



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

APR 21 1981



FCTC:RHO  
71-6400

Westinghouse Electric Corporation  
ATTN: Mr. A. J. Nardi  
P. O. Box 355  
Pittsburgh, PA 15230

Gentlemen:

Pursuant to 10 CFR Part 71, you are authorized to deliver to a carrier for transport waste which has been packaged in accordance with statements and representations made in your letters dated November 20 and December 15, 1980 and January 12 and 20, and April 10, 1981 subject to the conditions stated below:

1. Model No.: 6400
2. Package Identification No.: USA/6400/E( )F
3. Drawings: Packaging is constructed in accordance with Protective Packaging, Inc., Drawing Nos.: 32106-1, Sheet 1, Rev. F; and 32106, Sheet 2; and either (1) Westinghouse Electric Corporation Drawing No. 2020D08, Sheet 1 and 2, Rev. 0; or (2) Babcock and Wilcox Company Drawing No. 11-D-2130, Rev. 0, as modified by Westinghouse Electric Corporation letter dated January 12, 1981; or (3) Nuclear Packaging, Inc. Drawing No. EG-60-01D, Sheets 1 and 2, Rev. 0, as modified by Westinghouse Electric Corporation letter dated January 20, 1981.
4. Contents:
  - a. Large decontaminated equipment waste of such size as not to fit into a 55-gallon drum (with legs or other readily removable appendages removed). Not to exceed 5 grams plutonium within the package.

Equipment waste surfaces must be decontaminated to a smearable level of no more than 150,000 dpm/100 cm<sup>2</sup> prior to fixation or until successive decontamination cleaning operations do not reduce the smearable contamination levels by more than ten percent. After fixation, equipment waste surfaces must have a smearable level of contamination of no greater than 10,000 dpm/100 cm<sup>2</sup>. Outer surfaces must have a smearable level of contamination of no greater than 20 dpm/100 cm<sup>2</sup>. Prior to fixing of contamination, large equipment waste must be inspected to insure that: (a) all sharp or protruding objects have been removed or blunted, and (b) pipe caps, gasketed blind flanges, covers, etc., have been installed wherever possible. Following such inspection, the inner surfaces must be fixed with "strip" or "clear" coating. The inner surface(s) may alternatively be fixed with a polurethane foam.

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The large equipment waste must be enclosed in a tight fitting box constructed of 1-inch thick plywood. The space between the equipment and the box must be filled with foam and between equipment (1/2" minimum foam thickness).

- b. Decontaminated hard waste items, such as equipment, metal cans, tools, etc., shall be double bagged within 12-mil thick PVC, with each bag heat sealed. The total fissile quantity of all the sealed packages in one container must not exceed 200 grams.

Hard waste surfaces must be decontaminated to a smearable level of no more than 150,000 dpm/100 cm<sup>2</sup> prior to fixation or until successive decontamination cleaning operations do not reduce the smearable contamination levels by more than 10 percent. After fixation, hard waste surfaces must have a smearable level of contamination of no greater than 10,000 dpm/100 cm<sup>2</sup>. Prior to fixing of contamination, hard waste must be inspected to insure that sharp or protruding objects have been removed or blunted. Following such inspection, the outer surfaces must be fixed with "strip" or "clear" coating. Hard waste items such as furnace shells, muffles, or other items with large cavities not accessible for decontamination must be foaming within the cavities. Surfaces that are not easily accessible, e.g., interiors of small diameter tubing and piping which were in contact with process operations, must be swabbed or immersed in cleaning solution to insure removal of residual material. Open ends of the tubing and piping must be sealed using mechanical fittings.

Two drums containing hard waste items designated as Westinghouse I.D. No. ARD-80-014 and ARD-80-016 which were packaged before March 23, 1981, may be packaged in the following manner:

Wiping and brushing of the components had been completed to remove all residual contamination. The components were individually double bagged within 12-mil thick PVC bagging material. Each bag was heat sealed and assayed. The items were foamed rigidly in place within a DOT Specification 17H 55-gallon steel drum, equipped with a standard drum closure, such that a minimum annular thickness of 2 inches was maintained between the waste packages and inner drum wall. A minimum thickness of 3 inches of foam (foamed in place) was maintained between the bottom of the drum and the lowermost waste package, and between the lid of the drum and the uppermost waste package. The foam has a nominal density of 0.029 g/cc.

The assay values for these drums are as follows:

ARD-80-014 = 45 grams

ARD-80-016 = 53 grams

Sealed packages of hard waste must be enclosed in a tight-fitting, 1-inch thick plywood box constructed in accordance with Westinghouse Electric Corporation's Drawing No. 1620E43, Sheets 1, 2, 3, and 4, Rev. 3; or a tight-fitting 3/16" thick corrugated steel box constructed in accordance with Rockwell Hanford Operations' Drawing No. H-2-91888,

Sheet 1, Rev. 0. The space between the packages and the box must be filled with foam to a minimum thickness of 1 inch. Void spaces between the sealed packages must be filled with foam (1/2" minimum foam thickness).

