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2o: Robert Browning MS 1-2355

6/11

United States Government **Department of Energy**

memorandum

101

PDR-1
LPDR-Wm-10(2)

WM DOCKET CONTROL CENTER

'87 JUN 15 A11 :57

DATE: May 28, 1987

REPLY TO ATTN OF: RW-20

SUBJECT: DOE Interpretation of Terms from 10 CFR 60

TO: J. Anttonen, BWIP
J. Neff, SRP
D. Vieth, NNWSI

WM Record File 101

WM Project 10
Docket No.
PDR ✓
LPDR ✓ CB, NLS

Distribution:
Hildenbrand REB Linehan
Corrado
(Return to WM, 623-SS)
From: Cook, NRC

Attached for your use in preparation of the SCPs are the proposed DOE interpretations of regulatory terms from 10 CFR 60:

- o Disturbed Zone Boundary
- o Engineered Barrier System Boundary
- o Substantially Complete Containment
- o Anticipated and Unanticipated Processes and Events

These interpretations have been developed over the last several weeks by OGR in consultation with staff members of the three projects and their contractors. The projects have each provided many thoughtful and insightful comments and observations on earlier drafts of these interpretations and the OGR staff has given careful consideration to all of these in developing the proposed interpretations. The attached draft interpretations incorporate resolution of all comments received from the project offices in our telephone conference of May 8, 1987.

These interpretations represent the best achievable, technically acceptable compromise among the individual project preferences which are still responsive to the intent of 10 CFR 60. OGR is preparing a companion document which discusses in detail the rationale and bases for these interpretations. This document will be available in early June 1987. It is OGR's intention to baseline these interpretations for use in preparation of the Site Characterization Plans. Please use these interpretations as the basis for preparing your SCPs pending receipt of the official baseline notification.

In recognition of the fact that developments during site characterization and design may indicate the need for adjustment of the various interpretations, please incorporate appropriate milestones into the SCP for re-evaluation of the interpretations. This re-evaluation should coincide with the completion of repository and waste package ACD. Please refer questions or comments to D. Alexander on FTS 896-1238 or M. Frei on FTS 896-5355 of my staff.

Mark W. Frei, for
Ralph Stein, Director
Engineering and Geotechnology Division
Office of Civilian Radioactive
Waste Management

Attachments

3570

cc: S. Kale, RW-20
T. Isaacs, RW-20
R. Stein, RW-23
M. Frei, RW-23
D. Alexander, RW-23
A. Berusch, RW-23
J. Knight, RW-23
E. Regnier, RW-24
L. Skousen, NNWSI
R. Holten, BWIP
R. Lahoti, SRPO
M. Cloninger, Weston
P. Cordone, Weston
D. Michlewicz, Weston
R. Jackson, Weston
W. Wowak, Weston
L. Skoblar, Weston
D. Siefken, Weston
W. Hewitt, Weston
L. Ricketsen, Weston
E. Benz, Weston

SUBSTANTIALLY COMPLETE CONTAINMENT

Interpretation

The Department of Energy understands the requirement for substantially complete containment of HLW within the set of waste packages to mean that a very large fraction of the radioactivity that results from the HLW originally emplaced in the underground facility will be contained within the set of waste packages during the containment period. Therefore the requirement would be met if a significant number of the waste packages were to provide total containment of the radioactivity within those waste packages or if the radioactivity released from the set of waste packages during the containment period were sufficiently small. The precise fraction of HLW that should be retained within the set of waste packages, number of waste packages that should provide total containment, or constraints that should be placed on the rate of release from the set of waste packages to meet the requirement for substantially complete containment should not be determined until the site is sufficiently well characterized. Such a precise interpretation depends in large part on the level of waste package performance needed at the site. Therefore, a specific interpretation of the general requirement cannot be made until additional information regarding site conditions and the characteristics of alternative materials and waste packages designs subject to these conditions is available.

Design Objectives

In order to guide the testing and design programs to obtain the information needed to assess the performance of the set of waste packages, quantitative design objectives have been set. These design objectives have been set to be consistent with the general interpretation given above in order to focus the site characterization program on the requirement for substantially complete containment. However, these design objectives do not replace this requirement and are not to be construed as criteria for the waste packages. Information developed during site characterization may dictate the need for additional testing and design activities and for other design objectives to guide these activities. Therefore the design objectives may evolve during the site characterization program and the specific design objectives given below should be regarded as tentative.

The following three design objectives are set as current program goals:

(1) By virtue of the intrinsic properties and design of the waste package components subjected to the range of conditions anticipated in the underground facility, 80 percent or more of the waste packages will retain all their radioactivity for a containment period of 1000 years after permanent closure of the repository.

