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December 13, 1982

Mr. Seth Coplan
Nuclear Regulatory Commission
Mail Stop 697-SS
Washington, D.C. 20555

Dear Seth,

Attached please find the November Project Status Reports for the Lawrence Berkeley Laboratory's Nuclear Regulatory Commission sponsored programs, FIN B-3109-0 and FIN B-3040-0.

Very truly yours,

Bill Stromdahl

Bill Stromdahl
Program Manager

BS:rmr

Attachment

cc: J. Martin/NRC
H. Miller/NRC

MONTHLY STATUS REPORT

December 13, 1982
Report Period: 1 November - 30 November

NRC TECHNICAL ASSISTANCE - FIN B-3109-0

Task I. Plans for Site Characterization

Camera ready copy of NUREG/CR-2983, "Selected Hydrological and Geochemical Issues in Site Characterization for Nuclear Waste Disposal: Flood Basalts at the Hanford Reservation" has been delivered to NRC. LBL understands NRC may wish to discuss minor changes to this report in early January.

Task II. Geochemistry Research Planning

The letter report, "Diffusional Transport of Radioactive Solutes and Colloids Through a Non-Sorbing Barrier in Spherical Geometry" has been delivered to NRC.

Technical editing of LBL's final report, "Status of Geochemical Problems Relating to the Burial of High-Level Radioactive Waste, 1982" (NUREG/CR-3062) continues at LBL. During the month, NRC/LBL have had further discussions relating to the final form of some sections of this report. Resolution to format and technical issue questions is expected in January.

LBL/NRC review and revision is in process relating to the technical content of the draft letter report, "Geochemistry Research Planning for Underground Storage of High Level Nuclear Waste." Due to the priority of completing NUREG/CR-3062, further work on this draft letter report will be subject to author and editor availability.

Task III. Engineered Barrier Rationale

The two letter reports, "Engineered Barriers: Chemical Aspects" and "Engineered Barriers: Solute Transport Calculations to Measure Barrier Effectiveness" will be available to NRC during January.

Task IV Alternate Geologic Environments

Agreement as to technical content of the draft report, "An Appraisal of Nuclear Waste Isolation in the Vadose Zone in Arid and Semi-Arid Regions" was reached during October. This report has been placed in the technical editing queue.

Towards a Comprehensive Model of Chemical Transport in Porous Media, C.W. Miller, Lawrence Berkeley Laboratory.

- The preliminary mass transfer resistance studies of the radial flow cell were completed. Experimental results for diffusion of CsCl into a 4% Agar gel were compared with a similar experiment on the simple single sided diffusion cell. The results show close agreement, indicating that the radial flow cell operates as it should.

- Research was performed in the area of silicate glasses of uranium(VI) and europium(II). The glasses were prepared in order to obtain preliminary chemical properties data which will be useful in studying the dissolution kinetics of a calcined glass waste package containing these species under repository conditions.

- Results of initial NAA of dike and salt from the Cayuga Mine indicate Fe and Co have migrated at least a short distance (order of one meter) from the dike into the salt.