTEE IN THE DEVELOPMENT AND IMPLEMENTATION OF A PUBLIC INFORMATION AND INVOLVEMENT PROGRAM.
3. TO ASSIST OTHER INTERESTED STATE OR LOCAL INSTITUTIONS UPON REQUEST.

ACCOMPLISHMENTS IN ONE YEAR

JUST UNDER A YEAR OLD, THE PUBLIC ADVISORY COMMITTEE HAS CLEARED THE PRELIMINARY ORGANIZATIONAL HURDLES AND BEGUN IN EARNEST ITS PUBLIC OUTREACH AND EDUCATION AND ITS ADVISORY FUNCTIONS. WE HAVE:

- O DIVIDED OURSELVES INTO A GROUNDWATER AND A TRANSPORTATION TASK FORCE
- O ELECTED A STEERING COMMITTEE AND ESTABLISHED A REGULAR ALTERNATE MONTH MEETING SCHEDULE
- O SPONSORED A PUBLIC WORKSHOP ON RADIATION MONITORING AT HANFORD, WITH USDOE, WDOE, OREGON HEALTH DIVISION AND GREENPEACE AS INVITED PANELISTS
- O ESTABLISHED A PUBLIC OUTREACH AND EDUCATION SUBCOMMITTEE TO ORGANIZE QUARTERLY PUBLIC WORKSHOPS ON OTHER HANFORD-RELATED SUBJECTS IN 1986
- O DEVELOPED A STRATEGY FOR REVIEWING THE USDOE FINAL EA ON HANFORD

OUR STRATEGY DIRECTS OREGON'S LIMITED RESOURCES TO THE ISSUES WHERE OREGON CAN MAKE A SIGNIFICANT AND UNIQUE CONTRIBUTION. IN ADDITION TO OUR OWN SCREENING CRITERIA FOR IDENTIFYING THOSE ISSUES, OUR REVIEW COMMITTEE IS WORKING CLOSELY WITH WASHINGTON TO MAXIMIZE OUR COORDINATION AND COOPERATION IN THE TWO STATES' TECHNICAL REVIEW.

WE HAVE ADVISED THE TECHNICAL REVIEW COMMITTEE TO FOCUS UPON USDOE RESPONSES TO KEY INDIVIDUAL,

STATE AND FEDERAL AGENCY COMMENTS. USDOE RESPONSES WILL BE CATEGORIZED AS: RESPONSIVE, RESPONSIVE-CONDESCENDING, EVASIVE, OR NO RESPONSE. THIS SHOULD ASSIST ON ANY OREGON DECISION TO INITIATE OR JOIN IN LITIGATION.

DEFENSE WASTE

OREGON PLANS ON ADDRESSING DEFENSE WASTE ISSUES THROUGH THE SAME INSTITUTIONAL ARRANGEMENTS CREATED TO MONITOR HANFORD'S REPOSITORY POTENTIAL, VIZ., ODOE, THE INTERAGENCY HANFORD REVIEW COMMITTEE AND THE PUBLIC ADVISORY COMMITTEE.

RATHER THAN HAVING USDOE-SPONSORED WORKSHOPS ON DEFENSE WASTE, THE OREGON PUBLIC ADVISORY COMMITTEE HAS DECIDED TO HOST WORKSHOPS THROUGHOUT THE STATE WITH USDOE ONE OF SEVERAL INVITED PANELISTS.

I ALSO EXPECT THE PUBLIC ADVISORY COMMITTEE TO APPROVE AT OUR MARCH 11TH MEETING THE FORMATION OF A DEFENSE WASTE SUBCOMMITTEE TO IDENTIFY ISSUES OF CONCERN IN THE FORTHCOMING USDOE DRAFT EIS.

AREAS OF FURTHER COOPERATION

- O OUR COMMITTEE HAS BECOME INCREASINGLY CONCERNED OVER REGULAR MEETINGS ON HANFORD BETWEEN THE USDOE AND THE NRC, HELD IN WASHINGTON, D.C.

