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APR 01 1985

Ms. Susan K. Whatley
Oak Ridge National Laboratory
P.O. Box X
Chemical Technology Division
Building 4500 N, MS 211
Oak Ridge, TN 37831

Dear Ms. Whatley:

SUBJECT: REVIEW OF FEBRUARY MONTHLY PROGRESS REPORT FOR B0290 "LABORATORY EVALUATION OF DOE RADIONUCLIDE SOLUBILITY DATA AND SELECTED RETARDATION PARAMETERS, EXPERIMENTAL STRATEGIES, LABORATORY TECHNIQUES AND PROCEDURES"

I have reviewed the February, 1985 Monthly Progress Report dated March 11, 1985 for the subject contract. Based on my review, progress to date is satisfactory.

For the technetium studies, it is surprising that the sorption ratios apparently are not dependent on grain size. Neptunium sorption ratios, on the other hand, were strongly dependent on grain size. The statement is made that these technetium experiments will be repeated, but no justification for this action is given in the report. Is it that you do not believe the results? If so, why? The purpose of the contract is that to uncover problem areas in experimental studies that should be addressed by the DOE. The observation that the sorption characteristics of one radionuclide are dependent on particle size whereas those of another radionuclide are independent may be as far as the work in the contract need go. The statement that the apparent concentration limit for Tc(IV) needs to be confirmed also requires some justification. The apparent concentration limit for Tc(IV) you list in this report agrees with the value in the draft annual report, so why repeat the experiment?

For the uranium studies, I note that the experiments were done at 60°C and the calculations were for 25°C. Do you plan to do the calculations for 60°C also? Are you suggesting that there is a discrepancy between what is observed experimentally and what is calculated? A more detailed explanation seems appropriate.

The discoveries concerning neptunium speciation may be extremely important. How might this affect the results of previous experiments? I will discuss this problem with you later this week.

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Enclosed is a markup of the annual report for B0290. The draft appears to be in good shape as evidenced by the small number of comments I made. However, I would like you to note one comment in particular. I suggest the statement about "the reducing condition expected in the repository" be carefully worded to state the expectation is on the part of the DOE.

The action taken by this letter is considered to be within the scope of the current contract B0290. No change to cost or delivery of contract products is authorized. Please notify me immediately if you believe this letter would result in changes to costs or delivery of contract products.

Sincerely,

Original Signed By

John W. Bradbury
Geochemistry Section
Geotechnical Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

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