(2) At any time during the containment period, at least 99 percent of the radioactivity resulting from the original waste emplaced in the underground facility will be retained within the set of waste packages.

(3) Any releases from the waste packages that occur during the containment period should be gradual such that releases from the engineered barrier system in any year during this period should not exceed one part in 100,000 of the total inventory of radionuclide activity present in the geologic repository system in that year.

Other design objectives could have been set. Those specified above have been chosen on the basis of ease of implementation by the projects, clarity for the sake of the review of the program, ease and reproducibility of calculations for the waste package performance assessments, avoidance of inappropriate constraints on the testing and design programs, and consistency with the regulatory rule-making record.

Discussion

The first design objective has been set to focus the program on the information needed to demonstrate that a significant fraction of the waste packages provide total containment of the waste within those waste packages and recognizes the impossible burden of demonstrating that all waste packages provide total containment during the containment period. The design objective establishes what is considered to be a reasonably attainable numerical goal which is responsive to the concept of substantially complete containment. The phrase "by virtue of the intrinsic properties and design of the waste package components" conveys the Department's intention to design the waste package components for containment capabilities over and above those afforded by favorable site conditions or the absence of natural transport mechanisms. That is, the action of the various components of the waste package, acting independently or as a system, will be capable of positively preventing the escape of radionuclides across the waste package boundary. The phrase "subjected to the range of conditions anticipated in the underground facility" conveys the Department's intention to take into account the range of any uncertainties in these conditions in designing the waste packages and evaluating degradation of its components.

The second design objective is set to focus the program to obtain the information to demonstrate that even if some waste packages fail to provide total containment of their waste, the fraction of the total radionuclide inventory retained within the waste packages is essentially unity.

The third design objective addresses the maximum release of radioactivity from the engineered barrier system in any year during the containment period. This design objective is set in terms of a sum over all radionuclides rather than on an individual radionuclide basis; that is, for any year before the end of the containment period the design objective can be expressed as

$$\sum_i Q_i(t) \leq 10^{-5} I(t)$$

where $Q_i(t)$ is the release (curies) of radionuclide i in year t from the engineered barrier system and I(t) is the system activity inventory in year t. This design objective effectively establishes a quantitative goal for gradual release from the engineered barrier system during the containment period. Gradual release from the engineered barrier system during the containment period will be evaluated as a part of the demonstration of substantially complete containment.

The requirement for substantially complete containment by the set of waste packages is consistent with the need to reduce uncertainties during the early period when radiation and thermal conditions in the engineered barrier system are dominated by fission product decay. The design objectives given above assume that this early period, the containment period, is the first 1000 years after permanent closure, the most conservative period consistent with

the period stated in 10 CFR 60.113. Information regarding the characteristics of the underground facility may justify a shorter containment period. This assumed period and each of the design objectives will be evaluated during the site characterization program with a formal milestone near the completion of the Advanced Conceptual Design.

BOUNDARY OF THE ENGINEERED BARRIER SYSTEM FOR EVALUATION OF RELEASE RATES

Interpretation

The engineered barrier system boundary is defined by the envelope of the underground facility. For the purposes of the Site Characterization Plan, the boundary for evaluation of releases from the engineered barrier system relative to the requirements of 10 CFR 60.113 is different than the envelope of the underground facility and is conservatively chosen to coincide with the surfaces of the excavations within the underground facility. In making this evaluation, the release rates calculated are those corresponding to the net flux of radionuclides transported into the host rock.

Discussion

The "engineered barrier system" is defined in 10 CFR Part 60 to consist of the waste packages and the underground facility. Because the waste packages are emplaced inside the underground facility, the boundary of the engineered barrier system is defined by the envelope of the underground facility. This envelope surrounds the set of waste packages. The waste package envelope is interior to and distinct from the underground facility envelope. This follows from the Commission's belief "that a repository should consist of two major engineered barriers (waste package and the underground facility) in addition to the natural barrier provided by the geologic setting." (46 FR 35280 at 35283)

Engineered barriers are defined in the Nuclear Waste Policy Act (NWPA) as "man-made components of a disposal system designed to prevent the release of radionuclides into the geologic medium involved." In light of this definition a question has arisen as to whether, for purposes of containment and isolation, the underground facility may be considered to include that portion of the host rock which has been man-modified, i.e., engineered to create the underground structure that is part of the underground facility. While the host rock itself is not man-made in the usual sense of the word, modification of it in construction and operation of a mined excavation is an inherent part of prudent engineering practice; and, hence, it can be argued that the host rock is engineered.

