

023

December 13, 1960

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

Subject: SITE CRITERIA FOR NUCLEAR REACTORS

Dear Mr. McCone:

Commissioner Gless has observed that in our letter of advice to you dated October 22, 1960, we have furnished guidance relating to the selection of reactor sites but have not clearly identified the criteria contained therein. He has suggested that the Committee summarize such general site criteria as may be appropriate in order that guidance can be provided to the public.

While the Advisory Committee on Reactor Safeguards believes that it would be unwise to publish detailed quantitative site criteria in a regulation at this early stage of technology, we have provided in an attachment to this letter criteria which should be useful in the selection of sites for nuclear reactors.

Sincerely yours,
ORIGINAL SIGNED BY
LESLIE SILVERMAN

Leslie Silverman
Chairman

Enclosure:
Site Criteria for Nuclear Reactors
dated Dec. 13, 1960

cc: L. E. Gless, Commissioner ✓ disp 9 am 12/16/60
A. E. Inghelbe, GM ✓
W. F. Pinner, ARES
H. L. Price, Dir., IISR

See Ch. 12/16/60
1. in circulation
orig to Chairman 12/22/60

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1. The location must be such that exposure of the film is possible during the day and night.
2. The exposure of the film should be made in such a way that the film is not overexposed.
3. When it is not possible to make the exposure in the field, the film should be developed in a dark room.
4. A film which has been developed in a dark room should be used for the purpose of making a permanent record.

General Remarks

The following are the general remarks which should be observed in the field. The following are the general remarks which should be observed in the field. The following are the general remarks which should be observed in the field. The following are the general remarks which should be observed in the field.

GENERAL REMARKS FOR FIELD WORK

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The National Committee on Interior Reorganization believes strongly that there has not been a sufficient amount of data available to the committee to justify a recommendation. The committee has not had a sufficient amount of data available to the committee to justify a recommendation. The committee has not had a sufficient amount of data available to the committee to justify a recommendation.

General Criteria

1. The applicant must show that the particular function of the department does not violate the general criteria.
2. The determination must be based upon the actual functions provided to exercise the nationwide authority, upon the nature of the functions, and upon the actual distribution of population surrounding the area.
3. There must be some or more independent physical barriers within it can be shown that the particular function cannot be performed with a lesser number. For example, if there were a weather type with no flood energy, or "independent" possibility for a weather barrier, and either a low specific power or such a barrier could be shown that the loss of another condition would not be considered, one or two barriers might be considered acceptable.
4. The analysis of the applicant presenting the kind of accidents which can happen, the probability of accidents, and the nature of damage to persons off-site based upon actual weatherology, hydrology, and population distribution will be compared to a general purpose for reasons of national interest. This will be an arbitrary measure of a certain function of the function provided in the weather into the outdoor building or conditions. The nature of the weather value will be used unless the applicant can show good reason to use a lesser quality. The nature of the weather value will be used unless the applicant can show good reason to use a lesser quality. The nature of the weather value will be used unless the applicant can show good reason to use a lesser quality.
5. There shall be an area surrounding the weather, based on the conditions, which will be under the control of the applicant and in which no one will reside. Credit can be taken for special geographical considerations such as a weather location, the nature of a river, the bank of a lake, etc., in reaching the site of the weather. It must be considered as a means of location independent of other weather conditions.

been no such study. Data and methods applicable to site criteria were suggested as a part of the proposed study. Such a study would permit criteria to be used in defining criteria for site selection. The following numerical values are given as examples to aid in understanding the problem even though their validity is open to question until the study is made.

1. Under the extreme conditions of a serious reactor accident, it should be reasonably possible for persons off-site to take protective steps, such as evacuation and retirement to shelters, within a period of two hours so that within the two hours they will not receive more than a 25 rads whole body gamma dose or the inhalation of radioactive material which will give a dose of 300 rads to the thyroid, or 25 rads to the bones or lung.
2. The integrated man-rads dose for all people off-site receiving a radiation dose above 1 rad whole body, or equivalent thyroid, bone or lung dose, shall not exceed 4×10^6 man-rads.
3. The reactor should be located sufficiently distant from cities (metropolitan areas) of above 10,000 to 25,000 population so that no individual receives more than 300 rads in the extremely improbable accident defined by a complete failure of all confinement barriers and a source strength equal to most of the fission product inventory.

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