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

MAY 13 1980

FCTC:WHL
71-4960

U. S. Department of Energy
ATTN: Dr. Donald M. Ross
MS-E-201
Washington, D. C. 20545

Gentlemen:

This refers to your letter dated April 10, 1975, as supplemented July 19, 1976 and October 31, 1979, requesting our review of the Model No. LLD-1 package.

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

Please advise us within thirty (30) days from the date of this letter when this information will be provided.

Sincerely,

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

Enclosure: As stated

cc w/encl: DOE, Albuquerque Operati ns Office
ATTN: Mr. Jack R. Roeder
P.O. Box 5400
Albuquerque, NM 87115

U.S. DEPARTMENT OF ENERGY
MODEL NO. LLD-1 PACKAGING

Encl to ltr dtd: MAY 13 1980

Criticality

Based on your reports of the accident damage to the single package (bottom end drop, puncture and fire) it is evident that the support frame and aluminum mesh undergo gross failure. The staff does not interpret the results of the bottom end drops, as reported in your letter dated October 31, 1979, as demonstrating the adequacy of the support frame to maintain the spacing assumed in your criticality analysis. It is also noted that the fire test will melt away the aluminum mesh, thereby, permitting free travel of the secondary container, should it break away from the support structure. It is the staff's conclusion that the package array configuration used in the criticality evaluation does not represent the most reactive credible configuration consistent with the damaged condition of the package. We will need a revised analysis for an array of packages in the most reactive credible configuration (an array of secondary containers free of the support frame) in order to determine criticality control requirements for fissile Classes II and III.

Structural

Show that the containment system of the package is adequately designed against nonductile failure (i.e., brittle fracture) under the hypothetical accident 30-foot free drop test and the puncture test at low service temperature environments (-20°F). Acceptable materials would be austenitic stainless steel or other steel with its NDT substantially lower than -20°F (see material toughness requirements for ASME Class II vessels).