The question of whether the underground facility and, hence, the engineered barrier system, includes a portion of the host rock is related to the role of the host rock in the design of the engineered barrier system and evaluating its performance relative to the requirements of §60.113. As Part 60 clearly recognizes [see, for example, §60.133 and §60.135], the design of the engineered barrier system inherently reflects the properties of the host rock. Likewise, the evaluation of the performance of the engineered barrier system pursuant to the requirements of §60.113 requires consideration of not just the properties of the materials inside the excavation, but also properties of the host rock affecting transport into and through the host rock, regardless of where the calculational boundary is drawn.

The question of whether the engineered barrier system boundary encompasses any portion of the host rock is set aside for now and for purposes of the Site Characterization Plan the calculational boundary of the engineered barrier system is drawn to coincide with the surfaces of the excavations

within the underground facility. This is done in the belief that such an approach will promote a conservative program for evaluation and testing engineered barrier system designs, given current uncertainties which site characterization should address. This approach does not foreclose future consideration of the host rock as part of the underground facility in establishing the engineered barrier system boundary, nor does in preclude tests during site characterization to investigate the suitability or including a portion of the host rock as a part of the engineered barrier system. In particular, a milestone should be added to the site characterization program near the completion of the advanced conceptual design for formal re-evaluation of this approach (based on design, testing, and performance assessment results).

DISTURBED ZONE

Interpretation

The disturbed zone is that volume of the host rock encompassing the underground facility that is not incorporated into the calculation of the pre-waste emplacement ground-water travel time needed for the demonstration of compliance with 10 CFR 60.113. The distance to the disturbed zone boundary is to be determined on a site-specific basis by an evaluation of the construction-induced mechanical damage to the intrinsic characteristics of the host rock that directly affect geohydrologic properties and an evaluation of the effects of the heat and radiation from the emplaced wastes on these same characteristics. For the purposes of the Site Characterization Plan, this distance is considered to be bounded by a distance in the range between 0.5 and 5 opening diameters from the major openings in the underground facility, depending upon the specific characteristics of the site and particular excavation methods and waste emplacement configuration.

Discussion

The disturbed zone is that volume of the host rock encompassing the underground facility that is not incorporated into the calculation of the pre-waste-emplacement ground-water travel time. The disturbed zone distance is assigned by individual projects to encompass damage to the intrinsic properties of the host rock affecting geohydrologic characteristics. The particular approach to be used to evaluate the extent of the disturbed zone should be chosen to simplify the analyses and the testing needed.

Both construction-induced mechanical damage and waste-induced thermomechanical damage will be considered in evaluating the extent of the disturbed zone. In order to evaluate the extent of the mechanical damage to the host rock, evaluations will include estimates of damage due to excavation of the major openings in the underground facility, including effects of both blasting and mechanical mining. The studies to be conducted to obtain these estimates will focus on the effects on those intrinsic characteristics that directly impact the geohydrologic properties.

The effects of heat and radiation from the emplaced wastes on the extent of the disturbed zone will be evaluated. This evaluation will include analysis of the impacts of the heat on the construction-induced damage considered above as well as any other impacts on the intrinsic characteristics of the host rock that are anticipated to directly affect the geohydrologic properties. These impacts do not include changes to the properties of the ground water. For example, buoyancy effects will not be considered in evaluating the extent of the disturbed zone. The evaluations will take into account the time dependence of the thermal and radiation pulse.

It is anticipated that the distance that defines the extent of the disturbed zone would be in the range of 0.5 to 5 opening diameters from the major openings in the underground facility. Estimates of the extent of the construction-induced and waste-induced damage reported in the Environmental Assessments indicate that the disturbed zone could extend between 0.5 and 5

opening diameters from the major openings in the basalt and the welded tuff at the Hanford and Yucca Mountain sites. For the Deaf Smith County site, the preliminary evaluation in the Environmental Assessment indicated that the extent of the distance to the disturbed zone would be less than 15 m, or less than 2 opening diameters.

Future estimates of the disturbed zone will be based on appropriate analytic calculations. These analyses will include a list of the assumptions made and the criteria used to define the disturbed zone at each of the sites. The sensitivity of the results to the various assumptions will be evaluated and taken into account in the comparison with the criteria.

The analyses will focus on the extent of the significant changes to the geohydrologic properties of the host rock (e.g., effective porosity and permeability). While additional factors (e.g. chemical sorption or solubility) could be considered, evaluations have shown that effects of excavation and waste emplacement on such factors are not likely to extend as far into the host rock. Furthermore, it is clear from 10 CFR Part 60 and from the rule-making record that the principal concern is the evaluation of the geohydrologic characteristics related to the evaluation of flow of ground water through the host rock. Therefore, the definition of the disturbed zone in 10 CFR 60.2 that refers to "changes of properties [that] may have a significant effect on the performance of the geologic repository" is interpreted here to mean the changes in geohydrologic properties important to the evaluation of the pre-emplacement ground-water travel time.

