



Private Fuel Storage, L.L.C.

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John L. Donnell, P.E., Project Director

Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

June 18, 1998

**RESPONSE TO RAI LA 1-6
PRIVATE FUEL STORAGE FACILITY
DOCKET NO. 72-22 / TAC NO. L22462
PRIVATE FUEL STORAGE L.L.C.**

References: 1) NRC Letter, Delligatti to Parkyn, Request for Additional Information, dated April 1, 1998

Please find enclosed Private Fuel Storage response (original plus 15 copies) to the NRC Request for Additional Information (Ref. 1) for LA 1-6.

If you have any questions regarding this response, please contact me at 303-741-7009.

Sincerely,

John Donnell
Project Director
Private Fuel Storage L.L.C.

Enclosure

c: Mr. Leon Bear
Ms. Denise Chancellor
Mr. Mark Delligatti
Mr. Jay Silberg

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LICENSE APPLICATION

LA Appendix B, Chapters 4 and 5

- 1-6 (a) Provide the facility size associated with the PFS \$1,631,000 decommissioning estimate for the facility and site--whether it is 15,000 MTU or 40,000 MTU.
- (b) Provide the basis for estimating each key decommissioning cost component.

RESPONSE

- a) The decommissioning cost estimate is based on a 40,000 MTU facility. The size of the storage facility affects only approximately 6 percent of the overall decommissioning cost. The total decommissioning cost is highly contingent upon the shipping casks, the Canister Transfer Building, and the transfer casks, none of which are dependent on the size of the storage facility. The cost to decommission each storage cask is funded separately before an individual cask is utilized, as described in Section 5.1 of the Preliminary Decommissioning Plan. The only variance in the decommissioning cost related to the size of the storage facility is the area of the concrete storage pads and the assumed amount of decontamination and disposal costs associated with that area.
- b) The basis for each key decommissioning cost component is described below. As noted in the Preliminary Decommissioning Plan, the components that contribute to the \$1,631,000 decommissioning estimate include the following:

Shipping casks	\$400,000
Site characterization study	\$250,000
Transfer casks	\$200,000
Canister transfer building	\$230,000
Storage pads	\$241,000
Final site survey	\$260,000
Independent verification survey	<u>\$50,000</u>
Total	\$1,631,000

The decommissioning cost of the storage casks is not included in the above since they are funded separately on a cask by cask basis.

Shipping Casks

Surveys to determine removable and fixed contamination levels on each shipping cask will cost \$200 based on two technicians at \$25/hr each for four hours.

Decontamination of each Shipping Cask is estimated to cost \$1,000, based on general decontamination cost of \$1 per square foot (s.f.) for approximately 400 s.f. of interior surface area and 600 s.f. of external surface area. The cost for general decontamination efforts of \$1 per square foot is based on actual experience at a nuclear power plant undergoing decontamination in 1997 (La Crosse), including labor and materials.

Waste disposal is estimated to cost \$1,100, based on 3 cubic feet (c.f.) of compacted low level waste at \$300/c.f. for disposal plus \$200 for transportation.

Ten percent of the shipping cask internal surface area is assumed to have fixed contamination, or 40 s.f. In removing all the fixed contamination, it is assumed that one inch of material removed, which will generate approximately 3.5 c.f. of waste. \$150/c.f. is estimated for cutting and removal of contaminated portions, based on two workers plus a health physics technician at \$25/hr each for 6 hours, plus \$75 in materials, for a total of \$525. \$100/c.f. is estimated for packaging, based on two workers plus a health physics technician at \$25/hr each for 4 hours, plus \$50 in materials, for a total of \$350. Disposal of the 3.5 c.f. of low level waste is estimated to cost \$1,250, based on \$300/c.f. for disposal plus \$200 for transportation.

The cost to decontaminate each shipping cask is therefore estimated to be \$4,425, which is rounded to \$5,000, resulting in a total for 8 shipping casks of \$40,000. These figures were incorrectly stated as \$50,000 per cask and \$400,000 total in the Preliminary Decommissioning Plan, but this total amount will be retained in the estimate for an overall contingency factor.

