Washington
WASHINGTON·UNIVERSITY·IN·ST·LOUIS

Department of Chemical Engineering

May 21, 1991

Mrs. Leo Drey
515 West Point Ave.,
Unviversity City MO 63130

Kay:

The technical service person I spoke to yesterday, at Dow, called me back. She is sending me detailed information, but meanwhile she wanted to give me a brief indication of what she learned. She also gave me the name of a specialist in ion exchange resins: Dr. Chuck Marston (517) 636-5065, whom I can call with any questions I have.

Briefly, Dowex 21 will not remove thorium. They have another resin that can do that. "Any anion will cause competition for resin", she said. Which means that other substances in solution will interfere, to some extent at least, with the effectiveness of the resin. "Organics will kill the resin". Thus, if there is any TNT, DNT, chlorinated solvents, or other such materials present in the stream for uranium removal, the resin will be rendered totally non-effective.

Obviously, this is very preliminary information. Further, there are important details missing from the flow sheet. We'll have to give the matter some detailed study before we even give any hints publicly, but as it stands, the process does not look like it has been carefully thought out, nor will it work as intended.

Once again, it comes down to this. We must have assurance that each batch of water is properly tested, for all of the hazardous materials, before it is released. If this is done, they can play around with the process until it does work, even if it does not work initially (as we suspect). But we must have absolute assurance that every batch of water is thoroughly tested before it is dumped into the river. That's the key.

I'm going to that Hazardous Waste conference at Kansas State next week. I'll try to find someone who can refer me to an expert on testing water for alpha emitters.

Sincerely yours,

W. Murray Underwood

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Associate Professor

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ENVIRONMENTAL ENGRG. DEPT.

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An open letter to: Messrs. Terry Gloriod, Vice President, St. Louis County Water Company; David Visintainer, Engineering Executive, City of St. Louis Water Division; and John L. Stein, Director, Environmental Engineering & Site Services, Anheuser-Busch Companies.

Are you aware of the following information regarding the imminent treatment and disposal of the WELDON SPRING QUARRY WATER, scheduled to start in September of this year?:

1. The treated water is to be dumped into the Missouri River about nine miles upstream from our major St. Louis drinking water intakes.

2. The Department of Energy has done no laboratory bench-scale or pilot-plant testing of the proposed treatment process, using actual quarry water.

3. The quarry water contains not only radioactive wastes, but toxic wastes, as well -- such as, arsenic and manganese.

4. The treatment process includes an ion-exchange resin to remove uranium. However, we are informed that the resin will not remove other radioactive materials, such as thorium, and that it won't work in the presence of organic materials such as those present in the quarry. (Please note the enclosed letter from Professor Underwood.)

5. Because the Department of Energy has had no pilot plant, it also has had no effluent on which to test monitoring equipment and procedures. The DOE has announced it will not dump any treated batch of water into the river unless the monitors indicate the level of contamination is "permissible". However, ordinary water testing procedures will not detect many of the radioactive substances known to be present in the quarry water. We have no assurance that adequate test methods will be used, and no assurance that whatever tests are done will be monitored for accuracy.

6. Even if elaborate precautions are taken, an explosion of the old TNT contents in the quarry is possible. St. Louis is not only downriver; we're also downwind. To quote from a June 1990 report prepared for the DOE: "Observers should not be near the face where the excavator is working. Observation should be performed from a safe distance with viewing equipment such as binoculars or remote TV cameras.... The most likely scenario for a serious event is probably increased atmospheric radioactive

contamination due to a fire that occurs because TNT is allowed to dry and somehow is initiated." (pp. 8, 11)

The health of our community is at risk. Can you, as one of our region's largest water users, demand that the Department of Energy or the Environmental Protection Agency at least conduct laboratory bench-scale testing of the treatment and monitoring technologies -- using actual Quarry water -- before proceeding any further with this project?

Sincerely,

W. Murray Underwood

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