ANTICIPATED AND UNANTICIPATED PROCESSES AND EVENTS

Interpretation

The regulations in 10 CFR Part 60 contain performance objectives for the disposal system, and components thereof, for which two categories of processes and events must be considered: those which are "anticipated" and those which are "unanticipated". Qualitative definitions of these terms are given in 10 CFR 60.2. In structuring its site characterization program, the Department of Energy finds it useful to interpret these definitions in more quantitative terms, as follows:

> "Anticipated processes and events" are those categories of natural processes and events that have a probability which is equal to or greater than 0.1 of occurring during the period when the intended performance objective must be achieved. Human intrusion is specifically excluded from these categories.
>
> "Unanticipated processes and events" are 1) those categories of natural processes and events affecting the geologic setting that have a probability which is less than 0.1 of occurring during the period when the intended performance objective must be achieved, and 2) those processes and events inadvertently initiated by human activities.

Discussion

The interpretations given above are needed for the evaluations in regard to the postclosure performance objectives of 10 CFR 60. For example, the interpretation of anticipated processes and events is needed to address the performance objectives of 10 CFR 60.113 with respect to the requirement for substantially complete containment of HLW within the waste packages and for gradual release of HLW from the engineered barrier system. It is also needed for the assessment of compliance with the individual protection requirement of 40 CFR 191.15 and the ground-water protection requirement of 40 CFR 191.16, which are implemented by 10 CFR 60.112, because the Department understands these requirements to be applicable only for anticipated processes and events. In addition, the interpretation is needed to establish the "expected conditions" (which the Department takes to mean those involving anticipated processes and events) for the comparative evaluations of the recommended sites required by 10 CFR 960.3-1-5.

The interpretation of anticipated and unanticipated processes and events is needed for the assessment of compliance with the waste isolation requirement (cumulative release to the accessible environment) of 10 CFR 60.112. The Department of Energy expects to demonstrate compliance with this requirement by conducting performance assessments. It is expected that these assessments will: (1) identify all anticipated and unanticipated processes and events which could affect the repository; (2) evaluate the likelihood of each process and the effect of each on release of radionuclides to the accessible environment; and (3) combine these estimates into an overall probability distribution displaying the likelihood that the amount of radioactive material released to the accessible environment will not exceed

specified values. In these assessments the Department intends to take into account all those events and processes which are sufficiently credible to warrant consideration. Generally, categories of processes and events which can be shown to have a likelihood less than one chance in 10,000 over 10,000 years, would not be included in the detailed assessments. Likewise, categories of processes and events which otherwise can be shown to have an insignificant impact on cumulative release to the accessible environment would not be evaluated in detail. Furthermore, any particular combination of categories of processes and events which meets either of these two criteria would not be considered sufficiently credible to be taken into explicit account in the detailed assessments.

The impacts of human intrusion on repository performance will be considered in these assessments; however, these impacts will not be explicitly incorporated into the overall probability distribution defined above. The approach that will be used by the Department in the evaluation of the effects of human intrusion will be to (1) evaluate the effect of potentially adverse human activities such as those identified from the examination of the Potentially Adverse Conditions of 10 CFR 60.122; (2) develop scenarios for human activity that could significantly affect repository performance and that are sufficiently credible to warrant consideration; and (3) estimate relative probabilities and consequences for these scenarios. These estimates will involve qualitative judgment as well as the quantitative evaluations and will be considered in the evaluations of site suitability.

The NRC requires that certain assumptions be made in assessing the likelihood of human intrusion and the Department's approach will be consistent with these assumptions. Therefore, the strategy will assume that (1) the monuments required by 10 CFR Part 60 are sufficiently permanent to serve their intended purpose; (2) the value to future generations of potential resources can be assessed adequately from information to be obtained in the site characterization program; (3) functioning institutions will understand the nature of radioactivity and appreciate its hazards; (4) institutions will be able to assess risk and to take remedial action at a level of social organization and technological competence equivalent to, or superior to, that which would be applied in initiating the process and events concerned; and (5) relevant records will be preserved and remain accessible for several hundred years after permanent closure. In the development of human intrusion scenarios, the Department will focus its effort on evaluating potential effects of human activity on the variables of the system important to waste isolation and will follow the principle that highly speculative intrusion scenarios should not be allowed to dominate the testing program. The latter point does not mean that the potential for resource exploration and development or other potentially adverse human activity, will not receive attention; indeed, these activities will receive explicit attention in the site characterization program.

