Westinghouse Hanford Company | **Internal Memo**

From: Structural Margins Assessments 92-RAG-043
Phone: 6-2662 H5-55
Date: December 17, 1992
Subject: CERTIFICATION OF THE 202-A BUILDING AS DANGEROUS WASTE CONTAINMENT BUILDING

To: R. W. Bowersock S6-19

cc:	T. J. Conrads	H5-55	P. J. Mackey	B3-15
	D. G. Harlow	S6-17	J. C. Midgett	S6-15
	J. S. Hertzel	S6-08	J. F. Williams, Jr.	H6-24
	G. J. LeBaron	S6-19	File/LB	

Revision 3 to the PUREX Part A Dangerous Waste Permit Application, dated November 24, 1992, state that the 202-A Building will be considered a 'containment building'[1] for the storage of dangerous wastes[2] on its canyon deck area. Thus, the PUREX plant is subject to the newly promulgated requirements of 40 Code of Federal Regulations (CFR), Part 265, Subpart DD. Containment buildings placed into operation before February 18, 1993, must meet the following criteria.

1) The owner or operator shall notify the Environmental Protection Agency (EPA) Regional Administrator of his intent to be bound at an earlier time by this subpart.

2) A certification that the containment building design meets the requirements of Section 265.1101, paragraphs (a) through (c) must be placed in the facility's operating records no later than 60 days after the date of initial operation of the unit. This certification shall be made by a qualified registered professional engineer.

The 202A Building is being used as a multiple purpose facility with more than one regulatory agency, and sets of criteria. This letter addresses only the EPA requirements of CFR 40, Part 265, Subpartt DD, containment buildings. U.S. Department of Energy (DOE) requirements and loadings are not being addressed in this letter.

1 The terms 'containment building', 'primary barrier', and 'secondary leak detection and containment system', as used in this memo, shall be defined by the EPA requirements of 40 CFR 265 Subpart DD containment buildings

2 The State of Washington uses the term 'dangerous waste' to mean the same as the Federal 40 CFR term 'hazardous waste'.

Approved for Public Release;
Further Dissemination Unlimited

The 202-A Building at the PUREX facility was designed and built to operate safely as a chemical and radioactive materials processing facility. The building is a long canyon structure constructed of thick, reinforced concrete load-bearing members that provide both strength and radiation shielding. This reinforced concrete 202-A Building meets the current Uniform Building Code earthquake criteria (Reference RHO-R-3). The 202A Building may not meet U.S. DOE site design criteria seismic and wind loads for this safety class 1 rated structure. Mechanical systems currently in place are designed to collect HVAC, liquid, and solid wastes for proper disposal. Detailed descriptions of the PUREX facilities and operations are contained in the PUREX Final Safety Analysis Report (WHC-SD-HS-SAR-0001, Revision 5).

The dangerous waste consists of process equipment, or component parts, that contain lead shielding, lead weights, and cadmium shielding. This waste is being stored on the canyon deck level of the 202-A Building, directly on one of the processing cell cover blocks or surrounding deck areas. The waste may be infrequently moved from one cover block or deck area to another as needed to support other plant operations.

Section 1101 of 40 CFR 265, Subpart DD specifies the containment building design and operating standards. Paragraph (a) provide the design standards for the containment building; paragraph (b) provides additional requirements when free liquids are present; and paragraph (c) provides operating standards. This letter will show how the 202-A Building meets these requirements.

The requirements of Section 1101 paragraph (a) provide for the design of dangerous-waste containment buildings. These basic requirements include complete enclosure from the elements, capability to withstand all operating and natural phenomena loads without loss of function, and construction from waste compatible materials.

The 202-A Building originally was designed for processing irradiated fuels, which required a very robust containment type structure. The 202-A Building is enclosed from the elements, structurally strong to resist the required loads, and the concrete internal surfaces within the canyon area are coated with a vinyl copolymer type paint that resist chemical attack. Additionally, the amount of waste being stored in the 202-A Building is small, using less than 5 percent of the canyon deck floor space. Because it was designed as a containment type structure and because the quantity of waste is small such that it does not exert lateral loading to the building walls, the 202-A Building is more than adequate to meet the paragraph (a) requirements.

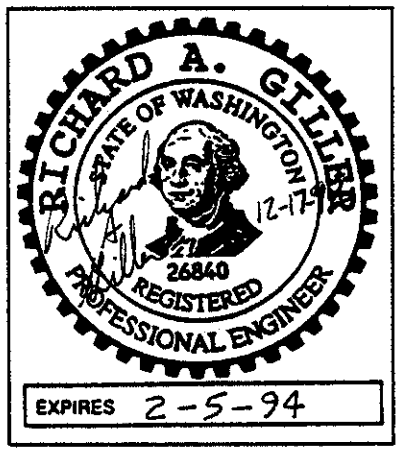
Paragraph (b) requires that free liquids be contained within the facility. The method detailed in paragraph (b) lists a primary barrier, a collection system, and a secondary leak detection and containment system to protect personnel and the environment. Since the dangerous waste stored in the 202-A Building canyon deck does not contain free liquids, the requirements of this paragraph are not applicable.

Paragraph (c) provides for operation controls and requirements. These controls include maintaining the primary barrier to be free of defects that can cause leaks, monitoring the waste pile so that it does not exceed its intended boundaries, preventing the tracking of the waste material from the pile site, and controlling air pollution emissions. Operation of the entire PUREX facility currently has the necessary controls in-place. The 202-A Building canyon area is a climatically controlled area, which precludes weathering of the barriers and controls air and liquid emissions. The canyon area is normally operated by remote control, and personnel access to the area is very limited, which in effect controls the tracing problem. The volume of waste is very small in comparison to the whole canyon floor area and the quantity of waste could increase many fold before the amount would be an operational problem.

The PUREX facility is being used for multiple purposes, one of which is confinement of a stored dangerous waste. This letter indicates why the building can be qualified according to EPA requirements as a dangerous waste containment facility in addition to its other uses. The as-designed and in-place facility and systems meet the 40 CFR 265, Subpart DD, requirements as described previously. For these reasons I certify that this building meets these requirements.

This EPA containment building qualification should not be interpreted to mean that the building meets other types of building containment requirements. The U.S. Department of Energy (DOE) safety class, containment building, or associated requirements were not considered in this facility evaluation and qualification.

R. A. Giller

R. A. Giller, PE #26840 Senior Engineer
Structural Margins Assessments

pld