Storage Casks

Waste disposal cost of \$550 associated with decontamination of each Storage Cask is based on an estimate of 1.5 cubic feet of compacted low level waste at \$300/c.f. for disposal plus \$100 for transportation.

Core borings (3) for each shipping cask is estimated at \$850 based on two workers plus a health physics technician at \$25/hr each for 8 hours plus \$250 for miscellaneous tools and supplies.

Dismantlement and Packaging cost of \$3,000 for contaminated portions of each Storage Cask's steel liner is based on the assumption that 20% of the internal surface area (365 sq. ft.), or 73 sq.ft., will have activation or fixed contamination. The steel liner is 2 inches thick, based on manufacturer's

specifications and drawings. The volume of steel liner to be dismantled and packaged is therefore 12 cubic feet (c.f.). Estimate \$150/c.f. for dismantlement, based on two workers plus a health physics technician at \$25/hr each for 20 hours, plus \$300 for miscellaneous tools and supplies, for a total of \$1,800. Estimate \$100/c.f. for packaging, based on two workers plus a health physics technician at \$25/hr each for 10 hours, plus \$450 in materials, for a total of \$1,200.

Shipping cost for Storage Cask low level waste of \$1,400 is based on 12 c.f. at \$100/c.f. plus \$200 for miscellaneous expenses.

Disposal cost for the low level waste for each Storage Cask is based on 12 c.f. of material at \$300/c.f., for a total of \$3,600. This amount was incorrectly stated as \$8,120 in the Preliminary Decommissioning Plan. This total amount will be retained in the estimate for an overall contingency factor.

Scabbling cost of \$1,700 for each Storage Cask concrete is based on two workers plus a health physics technician at \$25/hr each for two hours plus \$200 in tools and materials.

Disposal cost of \$270 for scabbled concrete from each Storage Cask is based on 1/8 inch of material removed from 73 s.f., or 0.9 c.f. of material at \$300/c.f.

The total cost associated with the storage casks is estimated to be less than \$17,000.

Site Characterization Study

A site characterization survey is estimated to cost \$250,000 which is based on 2,500 data points at \$100 per sample.

Transfer Cask

Decontamination of each Transfer Cask is estimated to cost \$5,000, for a total of \$20,000, based on the same assumptions as for the shipping cask stated above. Again, these figures were incorrectly stated as \$50,000 per cask and \$200,000 total, in the Preliminary Decommissioning Plan, but this total amount will be retained in the estimate for an overall contingency factor.

Canister Transfer Building

Canister Transfer Building decontamination cost of \$5/s.f., including labor, materials and waste disposal, is based on \$1/s.f. for general decontamination efforts plus an additional \$4/s.f. to perform a more intense cleaning of those areas with potentially higher contamination levels. These

areas will require a reduction in cleaning rate per time unit and a corresponding increase in the unit cost. The total estimated cost for Canister Transfer Building is \$230,000.

Storage Pad

Storage pad decontamination cost of \$1/s.f. is based on actual experience at the La Crosse nuclear power plant undergoing decontamination in 1997, including labor and materials. As noted in the Preliminary Decommissioning Plan, the total cost for decontaminating the storage pads is estimated at \$96,000.

Storage pad waste disposal cost from decontamination efforts of \$145,000 is based on \$100/c.f. for packaging, plus \$100/c.f. for transportation, plus \$300/c.f. for disposal of an assumed 290 c.f. of low level waste.

The total estimate for storage pads is the \$96,000 plus \$145,000 or \$241,000.

Final Site Survey

A final site survey is estimated to cost \$260,000 based on essentially re-performing the characterization survey, with an additional \$10,000 contingency.

Independent Verification Survey

An independent verification survey is estimated to cost \$50,000 based on sampling 20 % of the areas covered in the final survey.