The numerical probability value the Department has chosen to distinguish between anticipated and unanticipated processes and events (probability of 0.1 of occurring during the period the performance objective must be achieved) is somewhat arbitrary; however, this value is reasonable and conservative. Likewise, the numerical probability chosen as the criterion for sufficient credibility to warrant consideration for (probability of 0.0001 of occurring

in the 10,000-year period immediately following permanent closure of the repository) is reasonable and is consistent with the considerations in 10 CFR 60 and 40 CFR 191. However, these specified values are intended as guidelines only. For example, an event or process with an estimated probability of occurrence somewhat less than 0.1 may be considered as anticipated if the uncertainty in the probability estimation is large enough to warrant this action. Likewise, an event or process with a probability of occurrence somewhat less than 0.0001 may be marginally considered as sufficiently credible to warrant consideration if the uncertainty in the estimate is sufficiently large.

To: Robert Browning / John Linehan Copies for Browning / Linehan

MS 623 SS

ATTACHMENT A

THE ANALYTIC SCIENCES CORPORATION

LAR TEAM LISTING BY PRINCIPAL AREA OF EXPERTISE

GEOLOGY
- Jay Smith, Leader
- Darrel Cowan
- Gerald Hohmann
- Ronald Bruhn
- Charles Glass
- David Tillson

HYDROLOGY
- Pat Domenico, Leader
- Eileen Poeter
- John Wilson
- James Rollo

GEOCHEMISTRY
- Abe Lerman, Leader
- William Seyfried
- Donald Langmuir

CLIMATOLOGY AND METEOROLOGY
- Roger Barry, Leader
- Peter Mehringer
- Harold Fritts
- Roger Pielke
- Arthur Bass

GEOENGINEERING AND DESIGN Penn State
- Dick Bieniawski, Leader
- Miklos Salamon
- Tor Brekke
- Andy Donaldson
- Jim Voss
- Evert Hoek
- Wilson Blake
- Neville Cook

WASTE PACKAGE
- Tom Pigford, Leader
- Roger Staehle
- Jim Mitchell

SEAL SYSTEMS
- Eileen Poeter, Leader
- Paul Klieger
- David Nyby

PERFORMANCE ASSESSMENT
- John Bartlett, Leader
- Charles Koplik
- Steve Oston

2. Robert Browning/John Linehan
YMS 623 SS

Browning/Linehan
6/8

AMC INCOMING CORRESPONDENCE LOG
(CORRESPONDENCE RECEIVED JUNE 1-5, 1987)

LETTER NO.	DATE	ORIGINATOR	ADDRESSEE	SUBJECT	FILE NO.
87-DCC-0697	05/22/87	DOE-HQ	ANTTONEN	EXECUTIVE SESSION ACTION ITEM FROM INSTITUTIONAL SOCIOECONOMIC COORDINATING GROUP MEETING 3/10-12/87	3.5.3.3
87-DCC-0710	05/23/87	UNIV. OF SOUTHERN CALIFORNIA	VALE	COPYRIGHT PERMISSION - KENDALL - GEHRELS	3.5.2.5
87-DCC-0711	05/23/87	UNIVERSITY OF CALIFORNIA	ANTTONEN	COPYRIGHT PERMISSION - FRASER	3.5.2.6
87-DCC-0698	05/26/87	DOE-HQ	ANTTONEN	MEETING COORDINATOR	2.0
87-DCC-0702	05/26/87	NRC	MECCA	NOTICE OF UPCOMING MEETINGS	2.8.1.1
87-DCC-0703	05/26/87	NUCLEAR WASTE BOARD	OLSON	MEETING WITH DOE: PLANNING FOR TRANSURANIC WASTE SHIPMENTS FROM HANFORD TO WIPP	2.2.3
87-DCC-0705	05/26/87	GRAND JUNCTION PROJECT OFFICE	DAHLEM	BWIP SURVEILLANCE BSRP-PQU-S-87-001-C	2.8.7
87-DCC-0695	05/27/87	DOE-RL	SAGET	REPORT OF QUALITY ASSURANCE AUDIT OF ACTIVITIES BY QUALITY SYSTEMS DIVISION	1.15.1
87-DCC-0701	05/27/87	DOE-HQ	OLSON	DISSOLUTION OF LICENSING SUPPORT SYSTEM/INTERAGENCY COORDINATING COMMITTEE	2.8.1.5
87-DCC-0706	05/27/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - CONN	3.6.1.3.2.8
87-DCC-0707	05/27/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - DANN	3.6.1.3.2.8
87-DCC-0709	05/27/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - KOEDDING	3.6.1.3.2.8
R86-2633 R52	05/27/87	ROCKWELL	ANTTONEN	SCP STATUS REPORT	3.5.2.1
87-DCC-0715	05/27/87	MINERALOGICAL SOCIETY OF AMERICA	ANTTONEN	COPYRIGHT PERMISSION - BOLEY, WISE, HAY	3.5.2.6
87-DCC-0726	05/27/87	DOE-HQ	WHITFIELD	ENVIRONMENTAL MONITORING & MITIGATION PLAN ISSUE RESOLUTION MEETING	3.5.1.3.1
87-DCC-0728	05/27/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - GRIEVES	3.6.1.3.2.8
87-DCC-0729	05/27/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - DANN	3.6.1.3.2.8
87-DCC-0730	05/27/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - CONN	3.6.1.3.2.8

