

DCS

PR 61  
(43 FR 4981)

8005140337

# Penberthy Electromelt International, Inc.

Cable Address:  
PENELECTRO  
SEATTLE

631 South 96th Street

Telephone:  
(206) 762-4244

Seattle, Washington 98108, U.S.A.

9 April 1980

Nuclear Waste Division

Attn: Mr. Paul H. Lohaus  
Technical Development Section  
Low Level Waste Licensing Branch  
Nuclear Regulatory Commission  
Washington, D.C. 20555

Re: Draft of 10 CFR Part 61: Disposal of Low-Level  
Radioactive Waste and Low-Activity Bulk Solid Waste

Dear Mr. Lohaus:

Thank you for sending a copy of the preliminary draft of 10 CFR Part 61.  
We would like to comment as follows:

SUBPART G: WASTE PERFORMANCE

61.86 Waste form, packaging

The technology of improved waste forms has been improving markedly in the last some months by the application of industrial glass melting technology to the problem of radioactive waste disposal. By application of this industrial technology, many of the concerns addressed in this and other subparts can be greatly alleviated.

Industrial technology for the melting of glasses excellent for chemical durability has been available for a long time. The technology of burning all the combustible wastes to ashes and incorporating said ashes in the glass is relatively new, but has already been demonstrated on an engineering scale. Accordingly, the concerns about dispersibility, degradability, and solubility can be put aside.

Of special interest is the fact that there are no fire hazards at all.

There are no corrosives. The waste form cannot cause fire through friction, absorption of moisture, or spontaneous chemical changes. Glass is completely noncombustible.

For two hours after casting into steel drums, the glass is held in annealing equipment to keep the glass from cracking. For two hours after that, paper and the like should not be in close contact with the drums. Thereafter, there is no potential for fire whatsoever.

During processing of the glass, all oxidizing materials are eliminated.

After cooling, the glass is entirely passive, and does not react with any other substances.



POOR ORIGINAL

All biological, pathogenic, or infectious material is completely destroyed during the melting of the glass.

The volume reduction is excellent. Dry compacted waste at 30 lbs per cubic foot is reduced by a volume factor of 30 to 1 of glass. Boric acid solution 12% is reduced in volume by a factor of 7 to 1.

Organic liquids such as toluene are completely combusted. The remaining volume is only that of the glass vials themselves.

#### TRANSPORTATION

The glassification of LLW can actually result in a saving in cost of transportation due to the decreased weight and decreased bulk. There is a further saving in burial charges.

#### LIMITATIONS

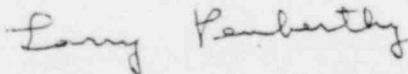
Heavy metal objects such as tools can be handled by placing them in the steel drum before the casting of glass. After the glass is cast around the metal parts they are covered up and safe for transport and burial.

-----  
in

We hope that you will recognize the final version that many of the restrictions can be eased when the waste form is glass of excellent quality. Please recognize that there are many different glass compositions, and include that the glass should be of quality for chemical durability approximately equal to that of present day container glass.

Sincerely,

PENBERTHY ELECTROMELT INT'L, INC.



Larry Penberthy

DCS

PR 61 (43 FR 49811)

ROUTING AND TRANSMITTAL SLIP

ACTION

1 TO (Name, office symbol or location) JBMartin, WM REBrowning, WM RDSmith, WMLL	INITIALS	CIRCULATE
	DATE	COORDINATION
2 PHLohaus, WMLL GRoles, WMLL (2) Charles Nichols, SD Robert Fonner, ELD	INITIALS	FILE
	DATE	INFORMATION
3 RMacDougall, WMPI File (Taube) PDR - PR 61 (43 FR 49811) ← DCS, 016	INITIALS	NOTE AND RETURN
	DATE	PER CONVERSATION
4	INITIALS	SEE ME
	DATE	SIGNATURE

REMARKS

Attached, for your information, are comments on the preliminary draft of 10 CFR Part 61.

Do NOT use this form as a RECORD of approvals, concurrences, disapprovals, clearances, and similar actions.

FROM (Name, office symbol or location) Taube P. Heddings, Licensing Assistant Low-Level Waste Licensing Branch, Division of Waste Management	DATE
	PHONE 74433