IT IS OUR UNDERSTANDING THAT THESE MEETINGS ARE DESIGNED TO WORK OUR AREAS OF DISAGREEMENT ON THE SITE CHARACTERIZATION PROGRAM AT HANFORD, OR ANY

OTHER POTENTIAL PROBLEMS THAT MAY HINDER NRC REPOSITORY HEARINGS, SHOULD THE PRESIDENT APPROVE HANFORD AS THE SITE OF THE FIRST REPOSITORY.

MEETINGS OF THIS NATURE, HELD IN WASHINGTON, D.C., MAKE US A LITTLE NERVOUS. SPECIFICALLY, WE ARE CONCERNED THAT ONCE THE NRC AND DOE CONCUR ON A TECHNICAL POINT IN THESE MEETINGS, IT MAY BE DIFFICULT TO RAISE THAT ISSUE AGAIN IN OFFICIAL NRC LICENSING HEARINGS.

AT OUR JANUARY MEETING, THE COMMITTEE UNANIMOUSLY APPROVED A DRAFT TEXT OF A LETTER FROM OUR GOVERNOR AND HOPEFULLY YOUR GOVERNOR TO SECRETARY HERRINGTON AND TO COMMISSIONER PALLADINO REQUESTING THAT THE DOE AND THE NRC PROVIDE A QUARTERLY BRIEFING TO OREGON AND WASHINGTON TECHNICAL REVIEW STAFF ON ALL MEETINGS HELD ON HANFORD AND THAT AT LEAST ONE MEETING A MONTH BE HELD IN THE PACIFIC NORTHWEST. THE PARTICULAR MEETING TO BE HELD IN THE PACIFIC NORTHWEST WOULD BE SELECTED THROUGH CONSULTATION WITH THE TWO STATES.

THIS ARRANGEMENT ALLOWS THE TWO STATES AN AFFORDABLE OPPORTUNITY TO HAVE TECHNICAL REVIEW STAFF PRESENT AT THESE MEETINGS. IT MAY ALSO PROVE TO BE MORE COST-EFFECTIVE FOR THE DOE, AS WE UNDERSTAND THESE MEETINGS ARE OFTEN ATTENDED BY NUMEROUS STAFF FROM DOE'S HANFORD OPERATIONS.

GOVERNOR ATIYEH HAS RECEIVED OUR DRAFT LETTER AND WE ARE INFORMED THAT HE WILL DISCUSS THE MATTER WITH GOVERNOR GARDNER.

I WOULD THINK AN INDICATION OF SUPPORT FROM THE ADVISORY COUNCIL FOR SUCH A LETTER AND FOR WHAT IT REQUESTS WOULD BE VERY HELPFUL.

- O ANOTHER AREA FOR COOPERATION IS IN THE REVIEW OF THE DEFENSE WASTE DEIS. I HOPE WE CAN DOVETAIL RESOURCES AND SCHEDULES TO MAKE THE BEST USE OF PANELISTS FROM OUTSIDE NORTHWEST INVITED BY WASHINGTON OR OREGON TO PARTICIPATE IN PUBLIC OUT-REACH/EDUCATION ACTIVITIES RELATED TO DEFENSE WASTES DEIS.

LET ME CLOSE BY SAYING THE QUESTION OF HANFORD IS AN IMPORTANT ONE TO OREGONIANS.

OUR INTENSE COMMITMENT TO ENSURE THAT SITE SELECTION IS FAIR AND CREDIBLE AND THAT OUR CONCERNS ARE FULLY ADDRESSED, COMPENSATES FOR OUR LACK OF FEDERAL FUNDS TO TRACK THIS ISSUE.

WE LOOK FORWARD TO A LONG AND FRUITFUL ASSOCIATION WITH THE ADVISORY COUNCIL.

ONCE AGAIN, I THANK YOU FOR THE OPPORTUNITY TO APPEAR BEFORE YOU. I AM HAPPY TO ANSWER ANY QUESTIONS.

