

UNITED STATES GOVERNMENT

*Memorandum*

TO : A. R. Luedecke, General Manager  
 THRU: F. K. Pittman, Dir., DRD, HQ *agv for*      DATE: January 13, 1961

FROM : Kenneth A. Dunbar, Manager  
 Chicago Operations Office

SUBJECT: PROPOSED CRITERIA FOR APPROVAL OF SITES FOR POWER AND TESTING  
 REACTORS

HS:DMG

I appreciate the opportunity to comment on Staff Paper AEC R 2/19 on reactor site criteria.

Our experience on reactor siting in the Power Demonstration Reactor Program has shown that a need exists for definitive criteria and guides that will assist both AEC and the industry. Publishing objective regulations and standards should go far toward meeting the need.

From our review I would suggest that Annex 1 of Annex D be chosen over either alternate since it does contain a greater amount of information.

Our criticisms, which I hope are constructive, are as follows:

The exclusion area and the evacuation area are defined in terms of the maximum credible accident with containment and a given leak rate. The population center distance is calculated as a function of the maximum credible accident without containment. Evidently the intent is to apply the man rem population dose concept.

We believe that the industry will find this concept difficult to apply and would suggest that the criteria for dose calculation be consistent in terms of containment and leak rate for exclusion area, evacuation area and population centers.

In the determination of radiation effects, objective evaluations, formulae, and criteria should be contained in Annex 1 for other than the post-accident dispersion of gaseous fission product and direct gamma radiation from the containment vessel. In the same sense the calculation procedures could be reworked to reflect more of the sophistication normally required of applicants for permits or authorizations.

*A/205*

January 13, 1961

If the use of Appendix B is considered I would feel that the definition of exclusion area, evacuation area, and population center distances be given consideration. Using the criteria of this part a 300 EMW power reactor could require a minimum of 320 acres of exclusion area and 265 square miles of evacuation area. This is based on the fact that Appendix B requires conservatism in dose calculations which could give results which are high by factors as great as  $10^3$  or  $10^4$ .

The discussion of the proposed regulation presumes that the definitions and criteria will receive liberal interpretation within the AEC. Experience has been that when regulations are published, State and other regulatory groups interpret them to mean precisely what they say. Thus, it may be well to issue the proposed regulation and allow more than the prescribed 30 days for review and comment before making them official.

  
Kenneth A. Dunbar

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