At Luke

Mallinckrodt Telegram Leaders - L. Johnson 12/29/58

Requests temporary permission to ship 5 gal containers in 55-gallon "Shorty", single layer (not stacked), 12 drums max per shipt., St. Louis - Lynchburg, Va.

$50\ lb.\ UO_2 \times 0.87 \times 0.042 \times \frac{1}{2.2} = 0.83\ kg\ U\text{-}235$

Mall, 0.848 kg. U-235

4.2% enr.

87% U

$0.2\%\ \text{Moisture} \times 50 \times \frac{1}{2.2} = 0.0454\ kg\ H_2O \times \frac{2}{18} = 0.005\ kg\ H$

$H/U = \frac{0.005}{1} \times \frac{235}{0.83} = 1.4$

$\text{Vol bird cage} = \frac{.785\,(24)^2\,(25.5)}{1728} = 6.68\ cu\,ft.$ (or Mall, 5.748 gal)

5.75 cu ft or 43 gal

see Mall. 12/30/58

Vol Cont. = 5 gal or $5 \times 3.79\ l/gal = 19\ \text{Litres}$

TID 7016

Table 5 Max U-235, H/x = 2-20 — 4.5 kg in max Vol 4.5 l

Mall., H/x = 1.4 — 0.83 kg in Vol 19 l

Table 7 Max density U-235 in birdcage $\frac{0.83}{5.75} = 0.145\ kg/ft^3$

w. 12" S to S spacing.

Mall

Vs TID-7016, H/x 2-20, $1.0\ kg/ft^3$

Draft Shipping Guide.	D.S.G.	Mall.
U-235/cont.	1.9 lb or 0.864 kg U-235	0.848 kg U-235
Side to side Sepn., Inf. Square	3'	12 3/4"
For square array, Solid Angle, 6 Coplanar (Total of 7)		r = 2.45 $\frac{2.45}{4\pi/12.6} 100 = 19.4\%$
	Mall wants to ship 12 drums	OK for k = 0.65

B-17