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LETTER NO.	DATE	ORIGINATOR	ADDRESSEE	SUBJECT	FILE NO.
87-DCC-0692	05/28/87	DOE-HQ	ANTTONEN	SOCIOECONOMIC & ENVIRONMENTAL MONITORING & MITIGATION PLAN COMMENT RESOLUTION MEETING	3.5.1.3.1
87-DCC-0699	05/28/87	DOE-HQ	ANTTONEN	DOE INTERPRETATION OF TERMS FROM 10 CFR 60	4.3
R87-2348	05/28/87	ROCKWELL	ANTTONEN	BWIP QUALITY ASSURANCE SURVEILLANCE GROUP INTERIM STATUS REPORT	1.15.1
87-DCC-0708	05/28/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - SCHMIDT	3.6.1.3.2.8
R87-2339	05/28/87	ROCKWELL	ANTTONEN	MILESTONE LOG	3.8.4
87-DCC-0718	05/28/87	WESTON	ANTTONEN	ANNOTATED OUTLINE SCP/CONCEPTUAL DESIGN REPORT (OGR/B-6)	3.5.2
87-DCC-0727	05/28/87	DOE-HQ	OLSON	PROGRAM COST & SCHEDULE PERFORMANCE	3.8.4
87-DCC-0731	05/28/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - TISSUE	3.6.1.3.2.8
87-DCC-0735	05/28/87	KE/PB	ROKKAN	COMMITMENTS/AGREEMENTS - COORDINATING MEETING 5/28/87	3.6.1.3
87-DCC-0693	05/29/87	DOE-HQ	ANTTONEN	DATES TO BE USED IN DEVELOPING SECTION 8.5 OF SCP	3.5.2.5
87-DCC-0704	05/29/87	DOE-NEVADA	WHITFIELD	NEVADA NUCLEAR WASTE PROJECT ENVIRONMENTAL REGULATORY COMPLIANCE PLAN WORKING DRAFT III	3.5.1.3.1
87-DCC-0714	05/29/87	NEZ PERCE	ANTTONEN	REORGANIZATION OF OFFICERS	2.5.3
87-DCC-0716	05/29/87	PNL	WHITFIELD	PNL-BWIP ENVIRONMENTAL STUDIES & COMPLIANCE PROJECT ACTIVITY	3.5.1.3.1
87-DCC-0721	05/29/87	SEPM	ANTTONEN	COPYRIGHT PERMISSION	3.5.2.6
87-DCC-0723	05/29/87	PNL	WHITFIELD	CULTURAL RESEARCH DESIGN	3.5.3.3.1
87-DCC-0732	05/29/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - ISAKARI & GEE	3.6.1.3.2.8
87-DCC-0694	06/01/87	NRC	ANTTONEN	ASSIGNMENT W. BELKE TO NRC-RL OFFICE 6/3-7/87	2.8.1.3
R87-2380	06/01/87	ROCKWELL	ANTTONEN	REQUEST APPROVAL OF EXPEDITED SPECIAL CASE RESTART DRILLING & PIEZOMETER INSTALLATION FOR BOREHOLES	1.15.7

AMC INCOMING CORRESPONDENCE LOG
(CORRESPONDENCE RECEIVED JUNE 1-5, 1987)