- c. Glove box absolute filters with sealed inlet and outlet areas must be double bagged within 12-mil thick PVC, with each bag heat sealed and packaged within DOT Specification 17H or 17C steel drums (maximum size of 55 gallons). Each drum must be lined with a sealed plastic liner and equipped with a standard drum closure. Each drum must not exceed a fissile quantity of 60 grams.

Sealed drums must be enclosed in a tight-fitting 1-inch thick plywood box constructed in accordance with Westinghouse Electric Corporation's Drawing No. 1620E43, Sheets 1, 2, 3, and 4, Rev. 3; or a tight-fitting 3/16" thick corrugated steel box constructed in accordance with Rockwell Hanford Operations' Drawing No. H-2-91888, Sheet 1, Rev. 0. The space between the drums and the box must be filled with foam to a minimum thickness of 1 inch. Void spaces between drums must be filled with foam (1/2" minimum foam thickness).

- d. Soft waste items, such as sheeting, gloves, paper, prefilter media, polyethylene bottles, shoe covers, etc., must be double bagged in 12-mil thick PVC, with each bag heat sealed (bag size must not exceed 22" x 16" x 10") and packaged within DOT Specification 17H or 17C steel drums (maximum size of 55 gallons). Each drum must be lined with a sealed plastic liner and equipped with a standard drum closure. Each drum must not exceed a fissile quantity of 60 grams.

Sealed drums must be enclosed in a tight-fitting 1-inch thick plywood box constructed in accordance with Westinghouse Electric Corporation's Drawing No. 1620E43, Sheets 1, 2, 3, and 4, Rev. 3; or a tight-fitting 3/16" thick corrugated steel box constructed in accordance with Rockwell Hanford Operations' Drawing No. H-2-91888, Sheet 1, Rev. 0. The space between the drums and the box must be filled with foam to a minimum thickness of 1 inch. Void spaces between drums must be filled with foam (1/2" minimum foam thickness).

- e. Liquid waste must be solidified in concrete in a 30-gallon drum which must be sealed in a plastic bag and centered and supported in a DOT Specification 17H or 17C 55-gallon steel drum by absorbent material. The 55-gallon drum must be lined with a sealed plastic liner and equipped with a standard drum closure. Each drum must not exceed a fissile quantity of 60 grams.

Sealed drums must be enclosed in a tight-fitting 1-inch thick plywood box constructed in accordance with Westinghouse Electric Corporation's Drawing No. 1620E43, Sheets 1, 2, 3, and 4, Rev. 3; or a tight-fitting 3/16" thick corrugated steel box constructed in accordance with Rockwell Hanford Operations' Drawing No. H-2-91888, Sheet 1, Rev. 0. The space between the drums and the box must be filled with foam to

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a minimum thickness of 1 inch. Void spaces between drums must be filled with foam (1/2" minimum foam thickness).

5. The maximum weight of the contents including secondary packaging, dunnage, shoring and bracing must not exceed 30,000 pounds.
6. Sufficient dunnage, shoring and/or bracing must be utilized to minimize secondary impact of the secondary packaging within the cavity under normal and accident conditions.
7. Protrusions from secondary packaging such as lifting eyes, etc., must be positioned such that they will not contact the cavity walls, or shoring must be provided to prevent puncture of the cavity walls by the protrusions under the normal and accident conditions.
8. Contents must be positioned in the cavity such that the center of gravity of the loaded package is substantially the same as the center of gravity of an empty package.
9. Package Model No. 6400 is exempt from the requirements of 10 CFR §71.42 only for the purpose of making these shipments.
10. This approval supersedes in its entirety approval (MacDonald to Sabo) letter dated January 26, 1981.
11. Expiration Date: December 31, 1981.

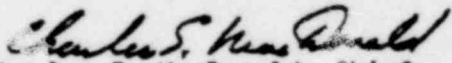
#### REFERENCES

Westinghouse Electric Corporation application dated July 13, 1973.

Supplements Dated: January 12 and 20, and April 10, 1981.

Mechanics Research, Inc., Report C2373, "Engineering Evaluation of the Super Tiger Overpack Designed for the Shipment of Large Quantities of Hazardous Materials."

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

  
Charles E. MacDonald, Chief  
Transportation Certification Branch  
Division of Fuel Cycle and Material Safety

cc: Richard R. Rawl, DOT  
Dr. Donald M. Ross, DOE