

WM DOCKET CONTROL
CENTER

'85 MAY 21 P3:29

Everett Wick
NRC
Mailstop 623-SS
7915 Eastern Ave.
Silver Spring, MD 20901

Dear Mr. Wick,

I have enclosed the listing of reference material supplied to us by you and marked the material that we presently have with "NBS". In addition to this list, I have made up a compilation of reference materials not included in the former list that we now also have at the NBS.

Stephen C. O'Connor
National Bureau of Standards
Bldg 223/B-266
Gaithersburg, MD 20899

WM-EP5
WM Record File
A4171
NBS

WM Project 10, 11, 16
Docket No.

PDR ✓
LPDR ✓ (B, N, S)

Distribution:

Wick

(Return to WM, 623-SS)

Sincerely,



Steve O'Connor

8506060477 850521
PDR WMRES EUSNBS
A-4171 PDR

1978

CATEGORIES OF WASTE PACKAGE RELATED REPORTS

I NRC Products

1. 10 CFR 60, Disposal of High-Level Radioactive Waste in Geologic Repositories - Technical Criteria 1/1/84
~~June 1983~~
 2. Part C - Rationale for the Performance Objectives in 10 CFR Part 60 (Disposal of High Level Radioactive Wastes in Geologic Repositories) August 1982
 3. 40 CFR 191 (Environmental Protection Agency), Proposed Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes December 1982
 4. Issue-oriented Site Technical Positions (ISTPs)
Basalt Waste Package (Draft), September 1984
Tuff Waste Package (Draft), September 1984
Salt Waste Package (Draft), September 1984
Basalt Geochemistry (Draft), September 1984
Tuff Geochemistry (Draft), September 1984
Salt Geochemistry (Draft), September 1984
 5. Generic Technical Positions (GTPs)
Waste Package Reliability October 1984
 6. Corrosion of Cast Iron and Low Carbon Steel Nuclear Waste Containers in a Basalt Repository August 1982
 7. BWIP Site Characterization Analysis, NUREG 0960 April 1983
 8. HLW Data Base Requirements Analysis, T. Sullivan, BNL Nov. 14, 1984
- Determination of Radionuclide Solubility in Groundwater for Assessment of High-Level Waste Isolation-Technical Position November 1984

II NRC Contractor Waste Package Related Reports

- o Nuclear Waste Management Technical Support in the Development of Nuclear Waste Form Criteria for the NRC NUREG/CR-2333
BNL/NUREG-51458
February 1982
vol 1
vol 2
- o Review of DOE Waste Package Program National Waste Package Program NUREG/CR-2482
Feb 1982 Vol 1
Apr 1983 Vol 2
Mar 1983 Vol 3
Sep 1983 Vol 4
Aug 1984 Vol 5

o Waste Package Verification Tests-- Packaging Material Testing	NUREG/CR-2755 BNL/NUREG-51544	February 1983
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o Review of Waste Package Verification Tests, Semi-Annual Report	NUREG/CR-3091	Apr 1983 Vol 1 Aug 1983 Vol 2 Feb 1984 Vol 3 Dec. 1984 Vol 4
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Review of DOE Waste Package Work in Support of Environmental Analysis Report Evaluation (Draft), Brookhaven National Laboratory		June 1984
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b) RES

o Uncertainties in Source Term Estimation		January 1985*
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NRC Contractor Waste Package Related Reports (continued)

NBS o Long-Term Performance of Materials Used for HLW Packaging	NUREG/CR-3427 Volumes I-IV	June 1984
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NUREG-1076 (Review Draft), Draft Technical Position on Repository Environmental Parameters Relevant to Assessing the Performance of High Level Waste Packages, H. C. Claiborne, A. G. Croff, J. G. Griess and F. J. Smith, ORNL		May, 1984
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Final Draft, The Role of Fault Trees and Event Trees in Depicting Failure of a High-Level Radioactive Waste Package in a Basalt Repository (and Appendixes), the Aerospace Corporation.		August 1984
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Methodologies for Assessing Long-Term Performance of High-Level Radioactive Waste Packages, Interim Report (Draft), the Aerospace Corporation		July 1984.
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III Applicable Documents from the Annual Proceedings of the International
Symposium on the Scientific Basis for Nuclear Waste Management, held
in Boston, Massachusetts, as part of the Annual Meeting of the Materials
Research Society

Volume 3, Proceedings of 1980 Symposium, Edited by John G. Moore (ORNL), Plenum		March 1980
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Volume 6, Proceedings of 1981 Symposium, Edited by Stephen V. Topp (SRL), North Holland		1982
--	--	------