LETTER NO.	DATE	ORIGINATOR	ADDRESSEE	SUBJECT	FILE NO.
87-DCC-0712	06/01/87	DOE-HQ	ANTTONEN	HEADQUARTERS RESPONSE TO COMMENTS ON WORKING DRAFT SOCIOECONOMIC MONITORING AND MITIGATION PLAN	3.5.3.3
87-MTDR-18	06/01/87	MACTEC	ANTTONEN	WEEKLY HIGHLIGHTS FOR DOE-HQ REPORT - WEEK OF 5/30	1.22
87-DCC-0713	06/01/87	DOE-RL	OLSON	TECHNICAL EVALUATION OF MACTEC SERVICES CO. COST PROPOSAL FOR SUPPORT SERVICES ON BWIP	1.22
R87-2369	06/01/87	ROCKWELL	ANTTONEN	REQUEST TO ESTABLISH INTERAGENCY AGREEMENT WITH UNITED STATES GEOLOGICAL SURVEY	2.8.2
R87-2386	06/01/87	ROCKWELL	ANTTONEN	REQUEST FOR REVIEW OF DRAFT STUDY PLAN FOR MECHANICAL PROPERTIES DETERMINATION (SD-BWI-SP-007)	3.4.5
87-DCC-0720	06/01/87	OREGON STATE UNIVERSITY	OLSON	COPYRIGHT PERMISSION	3.5.2.6
3055-BWI-704	06/01/87	MORRISON-KNUDSEN	ANTTONEN	COST REPORT FOR MAY	3.6.2.2.4.1
87-DCC-0722	06/01/87	NRC	POWELL	NOTICE OF UPCOMING MEETINGS	2.8.1
87-DCC-0725	06/01/87	DOE-HQ	ANTTONEN	TRANSMITTAL NRC'S COMMENTS ON BWIP QA PLAN	1.15.3
87-DCC-0733	06/01/87	KE/PB	ROKKAN	TRAVEL FOR BWIP - MADSON & NEWCOMB	3.6.1.3.2.8
87-DCC-0734	06/01/87	DOE-HQ	OLSON	REPORT ON PROGRAM COST & SCHEDULE PERFORMANCE	3.8.4
33799-R1	06/02/87	ROCKWELL	ANTTONEN	REVIEW DRAFT REPORT "WASTE MANAGEMENT SYSTEM DESCRIPTION - WASTE MANAGEMENT RISK CHARACTERIZATION PROGRAM"	3.1.5
87-DCC-0717	06/02/87	DOE-HQ	HIGGINS	INFORMATION MANAGEMENT DIVISION - OFFICE LOCATION & PHONES	3.8
R87-2047	06/02/87	ROCKWELL	ANTTONEN	MONTHLY END FUNCTION REPORT	1.8.1.2
R86-2633 R53	06/02/87	ROCKWELL	ANTTONEN	SCP STATUS REPORT	3.5.2.1
R87-2421	06/02/87	ROCKWELL	ANTTONEN	STATUS REPORT - SITE SUBSYSTEM RADIONUCLIDE SORPTION CHARACTERISTICS	3.3.4
3055-BWI-705	06/02/87	MORRISON-KNUDSEN	ANTTONEN	REQUEST FOR SUPPORT SERVICES NO. 124, REV. 2	3.6.2.2.2.2

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LETTER NO.	DATE	ORIGINATOR	ADDRESSEE	SUBJECT	FILE NO.
R87-2432	06/03/87	ROCKWELL	ANTTONEN	IMPLEMENTATION BWIP FACILITIES RESOURCE ACQUISITION PLAN	3.8.1.3
33638,R1	06/03/87	ROCKWELL	ANTTONEN	INFORMATION ON CRITICALITY STUDIES	3.4.12
87-DCC-0719	06/03/87	PACIFIC NORTHWEST LABORATORY	ANTTONEN	STATEMENT OF WORK/MANAGEMENT PLAN REVIEW - FY 87 BUDGET CHANGE REQUEST	1.4.2
R87-2427	06/03/87	ROCKWELL	ANTTONEN	CHANGE REQUEST 00631 - PROJECT ASSURANCE & TRAINING	3.8.1
R87-2437	06/03/87	ROCKWELL	ANTTONEN	CHANGE REQUEST 00632 - REVISE DRILLING PLANS	3.8.1
87-DCC-0724	06/04/87	DOE-HQ	ANTTONEN	SETTING PRIORITIES & SCHEDULES FOR BWIP SCP REVISIONS	3.5.2.2.4
33363-R1	06/04/87	ROCKWELL	ANTTONEN	INFORMATION SYSTEM LIFE CYCLE PLAN - DOE-RL 86-9-01	1.15.7
R87-2452	06/04/87	ROCKWELL	ANTTONEN	SCP CHAPTER 3	3.5.2
33858-R1	06/04/87	ROCKWELL	ANTTONEN	ACTION ITEMS FOR DOE/AFFECTED PARTIES MEETING ON PRE-EXPLORATORY SHAFT HYDRAULIC TESTING	3.3.4
R87-2475	06/05/87	ROCKWELL	ANTTONEN	REQUEST REVIEW DRAFT STUDY PLAN SD-BWI-SP-047, CONSTITUTIVE MODEL DEVELOPMENT STUDY PLAN	3.3.3.4

