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Division of Licensing & Regulation

September 16, 1958

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ACRS

STANDARDS AND CRITERIA FOR REACTOR SAFETY

Reference letter from Dr. McCullough to Mr. Strauss dated May 14, 1958, subject as above, and your reply dated June 17, 1958.

The Committee wishes to forward a partial listing of criteria which are currently being used in judging the safety of reactors. The list is attached herewith.

In the letters referenced above, the need for early discussions of criteria and standards has been emphasized. Dr. McCullough plans to allow time during the October meeting of the ACRS and has asked that the staff be prepared to enter into such discussions.

cc: CKBeck, HEB

Attachment
As stated

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FACTUAL CRITERIA

The Hazards Evaluation Staff and the Advisory Committee on Reactor Safeguards are actually using certain standards in judging reactors.

- 1) Reactor cores must have negative temperature coefficients. There are exceptions but they must be justified.
- 2) Reactor cores must have negative power coefficients.
- 3) Oscillatory behavior is frowned upon. It is expected to be proved to be absent but if present must be justified on the basis of calculations and experiment.
- 4) All solid fuel elements are clad.
- 5) Void coefficients are expected to be negative and if positive of limited volume, but numbers have not been spelled out.
- 6) There must be more than one control rod -- an automatic rod must be less than one dollar delta k.
- 7) There must be a way of scrambling either control or safety rods.
- 8) Cooling facilities must be in multiple.
- 9) All reactors over 10 Mw must be contained unless at NRTS or some other isolated site. Containment is required for lower powers under certain circumstances.

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