Volume 15, Proceedings of 1982 Symposium, Edited by Douglas G. Brookings, Univ. of New Mexico, North Holland		1983
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*Projected Issue Date

Volume 26, Proceedings of 1983 Symposium,
 Edited by Gary L. McVay, Battelle Pacific Northwest
 Laboratory, North Holland

1984

IV DOE and DOE Contractor Documents

1. DOE/RW-0017 Draft Environmental Assessment
 Reference Repository Location
 Hanford Site, Washington *DEC 1983* ~~December 1984~~
2. DOE/RW-0012 Draft Environmental Assessment
 Yucca Mountain Site, Nevada *DEC 1983* ~~December 1984~~
3. DOE/RW-0014 Draft Environmental Assessment
 Deaf Smight County Site, Texas *DEC 1983* ~~December 1984~~
4. BMI/ONWI-521 Conceptual Waste Package Interim Product
 Specifications and Data Requirements for
 Disposal of Glass Commercial High-Level
 Waste Forms in Salt Geologic Repositories,
 Technical Report October 1983
5. ONWI 200(3) Bibliography of Studies for the Salt
 Repository Project Office of the Civilian
 Radioactive Waste Management Program,
 4/78-3/84, by Battelle June 1984
6. ONWI 464 Conceptual Waste Package Interim
 Product Specifications and Data
 Requirements for Disposal of Borosilicate
 Glass Defense High-Level Waste Forms in
 Salt Geologic Repositories June 1983
7. ONWI-490 ONWI 00041 830800
 Waste Package Materials for Testing for a Salt Repository: 1982 Status
 Report (fiche only)
8. PNL 5157 Final Report of the Defense HLW Leaching
 Mechanisms Program, compiled by
 J. E. Mendel August 1984
9. Burnham 01782 831100
 Basalt Waste Isolation Project Review by Pacific Northwest
 Laboratory's Review Team, for DOE
10. Bramman 01560 750000
 Redistribution Of Fuel And Fission Products In Irradiated Oxide Fuel
 Pins, Journal Of The British Nuclear Energy Society, Vol. 14, p. 63
11. RO-BW-SA-205A P Topcubasi 01423 820800
 Thermomechanical Simulation Of A Nuclear Waste Canister In A Repository
 In Basalt, by Rockwell for DOE

*will
 order
 through
 library*

NRC COMMENTS ON

DOE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE
DAVIS CANYON SITE 3/20/85

LAVENDER CANYON SITE 3/20/85

RIGHTON DOME SITE 3/20/85

SWISHER COUNTY SITE 3/20/85

VACHERIE DOME SITE 3/20/85

CYPRESS CREEK BOMESITE 3/20/85

NUREG/CR-2808

WASTE PACKAGE
RELIABILITY

10/84

FIN-3164

1/24/85

1/29/85

5/1/85

3/26/85

~~1/1/85~~

FIN-3167

1/24/85

2/26/85

3/26/85

1/16/85

5/1/85

~~2/1/85~~

DOE
3164 = Review of ~~DOE~~
waste package program

3167's review of waste package
verification tests

NUREG/CR-3405 Vol. 1

Long term performance of materials
used for high level waste packaging

NUREG/CR-3219 - Vol. 1

~~Vol. 1~~
~~Vol. 2~~

Waste package performance after
Repository Closure

FIN A-4171

= Evaluation and compilation of DOE
Waste package test data

1/14/85

Review
of

FIN A-1266

4/10-12/85

(in binder)

Performance assessment methodology
development for waste isolation in
alternate media

ANL-84-15

8/84

Nuclear Technology programs Quarterly
progress report

ANL-83-68

1/84

Fuel cycle programs
Quarterly progress report

IV DOE and DOE Contractor Reports (continued)

