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NUCLEAR REGULATORY COMMISSION
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NOTE TO: File

FROM: Nancy Still
Policy and Program Control Branch
Division of Waste Management

SUBJECT: WASTE PACKAGE MODELING DISCUSSION

On 2/27/86, a meeting was held at NRC, Silver Spring, Maryland regarding recent progress in the development of models to predict radionuclide release from the waste packages. This meeting was organized by K. Chang, WMEG. Professor Thomas H. Pigford, University of California, Berkeley, and Dr. Mick Apted, PNL (a DOE contractor) gave presentations.

The enclosed list of publications was distributed by Professor Pigford. These publications can be obtained by contacting the Department of Nuclear Engineering, University of California, Berkeley, California 94720.

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Enclosure: List of Publications

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2/19/86

DEPARTMENT OF NUCLEAR ENGINEERING

UNIVERSITY OF CALIFORNIA

RECENT PUBLICATIONS IN FUEL CYCLES AND WASTE MANAGEMENT

Books

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Pigford, T. H., J. O. Blomeke, T. L. Brekke, G. A. Cowan, W. E. Falconer, N. J. Grant, J. R. Johnson, J. M. Matusek, R. R. Parizek, R. L. Pigford, D. E. White, "A Study of the Isolation System for Geologic Disposal of Radioactive Wastes", National Academy Press, Washington, D.C., 1983.

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Harada, M., P. L. Chambre', M. Foglia, K. Higashi, F. Iwamoto, D. Leung, T. H. Pigford, and D. Ting, "Migration of Radionuclides Through Sorbing Media: Analytical Solutions - I", LBL-10500, 1980, 233 pages.

Pigford, T. H., P. L. Chambre', M. Albert, M. Foglia, M. Harada, F. Iwamoto, T. Kanki, D. Leung, S. Masuda, S. Muraoka, and D. Ting, "Migration of Radionuclides Through Sorbing Media: Analytical Solutions - II", LBL-11616, 1980, 416 pages.

Chambre', P. L., T. H. Pigford, Y. Sato, A. Fujita, H. Lung, S. Zavoshy, R. Kobayashi, "Analytical Performance Models", LBL-14842, 1982, 411 pages.

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Lieberman, J. A., S. N. Davis, D. R. F. Harleman, R. L. Keeney, D. C. Kocher, D. Langmuir, R. B. Lyon, W. W. Owens, T. H. Pigford, W. W.-L. Lee, "Performance Assessment National Review Group", Weston Report RFW-CRWM-85-01, 1985, 114 pages.

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Iwamoto, F., T. Kanki, P. L. Chambre', T. H. Pigford, and D. Leung, "Solubility Limited Migration of a Radionuclide Chain Through a Geologic Medium", Trans. Amer. Nucl. Soc., 38, 161-163, 1981.

Ting, D. K., P. L. Chambre', and T. H. Pigford, "Migration of Long Actinide Chains in Geologic Media", Trans. Amer. Nuc. Soc. 38, 163-164, 1981.

Kanki, T., A. Fujita, P. L. Chambre', and T. H. Pigford, "Radionuclide Transport Through Fractured Rock", Trans. Am. Nuc. Soc., 39, 152, 1981.

Chambre', P. L., D. K. Ting, and T. H. Pigford, "Two-Dimensional Migration of Long Actinide Chains Through Geologic Media", Trans. Amer. Nuc. Soc. 39, 154, 1981.

Yoi, J. and T. H. Pigford, "Water Dilution Volumes for High-Level Wastes", Trans. Amer. Nucl. Soc., 39, 176, 1981.

Ting, D. K., P. L. Chambre', and T. H. Pigford, "Radionuclide Migration in a Two-Dimensional Flow Field", Trans. Amer. Nuc. Soc. 40, 156-157, 1981.

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Pigford, T. H., "Technical Analysis of the NRC Staff's Proposed Final Rule for the Disposal of High-Level Radioactive Wastes in Geologic Repositories: Technical Criteria", UCN-NE-4025, University of California, Berkeley, 1981.

Pigford, T. H., P. L. Chambre', Y. Sato, A. Fujita, H. Lung, S. Zavoshy, and R. Kobayashi, "Performance Analysis of Conceptual Geologic Repositories", UCB-NE-4031, University of California, Berkeley, 1981.

Pigford, T. H., "Migration of Brine Inclusions in Salt", Nuclear Technology, 56, 93-101, 1982.

Pigford, T. H., "Reply to Remarks on 'Migration of Brine Inclusions in Salt'", Nuclear Technology, 63, 509-510, 1983.

Pigford, T. H., "Geologic Disposal of Radioactive Waste", Chem. Eng. Prog., 78, 18-26, March 1982.

Fujita, A., P. L. Chambre', and T. H. Pigford, "Cumulative Release of Radionuclide Chains From a Geologic Repository", Trans. Amer. Nucl. Soc., 40, 58, 1982.

Chambre', P. L., T. H. Pigford, and S. Zavoshy, "Solubility-Limited Dissolution Rate in Groundwater", Trans. Amer. Nucl. Soc., 40, 153, 1982.

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Sato, Y., A. Fujita, P. L. Chambre', and T. H. Pigford, "Effect of Solubility-Limited Dissolution on the Migration of Radionuclide Chains", Trans. Amer. Nuc. Soc., 43, 64, 1982.

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Kobayashi, R., Y. Sato, T. Kanki, P. L. Chambre', and T. H. Pigford, "Solubility-Limited Transport of Radionuclides Through Fractured Rock", *Trans. Amer. Nucl. Soc.*, 44, 113, 1983.

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H. C. Lung, P. L. Chambre', and T. H. Pigford, "Nuclide Migration in Backfill With a Non-Linear Sorption Isotherm", *Trans. Amer. Nucl. Soc.*, 45, 107, 1983.

Pigford, T. H., "The National Research Council Study of the Isolation System for Geologic Disposal of Radioactive Wastes", in *Scientific Basis for Nuclear Waste Management VII*, G. L. McVay, ed., 461-486, Elsevier, New York, 1983.

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Pigford, T. H., and B. J. Mann, "Technical Analysis of the EPA Staff's Proposed Draft Standard for the Geologic Disposal of Radioactive Wastes", UCB-NE-4024, University of California, Berkeley, 1983.

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Pigford, T. H., and P. L. Chambre', "Mass Transfer in a Salt Repository", Report LBL-19918, May 1985.

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Ahn, J., P. L. Chambre', and T. H. Pigford, "Transport in Multiply Fractured Rock by Superposition", Report LBL-19850, June 1985.

Kang, C. H., P. L. Chambre', and T. H. Pigford, "One-Dimensional Advective Transport With Variable Dispersion", Report LBL-19849, June 1985.

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