

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
UNITED STATES ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

October 21, 1958

Honorable John A. McCone  
Chairman, U. S. Atomic Energy Commission  
Washington 25, D. C.

Subject: U<sup>233</sup> LOADING OF THE MATERIALS TESTING REACTOR (MTR)

Dear Mr. McCone:

The Advisory Committee on Reactor Safeguards reviewed on October 15, 1958, the proposed operation of the Materials Testing Reactor (MTR) with a U<sup>233</sup> core loading at the request of the Division of Licensing and Regulation. The Committee had access to the report from the Phillips Petroleum Company, PTR-312, and was briefed by the staff of the Division of Licensing and Regulation.

The Committee agrees with the Hazards Evaluation Branch that the proposed operation of the MTR on a U<sup>233</sup> core will not endanger the health and safety of the public. Also the Committee is of the opinion that such proposed operation will not expose the adjacent reactor operations to an unacceptable hazard.

In the Phillips proposal, it was recognized that the U<sup>233</sup> loading will reduce the portion of delayed neutrons. To counteract the effect on the reactor kinetics of this decrease, the worth of the control rod and its rate of insertion will be correspondingly reduced. Also the maximum permissible worth of individual experiments will be reduced to a level compatible with the reduced portion of delayed neutrons. In addition, adequate means for the control of environmental hazards are available. The modifications of the MTR due to the U<sup>233</sup> loading are very similar to those required for the operation of a plutonium core which has already been successfully carried out.

Dr. Richard L. Doan excused himself from participation in the discussion and recommendation in this case.

Sincerely yours,

/s/  
C. Rogers McCullough  
Chairman

cc: P.F.Foster, GM  
H.L.Price, DL&R