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|-----|---|------------|-------|--------|
| | RHO-BW-SA-210 P | Salter | 00860 | 820300 |
| 12. | Application of Systems Analysis to Develop Engineered Systems Performance Requirements for a Hard Rock Nuclear Waste Repository, by Rockwell | | | |
| | ONWI-275 | McVay | 01437 | 811000 |
| 13. | Elemental Release From Glass And Spent Fuel, By Office Of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, OH | | | |
| | ONWI-286 | Burkholder | 01438 | 820700 |
| 14. | Engineered Components For Radioactive Waste Isolation Systems--Are They Technically Justified?, By Office of Nuclear Waste Isolation, Battelle Memorial Institute | | | |
| | DP-1606 | Baxter | 01457 | 810600 |
| 15. | Description Of DWPF Reference Waste Form And Canister, by E. I. du Pont de Nemours & Company, Savannah River Laboratory, Aiken, SC | | | |
| | RHO-BW-SA-195A P | Ulmer | 01410 | 830800 |
| 16. | High-Temperature-High-Pressure Redox Potential And pH Sensors, by Rockwell for DOE | | | |
| | RHO-BW-CR-136 P | Bolmgren | 00979 | 821000 |
| 17. | Waste Package Conceptual Designs for a Nuclear Repository in Basalt. | | | |
| | MREVA | Stobbs | 01563 | 620000 |
| 18. | Effects Of Radiation Of Metallic Corrosion, Metallurgic Reviews, Vol. 7, No. 25 | | | |
| | RHO-BW-SA-219 P | Wood | 01421 | 830200 |
| 19. | Experimental Investigation Of Sodium Bentonite Stability In Hanford Basalt, by Rockwell for DOE | | | |
| | RHO-BW-SA-246 P | Babad | 00883 | 820900 |
| 20. | Basalt Waste Isolation Project Waste Package and Site Geochemistry Issues and Plans for Their Resolution, by Rockwell for DOE | | | |
| | RHO-BW-SA-247 P | Cottam | 00884 | 820900 |
| 21. | Basalt Waste Isolation Project Repository Issues and Plans for Resolution, by Rockwell for DOE | | | |
| | RHO-BW-SA-253 P | Meyers | 00890 | 820900 |
| 22. | Comparison of the Hydrothermal Stability of Simulated Spent Fuel and Borosilicate Glass in a Basaltic Environment, by Rockwell for DOE | | | |
| | RHO-BW-SA-254 P | Smith | 00891 | 820900 |
| 23. | Waste Package Conceptual Designs for a Repository Located in Basalt, by Rockwell for DOE | | | |

IV DOE and DOE Contractor Reports (continued)

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|-----|---|-------------|-------|--------|--------|
| | RHO-BW-SA-255 P | Wood | 00892 | 820900 | |
| 24. | Testing of Candidate Waste Package Backfill and Canister Materials for Basalt, by Rockwell for DOE | | | | |
| | RHO-BW-SA-283 P | Lane | 01774 | 830300 | |
| 25. | Preliminary Assessment of Oxygen Consumption and Redox Conditions in a Nuclear Waste Repository in Basalt, by Rockwell, presented at the American Chemical Society Symposium in Seattle, WA on 3/20-25/83 | | | | |
| | RHO-BW-SA-280 P | Anderson | 01650 | 830200 | |
| 26. | Conceptual Design of a Waste Package for Emplacement in Basalt, for DOE by Rockwell | | | | |
| | RHO-BW-SA-281 P | BWIP Staff | 00959 | 821200 | |
| 27. | Bibliography and Documents Issued List Through Fiscal Year 1982 | | | | |
| | RHO-BW-SA-313 P | Allen | 01746 | 831100 | 840911 |
| 28. | Experimental Studies of Packing Material Stability, by Rockwell for DOE | | | | |
| | RHO-BW-SA-314 P | Anantatmula | 01718 | 831100 | |
| 29. | Corrosion Behavior of Low-Carbon Steels in Grande Ronde Basalt Groundwater in the Presence of Basalt-Bentonite Packing, by Rockwell for DOE | | | | |
| | RHO-BW-SA-315 P | Gray | 01745 | 831100 | |
| 30. | Gamma Radiolysis Effects on Grande Ronde Basalt Groundwater, for Rockwell (PNL-SA-11415) | | | | |
| | RHO-BW-SA-316 P | Nelson | 01764 | 831100 | 840928 |
| 31. | Irradiation-Corrosion Evaluation of Metals for Nuclear Waste Package Applications in Grande Ronde Basalt Groundwater, for Rockwell | | | | |
| | RHO-BW-SA-317 P | Grandstaff | 01738 | 831100 | |
| 32. | Reactions in the System Basalt/Simulated Spent Fuel/Water, for Rockwell | | | | |
| | RHO-BW-ST-21 P | Wood | 00911 | 820700 | |
| 33. | Evaluation of Sodium Bentonite and Crushed Basalt as Waste Package Backfill Materials, by Rockwell for DOE | | | | |
| | RHO-BW-ST-25 | Anderson | 00909 | 820200 | |
| 34. | Conceptual Design Requirements for Spent Fuel, High-Level Wastes, and Transuranic Wastes Packages, by Rockwell for DOE | | | | |
| | RHO-BW-ST-26 P | Crisman | 00912 | 820000 | |
| 35. | Native Copper Deposits of the Portage Lake Volcanics, Michigan: Their Implications with Respect to Canister Stability for Nuclear Waste Isolation in the Columbia River Basalts Beneath the Hanford Site, Washington, by Rockwell for DOE | | | | |