PUBLIC RELEASE SYSTEM (509) 376-5385

ROCKWELL HANFORD OPERATIONS
CDC BUILDING #2
2900 GEORGE WASHINGTON WAY
P. O. BOX 800
RICHLAND, WA 99352P A C K I N G S L I P

REQUEST NUMBER 86-036 NUMBER OF DOCUMENTS ENCLOSED 3
NAME OF REQUESTOR F. R. Cook, Nuclear Regulatory Commission
ADDRESS 1955 Jadwin, Richland, WA 99352

ADDITIONAL INFORMATION Number 1 was provided on a previous request on 11/14/85.
Number 4 was provided on 11/20/85. Enclosed is the document (#2) that was published in Corrosion, Vol. 23, No. 2, Feb. 1967. The author, L. A. Charlot indicates that it was never put out as BNWL-SA-481. Carol Ryder of PNL document control has indicated to that she will send PNL-MA-60 to you directly, if R. P. Saget approves.
Numbers 5 & 6 are the same document, and it is still in preparation, and not available in draft form. The DOE has rejected your request for numbers 7, 8, 9, 10, 15 and 16. SD-BWI-TP-044 is in preparation & should be out soon. You had cancelled number 13, as you said in our conversation of 2/17/86 that you had obtained it from another source. Enclosed are the Weekly Reports for J. H. MacIaren that are available. Also Section 3.15 from RHO-BWI-MA-100 is enclosed.

IF WE CAN BE OF FURTHER ASSISTANCE, PLEASE CONTACT PUBLIC RELEASE SYSTEM.

PACKED BY J. M. Ludwick/M. E. Shook 2/28/86



**Basalt Waste Isolation Project
Public Release System
DOCUMENT REQUEST FORM**

DOCUMENT TYPE See attached list

DOCUMENT NO. _____

DOCUMENT REVISION _____

DOCUMENT DATE _____

DOCUMENT TITLE _____

RECORD NO. _____

CARTRIDGE/FRAME NO. _____

ACCESSION LIST DATE (MONTH) _____ (YEAR) _____

END FUNCTION _____

PAGE NO. _____

REQUESTOR NAME F. R. Cook

REQUESTOR'S ORGANIZATION NRC

STREET ADDRESS Call for pick up

CITY, STATE, ZIP _____

TELEPHONE NO. 943-4669

COMMENTS _____

DATE OF REQUEST *FRC* 02/06/86

February 06, 1986

Basalt Waste Isolation Project
Public Release System
Document Request Form Attachment

1. RHO-BWI-C-34
2. BNWL-SA-481 Unpublished document
3. BWIP procedures document PNL-MA-60 (Request DOE obtain release for document from PNL)
4. Report of QA audit of RKE/PB by RKO concerning Study 10
5. Areal Depressurization Analysis accomplished by RHO Systems Group
6. SD-BWI-TA-020 Groundwater Drawdown as a Factor in Long-term Repository Assessment
SD-BWI-TI-203
7. SOW's for Modeling and Design of Chamber, Cluster and Tracer Tests for the ES
9. SD-BWI-PAP-003 Performance Assessment Plan
10. Numerous viewgraphs presented to the USGS during the meeting week of December 08, 1985
11. SD-BWI-TP-044 Borehole Location and Sampling Requirements for BWIP Hydrochemistry Program 1/88
12. BWIP Policy MA-100 3.15 concerning handling of proprietary information
13. Current BWIP BQ RD (controlled document)
14. Weekly memo's of J. A. MacIaren to BWIP director from 2/85 through his departure 11/01/85
15. DOE's draft EIS for defense waste disposal
16. CHAINT-MC program Reliability Analysis Report (preliminary report if final not available)

Please note items 1 through 8 have been previously requested.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555

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PENALTY FOR PRIVATE USE, \$300

1955 Jadwin
Richland, WA 99352



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NRC-642

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