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Mr. Robert Bills
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Dear Bob:

This letter comments on the Actinide Source Term Program position paper, rev. 1 (Nov. 15, 1994) (the "draft"), which was discussed at the December 8-9, 1994 SPM stakeholders meeting in Carlsbad.

The subject of this paper is beyond the training and skills of current State employees, and we have sought funding to retain experts to analyze it. However, to date DOE has not furnished such funds.

Comments that we have at present are as follows:

1. It is common ground that none of the proffered models for mobile actinide concentrations other than the "inventory limits" model is defensible for SPM purposes. It is not at all clear that the "inventory limits" model is defensible. This subject is discussed further below.

2. The draft takes as given the repository inventory contained in the Baseline Inventory Report (the "BIR") (draft at 2). Whether the waste types and quantities stated in the BIR are accurate is an open question. We have been told, however, that issues of waste characterization are outside the SPM process as far as stakeholders are concerned. This is not appropriate and undermines the validity of the entire process.

3. The draft states that brine volumes will be calculated based upon Salado brine inflow assumptions, said to be described in the position paper on that subject (draft at 3). There is more than one conceptual model of Salado brine inflow under discussion. Which Salado brine inflow assumptions are referred to? I would question the use of any model which does not incorporate far-field flow.

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4. The draft should justify its focus upon eight actinide isotopes that dominate the radioactivity of TRU waste (draft at 4). It has previously been explained that certain actinides are of concern because they make the most difference in the location of the mean CCDF, based upon 1992 PA modeling. However, that selection may not be fully defensible for SPM purposes, and whether it is defensible must be shown.

5. The 1992 PA model does not distinguish among dissolved and colloidal actinides (draft at 8). In such situation, is the selection of sensitive actinides valid?

6. It is stated that the inventory limits model includes no information about the form of actinides, i.e., whether dissolved or colloidal (draft at 9). In fact, the apportionment between dissolved and colloidal actinides is dictated by a sampling process (draft at 20). At the stakeholders' meeting the lack of scientific justification for such sampling was brought out and conceded. In the absence of data justifying another choice, SPM analyses must assume that apportionment which causes the greatest release of contaminants. Sandia conceded as much at the stakeholder meeting.

7. There are few comments herein on the chemical modeling of mobile actinide concentrations, because the work is currently in progress, and the model is not currently advanced as defensible (draft at 11).

8. There must be a question as to statistical sampling over potential oxidation state distributions of actinides, without data to support the probability distributions (draft at 15).

9. How data from the source term test program will be used to provide "confidence" in the chemical modeling effort is not explained. The draft does not explain the tests in detail, but clearly there are basic questions as to the time required to reach an "equilibrium" level which may be taken as representative of long-term conditions (see draft at 22) and the test of "agreement" with model predictions. At the meeting there was reference to an order-of-magnitude standard, and the draft does also (draft at 28). Is that the test? What is the source of that standard?

10. A description of the inventory limits model requires a full list of the variables, if any, which govern the concentrations. (See draft at 28-29).

11. It is not clear when a further draft of this position paper will be available, but given the unfinished nature of the work, more must be written. New drafts must be sent to stakeholders, and a meeting must be held to discuss their contents.

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Thank you for considering these views.

Best regards,



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