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November 19, 2001

Mr. James E. Kennedy
Division of Waste Management
Mail Stop 7J8
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Kennedy:

This is in response to your request for comments on Dr. Michael T. Ryan's *Safety Analysis of Millstone Fuel Rods Potentially Disposed in Either the Barnwell, South Carolina or Hanford, Washington Commercial LLRW Disposal Sites*. Below are our initial comments on the safety analysis.

1. While the report generally speaks accurately of disposal practices (i.e., LLRW disposal site is not a monitored retrievable storage facility), the site has shown that it can perform exhumation operations. In fact, the latest retrieval (late October 2001) was performed in less than a week and with about 10 man-mrem exposure. While package retrieval is not routine, the operation is not a "first-of-a-kind" as stated in the last paragraph on page 13. If warranted, retrieval of this package would involve significant health physics challenges.

2. The condition of the fuel rods was not discussed in the report. Without supporting information, we believe the worst case scenario must be considered.

3. Several years ago, the department allowed the intact disposal of the Portland General Electric reactor vessel. This type of disposal was allowed, in part, due to (1) the immediate savings in worker dose that would occur if the reactor internals were not removed and sized for packaging, and (2) the reduction in the transportation (industrial) hazard due to making this only one shipment instead of several truck shipments. The same type of analysis is also valid in this evaluation. While the projected dose rates during exhumation are very high, very little discussion in the report is directed at US Ecology's ability to successfully remove the disposed liner, once identified. US Ecology in calendar year 2000 was able to dispose of six very high radiation/high activity liners from Energy Northwest with about 100 man-mrem/liner, due to careful planning,

Attachment 2

extensive use of mock-ups, and thorough debriefs. Obviously the industrial hazard is nonexistent if no attempt is made to exhume the liner (if present). On the other hand, US Ecology has an excellent industrial safety record working with radioactive materials of all types and radiation levels.

4. The report should consider various inadvertent intruder scenarios, per NRC guidance.

5. With the discovery of water in a disposal liner sent to Barnwell, SC in May 1990, the potential for fuel rod degradation is higher. In lieu of further information as to how this liquid was discovered, the idea of significant water in the liner with two fuel pins that contain isotopes that are performance assessment drivers (i.e., I-129 and Tc-99) supports further investigations. A primary purpose of the additional investigations is the root cause for the water in the disposal liner and whether any of the Hanford liners could have contained free-standing liquids.

6. Using the data provided in Table 1 on page 4 and assuming the fuel pins were about 0.5 inch in diameter with an active fuel region of 12 feet, it was confirmed that both I-129 and Tc-99 concentrations were at levels greater than Class C.

7. Dr. Ryan's report does not discuss potential mitigations for the burial of high-level waste and waste at levels greater than Class C. The department believes such a discussion would be helpful.

If you have any questions, please feel free to contact me at (360) 236-3241.

Sincerely,

Gary Robertson

Gary Robertson, Head
Waste Management Section

GLR:krf