

*Mac Donald*

UNITED STATES GOVERNMENT

# Memorandum

TO : Donald A. Nussbaumer, Chief, Source and  
Special Nuclear Materials Branch, DML

DATE: October 28, 1966

FROM : Charles D. Luke, Chief  
Criticality Branch, DML

*CDL*

SUBJECT: MARTIN COMPANY, DOCKET NO. 70-58, APPLICATION DATED OCTOBER 24, 1966

DML:CB:TGM

The subject application supplements the Martin Company applications of September 26 and October 3, 1966, for fabrication of uranium oxide-metal hydride fuel assemblies by providing information revising the storage criteria for hydrided disks.

We do not agree with the allowable number of units (steel containers) as read from Fig. 22\*. On the other hand, Martin's application of the lattice density criterion was very conservative. We have determined that the proposed maximum allowable number of storage containers as reported is acceptable; in fact, the number of storage containers may be safely increased from the reported value of 60 to 92 for the steel containers and from 90 to 195 for the aluminum birdcages.

We suggest that you inform Martin Company that we use Table IV and Fig. 22 as follows:

Example -- 1.56 1 steel containers on 13.75" centers. From Table IV\* a storage unit is 3.6 liters for H/<sup>235</sup>U of 20 or more.

- a. Volume of steel container storage location, 1.5 cu. ft.
- b. Volume of storage unit =  $1.5 \times \frac{3.6}{1.56} = 3.46$  cu. ft.
- c. From Fig. 22\*, allowable number of units corresponding to a lattice volume of 3.46 cu. ft. is 40 units.
- d. Therefore the allowable number of steel containers is =  
 $40 \times \frac{3.6}{1.56} = 92.$

\*TID-7016, Rev. 1



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