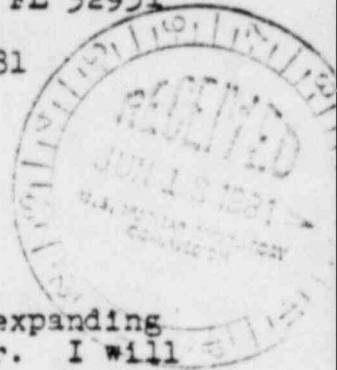


CT-1334
1680 Bay Shore Drive
Cocoa Beach, FL 32931

27 April, 1981

Dr. C. P. Siess
Advisory Committee on Reactor Safeguards
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



Dear Dr. Siess:

Your letter of 10 April suggests expanding somewhat on the problems with the 6M spec container. I will be glad to go into this further at the next meeting, which Mr. Duraiswamy recently indicated is to be on 20 May. Meanwhile, the principal shortcomings appear to be the following, which came about partly because the tests which served as the basis for the specs were performed only with the 10 gallon size drum and without an internal heat source:

1) The contents are permitted to decompose at temps above 250°F and the closure of the inner container may fail at temps above 300°F. However, with the max allowable heat source of 10 watts, the minimum size of inner container, and maximum thickness of insulating material, the calculated temp of the inner container exceeds 250°F even in normal transport. The hypothetical fire could then cause decomposition of the contents, failure of the closure, and degradation of the entire thickness of "Celotex" type insulating material.

2) The inner 2R container is permitted to have a screwed closure. Although it is required to be "leaktight", the degree of leaktightness is not specified. In certain tests, a 5 inch diameter screwed closure with "Teflon" tape as a luting material, considered to be leaktight in common plumbing practice, was found to have a leak rate of several torr-liter/second.

3) In some tests with 55 gallon and larger drums, and weights well below the allowable maximum, the lid popped loose in the 9 meter drop, exposing the insulating material. Allowable weights should be reduced, or else specs for the drum closure should be revised. Sandia came up with a practical design while working on the PAT package.

4) DOT 178.104 states that a layer of porous refractory fiber may be placed behind the vent holes in the drum. This should be required, and the amount should be specified. Tests have shown that "Celotex" behind vent holes will continue to smolder for days after the fire test, eventually consuming much of the "Celotex" and causing excessive inner temperatures.

Sincerely,

J. W. Langhaar
J. W. Langhaar