IV DOE and DOE-Contractor Reports (continued)

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|-----|--|-------------|-------|--------|---|
| | RHO-BW-ST-27 P | Palmer | 01426 | 820600 | |
| 36. | Characterization Of Reference Materials For The Barrier Materials Test Program, by Rockwell for DOE | | | | |
| | RHO-BWI-ST-7 | Smith | 00139 | 800500 | X |
| 37. | Engineered Barrier Development for a Nuclear Waste Repository Located in Basalt An Integration of Current Knowledge, by Rockwell for DOE | | | | |
| | SD-BWI-TI-249 | Anantatmula | 01794 | 841005 | |
| 38. | Preliminary Reliability Analysis of Container Lifetime | | | | |
| | SD-BWI-TI-190 | Myers | 01693 | 840207 | |
| 39. | The Effect of Basalt on the Release of ¹³⁷ Cs, ²³⁷ Np, and ²³⁹ Pu from Borosilicate Glass Under Hydrothermal Conditions, by Rockwell | | | | |
| | DOE/RW-0005 | Doe | 01035 | 840400 | |
| 40. | Mission Plan for the Civilian Radioactive Waste Management Program - Volume I - Overview and Current Program Plans, by DOE | | | | |
| | CONF-831217 | Doe | 01034 | 840200 | |
| 41. | Proceedings of the 1983 Civilian Radioactive Waste Management Information Meeting, 12/12-15/83, Washington, D.C., sponsored by DOE, Office of Civilian Radioactive Waste Management | | | | |
| | SD-BWI-TP-022 | Rockwell | 01682 | 840300 | |
| 42. | Barrier Materials Test Plan, by Rockwell for DOE (Encl--memo to Vieth fm Bennett of 3/30/84, File 101.2) | | | | |
| | ONWI-449 | ONWI | 01028 | 830300 | X |
| 43. | Some Characteristics of Potential Backfill Materials (fiche only) | | | | |
| | ONWI-452 | INTERA | 01010 | 830400 | |
| 44. | WAPPA: A Waste Package Performane Assessment Code, by INTERA for Batelle/ONWI | | | | |
| | SAND81-1677 | Glass | 01077 | 811200 | X |
| 45. | Effects of Radiation on the Chemical Environment Surrounding Waste Canisters in Proposed Repository Sites and Possible Effects on the Corrosion Process, by Sandia National Laboratories for DOE | | | | |
| | ONWI-501 | ONWI | 01026 | 830900 | X |
| 46. | Methodology for Predicting the Life of Waste-Package Materials & Components Using Multifactor Accelerated Life Tests (fiche only) | | | | |
| | UCID-20174 | Glass | 01074 | 840600 | |
| 47. | Electrochemical Determination of the Corrosion Behavior of Candidate Alloys Proposed for Containment of High Level Nuclear Waste in Tuff, by LLNL | | | | |

IV DOE and DOE Contractor Reports (continued)

