

OAK RIDGE NATIONAL LABORATORY
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OAK RIDGE, TENNESSEE 37831

February 12, 1986

Dr. D. J. Brooks
Geotechnical Branch
Office of Nuclear Material
Safety and Safeguards
U.S. Nuclear Regulatory Commission
Room 623-SS
Washington, D.C. 20555

WM DOCKET CONTROL
CENTER

86 FEB 14 AM 1986

Dear Dave:

Please find enclosed the progress report for the month of January 1986 for B0287, "Technical Assistance in Geochemistry."

Sincerely,

Gary K. Jacobs
Environmental Sciences Division

GKJ/

Enclosure:

Monthly Progress Report For January 1986

- cc: Office of the Director, NMSS (Attn: Program Support Branch)
- Division Director, NMSS Division of Waste Management (2)
- M. R. Knapp, Chief, Geotechnical Branch
- K. C. Jackson, Geotechnical Branch
- J. R. Bradbury, Geotechnical Branch
- Branch Chief, Waste Management Branch, RES
- G. F. Birchard, Waste Management Branch, RES
- M. Siegel, Sandia National Laboratory
- A. D. Kelmers A. P. Malinauskas
- R. E. Meyer S. K. Whatley
- GKJ File

WM-RES
WM Record File
B-0287
ORNL

WM Project 10, 11, 16
Docket No. _____
PDR
LPDR (B, N, S)

Distribution:
D. Brooks Joan-ticket

(Return to WM, 623-SS)

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PDR WMRES EXIORNL
B-0287 PDR

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02/07/86

MONTHLY PROGRESS REPORT FOR JANUARY 1986

PROJECT TITLE: Technical Assistance in Geochemistry
PROJECT MANAGER: G. K. Jacobs
PROJECT STAFF: J. G. Blencoe, R. M. Gove, G. K. Jacobs,
A. D. Kelmers, R. E. Meyer, G. D. O'Kelley,
and K. L. Von Damm
ACTIVITY NUMBER: ORNL #41 88 54 92 4 (FIN No. B0287)
NRC #50 19 03 01

TECHNICAL HIGHLIGHTS:

Task 1 - Hanford Site Geochemical Technical Assistance

As part of his work on the Topical Report related to solubility information for the Hanford Site, J. G. Blencoe reviewed the report Analysis of Solids from Initial 200°C, 30 MPa Hydrothermal Tests with "Fully-Radioactive" Waste Glass and Spent Fuel, SD-BWI-TI-278, Sept. 1985, by L. E. Thomas, B. Mastel, and E. D. Jensen. The detailed Letter Report (LR-287-24) will be forwarded under separate cover.

Task 2 - Yucca Mountain Geochemical Technical Assistance

As part of her work on the Topical Report related to geochemical conditions for the Yucca Mountain Site, K. L. Von Damm reviewed the report Reaction of Bullfrog Tuff with J-13 Well Water at 90°C and 150°C, UCRL-53442, Sept. 1983, by V. M. Oversby and K. G. Knauss. The detailed Letter Report (LR-287-25) will be forwarded under separate cover.

Task 3 - Salt Sites Geochemical Technical Assistance

Nothing significant to report.

Task 4 - Short-Term Technical Assistance

Several reports were reviewed during this month in response to Short-Term Technical Assistance Task Orders. In addition, other reports were also reviewed that were related to spent fuel characteristics and radionuclide releases from the waste package. These Letter Reports are listed below under REPORTS AND PUBLICATIONS and will be forwarded under separate cover.

As requested by a Short-Term TA Task Order, J. G. Blencoe attended a

meeting of the ASTM C26.07 Subcommittee on Nuclear Waste Management and G. K. Jacobs and K. L. Von Damm attended the NRC/DOE Waste Package Workshop for the salt sites. Meeting reports will be forwarded under separate cover.

PROJECT MANAGEMENT:

Nothing to report.

MEETINGS AND TRIPS:

J. G. Blencoe attended a meeting of the ASTM C26.07 Subcommittee on Nuclear Waste Management held in New Orleans on January 14. The purpose of the meeting was to discuss the possible role of ASTM in establishing standard test procedures for waste package components. A meeting report (MR-287-8) will be forward under separate cover.

G. K. Jacobs and K. L. Von Damm attended the DOE/NRC waste package workshop held in Columbus, Ohio January 22-24. A trip report (MR-287-7) will be forward under separate cover.

G. K. Jacobs represented the B0287 project at the NRC/RES workshop on the validation of mathematical models that was held in Bethesda, Maryland during January 24-27.

REPORTS AND PUBLICATIONS:

LR-287-21, by A. D. Kelmers, 'Review of "The Chemical State of the Fission Products in Oxide Fuels," J. Nucl. Matl. 131, 221-246, 1985, by H. Kleykamp.'

LR-287-22, by A. D. Kelmers, 'Review of Derivation of a Waste Package Source Term for NNWSI from Results of Laboratory Experiments, UCRL-92096, Sept. 1985, by V. M. Oversby and C. N. Wilson.'

LR-287-23, by A. D. Kelmers, 'Review of Appendix B, "Spent Fuel Dissolution," in November 1985 Monthly Report from The Aerospace Corporation.'

LR-287-24, by J. G. Blencoe, 'Review of Analysis of Solids from Initial 200°C, 30 MPa Hydrothermal Tests with "Fully-Radioactive" Waste Glass and Spent Fuel, SD-BWI-TI-278, Sept. 1985, by L. E. Thomas, B. Mastel, and E. D. Jensen.'

LR-287-25, by K. L. Von Damm, 'Review of Reaction of Bullfrog Tuff with J-13 Well Water at 90°C and 150°C, UCRL-53442, Sept. 1983, by V. M. Oversby and K. G. Knauss.'

LR-287-26, by K. L. Von Damm, 'Review of "Hydrothermal Interaction of Columbia Plateau basalt from the Umtanum flow (Washington, U.S.A.) with its coexisting groundwater," Chem. Geol. 49, 53-71, 1985, by E. L. Moore, G. C. Ulmer, and D. E. Grandstaff.'

LR-287-27, by G. D. O'Kelley, 'Review of "Aqueous Oxidation - Reduction Kinetics Associated with Coupled Electron - Cation Transfer from Iron-Containing Silicates at 25°C," Geochim. Cosmochim. Acta 49, 1263-1275, 1985, by A. F. White and A. Lee.'

PROBLEM AREAS:

None.

COST/BUDGET REPORT:

Expenditures were \$39.5K for January 1986 and \$181.8K for FY 86 to date. A detailed cost/budget report will be sent under separate cover.