

INTER-DEPARTMENT COMMUNICATION

April 18, 1960

To: W. Wachtl
From: E. Scicchitano
Subject: AMF Storage Box Nuclear Calculations--Summary of Results

I. Multiplication Factor

A. 6.25" X 5.4" X 24" box containing 4-11 plate assemblies.

- | | |
|--------------------------------|-----------|
| | K_{eff} |
| 1) Dry | .81 |
| 2) Wet | .40 |
| 3) Wet with 20 water reflector | .64 |

B. 55 gal. drum

- | | |
|---|-----------|
| | K_{eff} |
| 1) Infinite array of homogeneous mixture | .40 |
| 2) Infinite array of homogeneous with double loading (by mistake) | .66 |

Multiplication factor calculations were based on three group diffusion theory calculations. The distributions of the materials within the box and drum were assumed to be homogeneous.

II. Interaction Calculations*

A. 3 X 2 array of 6.25" X 5.4" X 27" boxes in 55 gal. drums.	Ω (Steradians)
	1.4

* Ref. I TID 7019-Guide to Shipment of U235 Enriched Uranium Material Page 74 Appendix 4

Conclusions

As seen from results in I above, the shipping containers are safe under flooded conditions.

From results of interaction calculations (II above) and Appendix 5 in Ref. I, the shipping containers are still safe.

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A/55

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