

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

November 7, 1960

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

Subject: REPORT ON ADVANCED TEST REACTOR (ATR)

Dear Mr. McCone:

At its twenty-ninth meeting on November 3-5, 1960, the Advisory Committee on Reactor Safeguards reviewed the safety aspects of the site proposed by the Division of Reactor Development for the Advanced Test Reactor. The Committee had access to the reports referenced below, and to the analyses of the AEC technical groups concerned. In addition, the ACRS discussed aspects of the site with a representative of the Phillips Petroleum Company. The Division of Reactor Development is proposing to locate this 250 MW(thermal) test reactor about 400 yards from the present MTR-ETR complex. Although the design of the ATR is only at the conceptual stage, it is apparent that it will contain novel features, such as high power density, unusual reactor kinetics, regions of positive temperature coefficient, and as yet unspecified large loop experiments. The question at this time is whether this unusual reactor should be located as close as is proposed to another important reactor component and materials testing complex.

The applicant has demonstrated that it is reasonable to expect in the future that incidents which will cause reactor shutdowns will not be likely to impair the productivity of this enlarged reactor complex. Additionally, the three reactors are not coupled mechanically or meteorologically in a way which would suggest that an incident occurring at one reactor would be apt to cause an incident at another reactor, or that the severity of two simultaneous incidents would be significantly increased.

However, coupling might occur by an unfortunate design of an experiment which could not be immediately shut down safely at any stage of its insertion, operation or withdrawal upon the chance signal from another

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reactor. The Committee urges that the operator take special precautions to reduce to a bare minimum this type of experiment.

The Committee is assuming that Phillips or a single organization having equal competence and experience will operate the three reactor complex. The ACRS also assumes that the operator will develop emergency procedures compatible with the increased complexity of this three reactor operation and with the increased potential of release of fission products due to the novel features of the new Advanced Testing Reactor.

The ACRS concludes that the site proposed is suitable for the ATR as presently conceived.

Dr. R. L. Doan did not participate in the ACRS review of this case.

Sincerely yours,

/s/ Leslie Silverman

Leslie Silverman
Chairman

Reference:

IDO-16623, Hazards Evaluation of Proposed Site for ETR II dated August 18, 1960

cc: A. R. Luedecke, GM
W. F. Finan, AGMRS
H. L. Price, DL&R