

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
UNITED STATES ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

December 15, 1958

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

Subject: PLUTONIUM RECYCLE TEST REACTOR

Dear Mr. McCone:

At its eleventh meeting (November 6-8, 1958), the Advisory Committee on Reactor Safeguards reviewed the design (at its present state of development) of the Plutonium Recycle Test Reactor. In addition to the reports referenced below, descriptions of the proposed designs were presented by members of the Hazards Evaluation Branch and representatives of Hanford. Additional clarifying information has been received since that meeting. The views of the Committee are summarized below:

- (1) The proposed site appears to be suitable for the proposed facility in view of the power level, the inherent nuclear stability of the active lattice, and the intended containment features.
- (2) The proposed scram mechanism is unusual but appears to be adequate.
- (3) An untried method for fine control is proposed, but we do not feel that this feature increases the public risk appreciably.

The Committee understands that the design is proceeding towards the following objectives:

- (4) The shim rods are to be designed so that the rods will move only when the drive motor is operating. Only one shim rod motor may be run at a time.
- (5) Emergency light water cooling for the fuel elements will be applied automatically less than 30 seconds after severe loss of pressure in the coolant system.
- (6) To facilitate testing or maintenance, the designers propose that instruments which initiate a scram signal may be by-passed. A by-pass which is to be used only when the pile is shut down must be interlocked so as to make operation or startup impossible

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until the by-pass has been removed. In order to by-pass such an instrument during operation, duplication of instrumentation must be provided so that the reactor will not operate without proper protective devices.

Sincerely yours,

/s/
C. Rogers McCullough
Chairman

cc:
A. R. Luedecke, GM
H. L. Price, L&R

References:

HW-46461 - Plutonium Recycle Program Demonstration Reactor Site Study, November 7, 1956.

HW-48800 - Plutonium Recycle Program Reactor Preliminary Safeguards Analysis, July 12, 1957.

Hw-48800 - (Rev) Plutonium Recycle Test Reactor Preliminary Safeguards Analysis, June 5, 1958.

Hazards Evaluation Branch Report to the Advisory Committee on Reactor Safeguards, October 8, 1958.

U. S. Weather Bureau Comments, September 16, 1958.