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DATE	ORIGINATING COMPANY	AUTHOR	ADDRESSED TO	ORGANIZATION	SUBJECT	FILE NO.
05/27/87	DOE-RL	RP SAGET	DIRECTOR	PNL	DOE-RL QA AUDIT 8701, EVALUATION OF PNL CORRECTIVE ACTIONS	1.15.1/QSD-155
05/28/87	DOE-RL	EJ RILEY	GENERAL MANAGER	ROCKWELL	AGREEMENTS FROM RESTART MEETING	1.15.7/BWI-09
06/01/87	DOE-RL	JM KOVACS	JP KNIGHT	DOE-HQ	NRC DATA EXAMINATION FOR HYDRAZINE EXPERIMENTS	3.5.2.3.4/LES-87
06/01/87	DOE-RL	TM HENNIG	GENERAL MANAGER	ROCKWELL	AGREMENTS FROM QA MEETING	1.15/QSD-156
06/01/87	DOE-RL	RD LARSON	PRESIDENT	WESTINGHOUSE	BWIP CORRESPONDENCE CONTROL	1.0
06/01/87	DOE-RL	RP SAGET	GENERAL MANAGER	ROCKWELL	BWIP DOCUMENT REVIEW - PMPM 1-114, REV. 2, "PROJECT MANAGEMENT AND WORK PROCESS CONTROL"	1.15.4/QSD-157
06/01/87	DOE-RL	PH TURNER	KH JACKSON	DOE-RL	REQUEST FOR Q CLEARANCE - DAVID ARTHUR MYERS	1.0/AMC-401
06/02/87	DOE-RL	JJ KRUPAR	GENERAL MANAGER	ROCKWELL	ACTION ITEM NO. 3 FROM THE APRIL 21-24, 1987 PRAM MEETING	3.1.5.7/LES-89
06/02/87	DOE-RL	JE MECCA	GENERAL MANAGER	ROCKWELL	SCP Q-LIST METHODOLOGY	3.5.2.5/LES-88
06/02/87	DOE-RL	CK KASCH	GENERAL MANAGER	ROCKWELL	BWIP DOCUMENT REVIEW - RHO-QA-MA-3, REV 4, "BWIP QUALITY ASSURANCE PROGRAM REQUIREMENTS MANUAL"	1.15.3/QSD-159
06/03/87	DOE-RL	DK MARJANIEMI	GENERAL MANAGER	ROCKWELL	ACTIVITIES ON GABLE MOUNTAIN	3.3/GTB-57
06/03/87	DOE-RL	RP SAGET	GENERAL MANAGER	ROCKWELL	DOE-RL QUALITY SYSTEMS DIVISION REVIEW COMMENTS ON CARs 87-002 AND 87-003	1.15.1/QSD-160
06/03/87	DOE-RL	JE MECCA	CONTRACTORS	VARIOUS	IMPLEMENTATION OF THE BWIP WORK FORCE SURVEY	3.5.3.3/LES-90
06/03/87	DOE-RL	EW HIGGINS	ADDRESSEES	DOE-RL	MANDATORY TRAINING CLASS	1.21/AMC-402
06/03/87	DOE-RL	JH ANTTONEN	PUBLISHERS	VARIOUS	COPYRIGHT PERMISSION	3.5.2.6/AMC-403-40
06/04/87	DOE-RL	DK MARJANIEMI	GENERAL MANAGER	ROCKWELL	REVIEW OF UNSOLICITED PROPOSAL ON SEDIMENTATION AND TECTONICS IN THE REPUBLIC GRABEN	3.3.5/GTB-58
06/04/87	DOE-RL	EW HIGGINS	GENERAL MANAGER	ROCKWELL	REPOSITORY LITIGATION ACTIONS (DISCOVERY)	1.23/AMC-410
06/04/87	DOE-RL	DK MARJANIEMI	RV SMITH	WASH STATE UNIV	RECEIPT OF UNSOLICITED PROPOSAL	3.3.5/GTB-59

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DATE	ORIGINATING COMPANY	AUTHOR	ADDRESSED TO	ORGANIZATION	SUBJECT	FILE NO.
06/04/87	DOE-RL	RP SAGET	OL OLSON	DOE-RL	QUALITY AUDIT FINDING QSD-063-01 RESPONSE	1.15.1/QSD-161
06/05/87	DOE-RL	ML POWELL	RT HALFMOON	NEZ PERCE	DOE COORDINATING GROUPS	2.5.3/AMC-411