PDR

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

DEC 18 1978

FCTR:WHL
71-9506

U. S. Department of Energy
ATTN: Dr. William E. Mott
Washington, DC 20555

Gentlemen:

This refers to your letter dated December 30, 1977, requesting our review of the Model No. MS27684-2 package.

In connection with our review of the subject package, we need the information identified in the enclosure to this letter.

Please advise us when this information will be provided.

Sincerely,

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

Enclosure: As stated

cc: DOE, Albuquerque Operations
Office
ATTN: Mr. Jack R. Roeder
P.O. Box 5400
Albuquerque, NM 87115

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Model No. MS27684-2

Shipping Container

Encl to ltr dtd: DEC 18 1978

DRAWINGS

Provide Mound Research Corporation Drawings Nos. AYC 760065 and AYC 760064 for the inner container body and cover. These drawings should identify all significant safety features, e.g., dimensions, materials of construction, welds and seals.

CONTAINMENT

Show that the containment capabilities of the packaging following normal conditions of transport and accident damage conditions are sufficient for packaging containing plutonium oxide powder. Regulatory Guide 7.4 may be used to develop an acceptable test to demonstrate adequate containment. Also, the application should address how the requirements of 10 CFR §71.42 will be met.

TESTING AND MAINTENANCE

Discuss the maintenance program to be used to ensure the package containment capability under continued use. This should include initial, periodic and preshipment tests. The maintenance schedule should include the inspection, test and replacement schedule for components that comprise the containment system.

Regulatory Guide 7.4 may be used for containment tests before first use and for periodic testing. For assembly verification testing, it is recommended that a test of sufficient sensitivity to detect a release of no more than a Type A quantity of material in 10 days be used. When leak testing is used for assembly verification the maximum sensitivity is 1×10^{-3} atm-cm^3/sec and the minimum sensitivity is 1×10^{-1} atm-cm^3/sec (air at 25°C and 1 atm leaking to a 1×10^{-2} atm ambient).

CRITICALITY

In order for any package to qualify as Fissile Class I it is necessary to demonstrate that the requirements of 10 CFR §71.38 are met. In practice, Fissile Class I indicates that controls for criticality in transport are not required. This is possible since there is essentially no neutron interaction between packages under normal conditions of transport and at least 250 damaged packages are subcritical. It should

be recognized that Fissile Class I packages could be commingled with other Fissile packages. In the case of the subject package it has not been shown that any number (infinite array) of packages are subcritical for the normal conditions of transport. In this regard, we need a description of the criticality model and analysis and results which support a Fissile Class I designation. Also, it should be noted that the Transport Index for Fissile Class II should be rounded up to the first decimal place in accordance with 10 CFR §71.39(2)(b).