

Lyall E. Johnson, Chief  
Licensing Branch

Project S-8  
Docket 70-36

Edson C. Case, Acting Chief  
Hazards Evaluation Branch

5-18-60

MALLINCKRODT NUCLEAR CORP.

We have reviewed the Mallinckrodt application dated March 3, 1960, requesting approval of shipping procedures for uranium compounds having a maximum enrichment of 10%.

The shipping container is a 5-gallon pail braced with angle iron supports inside a 55-gallon "shorty" drum. During previous reviews, dating back to December 16, 1958, we have been unable to approve previous applications for this type container because of spacing inadequacy and because the inner container would not be substantially filled with material in the higher enrichment range. Mallinckrodt has now overcome these objections. Additional edge-to-edge spacing is provided by a steel skirt welded around each 55-gallon drum, to provide an overall diameter of 27". Stacking of the 55-gallon drums will be prevented by welding an angle-iron pyramid to the top of each drum. The higher enriched material, for which the volume is much less than that of a 5-gallon pail, will be packaged in a metal can or polyethylene bottle which is packed in the 5-gallon pail with vermiculite.

The shipping container is now appropriate for mass limited quantities (Table II, TID-7019) and spacing is such that the solid angle criterion for a planar array of 24 drums is satisfied. The applicant will obtain certification from the carrier that no other SNM will be combined enroute with the Mallinckrodt shipment.

We recommend approval of the March 3 application.

HEB:DL&R

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CDLuke:alp

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