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UNITED STATES GOVERNMENT

# Memorandum

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

DATE: June 16, 1965

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

SUBJECT: MARTIN COMPANY, DOCKET NO. 70-58, CONSOLIDATED RENEWAL APPLICATION DATED  
JANUARY 28, 1965

SYMBOL: DML:TGM

We have reviewed the subject application for renewal of Special Nuclear Material License No. SNM-53.

In order that we may continue our review, we request the following information:

- "1. The application has indicated certain mass limits for process steps in fuel preparation-powder, in uranium oxide-metal oxide component fabrication, and in low enrichment-tubular fuel element component fabrication. Many of these masses exceed the always-safe mass for individual units of 350 g U-235. Therefore, it is requested that you provide nuclear safety analyses for your proposed fabricating operations justifying the safety of your individual units.
- "2. The nuclear safety of your vault storage is dependent on maintaining the H/X ratio of individual unit equal to or less than 2. While we agree that the design and construction of the vault are sufficient to prevent flooding, you have not described your controls for assuring that material placed in storage and that moisture pick-up of material in storage will not exceed an H/X of 2. Please provide a description of these controls.
- "3. We can not confirm the nuclear safety analyses for the in-process storage area. The  $k_{eff}$  calculations are based on a system which does not necessarily represent the most reactive system which may be encountered under partial flooding of a storage unit. While we agree with the results of your solid angle calculations performed for 48" containers, we note, page IV-B-3, that the containers may be extended to accommodate a fuel length of 84". This expansion of course invalidates the solid angle calculations. Your nuclear safety analyses should be revised to account for these comments.



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- "4. The application states that up to fifty in-process storage racks may be used throughout the work areas. Please provide nuclear safety analyses for an individual storage box and for the neutron interaction between boxes of a rack and between boxes of other racks or other special nuclear material which is not isolated.
- "5. The information contained in paragraph E, page V-A-13, relative to the handling of scrap and discard material is not in sufficient detail to establish the nuclear safety of your proposed operations. Therefore, please provide:
- "a. A description of your controls to assure that unsafe quantities of U-235 will not accumulate within the air exhaust system and its filters.
  - "b. A description and nuclear safety analyses of your handling and storage procedures of contaminated air filters.
  - "c. Confirmation that uranium containing solution will be analyzed for U-235 content prior to its transfer to unsafe geometry vessels.
  - "d. Confirmation that the H/X ratio for uranium solution in 55-gallon drums will be equal to or exceed 5200.
  - "e. A description of your controls for assuring that unsafe quantities of U-235 will not accumulate within contaminated waste paper."

We feel the applicant should be advised that the only activity authorized by this license at the Critical Test Building (Bldg. KC) is vault storage as described in Table IV-C1. Although we feel that additional information is required from the Martin Company to augment their described administrative procedures, it is our understanding that such information has been requested as a result of the Health Safety review.