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MARTIN COMPANY, DOCKET NO. 70-58, APPLICATION DATED NOVEMBER 11, 1966

DML:CB:TGM

The subject application pertains to the Martin Company's "all-purpose shipping container". The container consists of a 4" Schedule 40 pipe, either 38 or 42 inches long, centered within a standard 18 gage 55-gallon drum (a portion of the pipe extends beyond the top of the drum). The loading of a drum will be restricted to a maximum of 5 kg U-235 of any enrichment, and in any chemical and physical form except liquid or solution. (C. Beck has suggested that packaging of thermally decomposable materials be precluded.)

The applicant has proposed the use of up to 22 such containers in Class II shipments. The analysis submitted included a calculation of maximum k_{eff} value of 0.4 for an individual unit, and solid angle calculations for unshielded containers in arrays of 111 undamaged containers (3 tiers of 37 containers in hexagonal pitch) and of 57 damaged containers (3 tiers of 19 containers in hexagonal pitch). The 111 undamaged containers were divided by a safety factor of five, and 57 damaged by two in order to establish the allowed number of package per shipment.

We have independently analyzed the proposed use and conclude the following:

1. The individual unit is safe under the proposed maximum loading regardless of the degree of moderation. A k_{eff} value of 0.4 is realistic.
2. The arrays as analyzed by Martin are not the most reactive; however, based on the conventional solid angle technique even the more reactive arrays are safe.

We, therefore, have no objection to the approval of the application.

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