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AUG 31 1984

Ms. Susan K. Whatley, Manager  
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WM-RES  
 WM Record File  
 B-0290  
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Distribution:

Dear Ms. Whatley:

Subject: Contract B-0290, "Laboratory Evaluation of DOE Radionuclide Solubility Data and Selected Retardation Parameters, Experimental Strategies, Laboratory Techniques and Procedures"

(Return to WM, 623-SS)

I have reviewed the July, 1984 Monthly Progress Report for the subject contract dated August 7, 1984. Based on my review, progress to date is satisfactory. I have the following comments:

- o How do the results of the technetium studies compare with those of DOE? In the monthly report it was stated that no sorption was observed for the two highest initial pertechnetate concentrations. Isn't it likely that the amount of technetium subtracted from the solution is insignificant when compared to the solution concentration? Thus, sorption is occurring under these conditions, but its effect is minimal in these batch studies. Column studies might produce a different result.
- o How do the results of the uranium studies compare with those of DOE? How much precipitate do you have in these experiments and what techniques are you using to characterize this solid?
- o Why wasn't any progress made in the neptunium studies in July? Is there a problem?
- o In the chromatographic studies, is there a way to separate the temperature effects on reaction rates versus "equilibrium" radionuclide partitioning? Has the flow rate been varied? Have batch experiments been performed to steady-state conditions and, if so, do they support the results of the column tests? How are Rs and Rf determined? Is there a theoretical basis for the asymmetry and broadening of elution peaks with increased temperature?

These questions may reflect a lack of understanding on my part of some of the details of your experimental procedures. This deficiency may be corrected by a

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