OPTIONAL FORM NO. 10
5010-104

UNITED STATES GOVERNMENT

Memorandum

TO : Robert L. Layfield, Acting Chief
Source & Special Nuclear Materials Branch, ML

DATE: July 22, 1964

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

SUBJECT: MARTIN COMPANY, DOCKET NO. 70-58, APPLICATION DATED JULY 9, 1964

SYMBOL: ML:TGM

During the visit on July 21, 1964, Messrs. C. W. Keller, C. C. McNally, E. W. Osmyer, and J. W. Pollard, all of Martin Company, the following items pertaining to nuclear safety were discussed:

1. Specifications of criteria used to provide isolation between arrays.

2. Clarification of process flow chart and a suggestion that the chart be amended to indicate basis for criticality control.

3. Apparent inconsistencies between the nuclear safety analysis as presented and the description of the proposed loading and storage arrangement. (It was pointed out that in this particular case the nuclear safety of an individual unit could be demonstrated with greater ease by use of "coincident limits", as given in TID-7016, Rev. I).

4. Need for explanation of Figure 4.

5. Need for explanation of the minimum critical values as shown in Figures 7 and 12.

6. Explanation that nuclear safety analyses performed for in-process storage and cleaning operation should be based on the heterogeneous system which is more reactive for 5% or less enriched material, rather than on the homogeneous system. If the equation used for the solution of the homogeneous system is modified to include the effects of increased reactivity due to the heterogeneity of the system then a suitable explanation should be included to establish the validity of such modifications. In addition, it was pointed out that if Martin could establish that the in-process storage area would be dry, the safety of the proposed storage is assured.

7. Need for a description of procedures for maintaining the safe slab thickness established for welding and inspection operations.