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|-----|--|------------|-------|---------------|
| | SD-BWI-PAP-001 Rev 1 | Sonnichsen | 01586 | 840702 |
| 48. | BWIP Performance Assessment Plan, by Rockwell for DOE (also version dated May 1983) | | | |
| | SD-BWI-PMP-003 | BWIP Staff | 01677 | 830421 |
| 49. | Project Management Plan for the Hydrothermal Testing of Waste-Barrier-Rock Interactions Using Fully Radioactive Waste Forms, by Rockwell | | | |
| | SD-BWI-TI-140 | Westerman | 01791 | 830831 |
| 50. | Irradiation-Corrosion of Iron-Base Alloys in Hanford Grande Ronde Groundwater | | | |
| | SD-BWI-TI-141 | Meyers | 00785 | 830923 |
| 51. | Hydrothermal Reaction of Simulated Waste Forms with Barrier Materials Under Conditions Expected in a Nuclear Waste Repository in Basalt, by Rockwell for DOE | | | |
| | SD-BWI-TI-151 | Westerman | 01792 | 840515 |
| 52. | Elevated-Temperature Corrosion of Iron-Base Alloys in Hanford Grande Ronde Groundwater | | | |
| | SD-BWI-TI-159 | Fish | 01793 | 840104 |
| 53. | Preliminary Corrosion Models for BWIP Canister Materials | | | |
| | TR-29 | Goodwin | 01585 | 800900 |
| 54. | Maximum Total Uranium Solubility Under Conditions Expected In A Nuclear Waste Vault, by Atomic Energy Of Canada Limited, Pinawa, Manitoba ROE 110 | | | |
| | RHO-BW-SA-330 P | Smith | 01431 | 831214 |
| 55. | Waste Packages for a Repository Located in Basalt, by Rockwell for DOE | | | |
| | RHO-BW-SA-331 P | Wood | 01462 | 831214 |
| 56. | The Near-Field Waste Package Environment in Basalt and Its Effect on Waste Form Releases, by Rockwell for DOE | | | |
| | RHO-BW-ST-38 P | Apted | 01391 | 820700 |
| 57. | Comparison of the Hydrothermal Stability of Simulated Spent Fuel and Borosilicate Glass in a Basaltic Environment, by Rockwell for DOE | | | |
| | RHO-BW-ST-49 P | Myers | 01715 | 830300 |
| 58. | Techniques for Monitoring Eh-pH Conditions in Hydrothermal Experiments, by Rockwell for DOE | | | |
| | RHO-BW-ST-42 P | Davis | 01714 | 830900 |
| 59. | Delphi Analysis of Radionuclide Release Scenarios for a Nuclear Waste Repository at the Hanford Site, Washington State - An Initial Iteration, by Rockwell for DOE | | | |
| | RHO-BWI-ST-15 | Anderson | 00192 | 810500 810910 |
| 60. | Corrosion Tests of Canister and Overpack Materials in Simulated Basalt Groundwater, by Rockwell for DOE | | | |

IV DOE and DOE Contractor Reports (continued)

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|-----|--|--|-------|--------|--------|
| | RHO-BWI-ST-10 | Wood | 00119 | 800700 | 811217 |
| 61. | Estimation of Waste Package Performance for a Nuclear Waste Repository in Basalt, by Rockwell for DOE | | | | |
| | RHO-BW-SA-301A P | McKeon | 01419 | 830500 | |
| 62. | Stability Of Spent Fuel In A Nuclear Waste Repository Located In Basalt, by Rockwell for DOE | | | | |
| | RHO-BW-SA-302A P | Holloway | 01397 | 830600 | |
| 63. | Dissolution Of Borosilicate Glass In The Presence Of Basalt And Groundwater At 300 Bars And 100°-300°C, for Rockwell by DOE | | | | |
| | RHO-BW-SA-303 P | Smith | 01416 | 830400 | |
| 64. | Repository And Waste Package Designs For High-Level Nuclear Waste Disposal In Basalt, by Rockwell for DOE | | | | |
| | RHO-BW-SA-275 P | Smith | 01673 | 830200 | 840220 |
| 65. | Progress in the Development of Waste Package Performance Requirements for a Repository Located in Basalt - Presented at Waste Management '83, University of Arizona on 2/27 to 3/3/83; by Rockwell for DOE (Tech Review by K. Chang) | | | | |
| | RHO-BW-SA-245 P | Price | 00882 | 820900 | |
| 66. | Basalt Waste Isolation Project Site Issues and Plans for Their Resolution, by Rockwell for DOE | | | | |
| | RHO-BW-SA-228 P | Apted | 00960 | 820500 | |
| 67. | Overview of Hydrothermal Testing of Waste Package Barriers Materials By The Basalt Waste Isolation Project (Also PNL4382) | | | | |
| | RHO-BW-SA-224 P | Mill | 00932 | 820600 | |
| 68. | Photograph Reference Waste Package Conceptual Design Nuclear Waste Repository in Basalt, by Rockwell for DOE | | | | |
| 69. | TR-128 | The Dissolution of Irradiated UO ₂ Fuel Under Hydrothermal Oxidizing Conditions, Whiteshell Nuclear Research Establishment, Atomic Energy of Canada Limited (AECL) Pinawa, Manitoba - Johnson | | | 1981 |
| 70. | TR-29 | Maximum Total Uranium Solubility Under Conditions Expected in a Nuclear Waste Vault, Goodwin, AECL | | | 1980 |
| | PNL-SA-11713 | Westerman | 00103 | 831100 | |
| 71. | Evaluation of Iron-Base Materials for Waste Package Containers in a Salt Repository, presented at the 1983 Annual Meeting, MRS, Nuclear Waste Management in Boston, MA, 11/14-17/83 | | | | |