Washington
WASHINGTON·UNIVERSITY·IN·ST·LOUIS
School of Engineering & Applied Science

Center for Technology Assessment and Policy
Robert P. Morgan, Ph.D., Director
The Elvera and William Stuckenberg
Professor of Technology and Human Affairs

April 2, 1993

To: Jim McKee

From: Bob Morgan

Here are some questions that my students and I have about the Proposed Plan for Remedial Action at the Chemical Plant Area of the Weldon Spring Site:

1. How sound is the technical and experiential base for stabilization/solidification of low-level radioactive wastes? Are there examples of successful full-scale remedial actions at other sites? Have experiences with Pondcrete at Rocky Flats and grout at Hanford been taken into consideration?

2. Are there some unique features of Weldon Spring waste to be solidified/stabilized that must be taken into account in developing the required technology? What steps are planned in the progression from laboratory to pilot-scale to full-scale operational process?

3. What is the status of the design of the disposal facility? Who is performing the design? Could you provide more details of the segregation plan -- what waste goes where?

4. How much effort will be expended on the vitrification alternative over what time frame? Has any further work been performed on choice of vitrification process (e.g. joule melter vs. in situ, etc.)? Aside from vitrification of high-level waste in France and Russia, to date has vitrification been used in the U.S. for remediation at any radioactive waste sites? If so, with what results?

5. Radon emissions from vitrification will exceed those from stabilization/solidification. Have estimates been made of the risk to students at Francis Howell High School during vitrification operations?

6. Did the risk assessment take into account the possibility of earthquakes, 100 year floods or tornadoes at the site? If so, could you provide some details as to how this was done?

Washington University
Campus Box 1106
One Brookings Drive
St. Louis, MO 63130-4899
(314) 935-5455

FAX: (314) 935-5449

A Recycled and Recyclable Paper

Washington
WASHINGTON·UNIVERSITY·IN·ST·LOUIS
School of Engineering & Applied Science

Center for Technology Assessment and Policy
Robert P. Morgan, Ph.D., Director
The Elvera and William Stuckenberg
Professor of Technology and Human Affairs

To: Jim McKee from Bob Morgan

7. The time frame for comparing risk alternatives in the reports appears to be 200 to 1,000 years. Is this a suitable time frame (especially the lower limit) for permanent disposal or might this be viewed as an interim remedial action?

8. The risk assessments were performed using an EPA target range of 10E-4 to 10E-6. Are the results (i.e. choice of preferred alternatives) affected if the range is narrowed so that it approaches the more stringent limit? (10E-6).

9. Are any of the alternatives that were not designated as "preferred" considered by the Department of Energy to be acceptable?

10. What is the status of the site water treatment plant? Has it been built? Will it use the same process as the quarry water treatment plant? Will the sampling/monitoring plan for the water from the site water treatment plant be the same as for the quarry water treatment plant?

11. How were risk symbols arrived at for the raffinate pits? what criteria were used? Was monitoring or modeling used or some combination of the two?

Washington University
Campus Box 1106
One Brookings Drive
St. Louis, MO 63130-4899
(314) 935-5455

FAX: (314) 935-5449

A Recycled and Recyclable Paper