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PHILIP SPORN
PRESIDENT

August 21, 1959

Mr. Harold L. Price, Director
Division of Licensing and Regulation
U. S. Atomic Energy Commission
Washington 25, D. C.

Dear Mr. Price:

In response to the invitation for comments on the Atomic Energy Commission's proposed criteria for nuclear power and test reactor sites, as published in the Federal Register of May 23, 1959, I submit the following for your consideration.

My principal comments on the proposed issuance are two-fold:

First, in the present experimental and developmental stage of nuclear reactors, it is a mistake to attempt to establish definitive, quantitative criteria for reactor sites. Quantitative rules, once laid down, will be hard to redo in years to come. We have simply not reached a stage as yet where we have the necessary experience and knowledge about reactors to formulate "rules" in these matters.

Second, the particular quantitative criteria emphasized by the May 23 proposal, i.e., exclusion areas and distances from centers of population, do not take account of wide variations in reactor design and associated protective measures. They contradict in large measure the recognition given elsewhere in the proposed criteria of the relationship of the site to variations in reactor characteristics and to the amount of protection which can be engineered into a reactor facility.

It may be that an exclusion distance of some kind around power and test reactors, as proposed in Item b, is desirable, but in the light of present knowledge and experience the proposed minimum of one-half to three-quarters of a mile for large power reactors is entirely arbitrary. Similarly, I

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see no justification for the provisions of Item c as to the need for locating reactors at considerable distances from "centers of population" and "large cities". Decisions on these matters should depend upon the state of the art at a given time or whether alternative safeguards can be engineered into the reactor to provide acceptable standards of safety.

As a long-range objective, a sounder approach to this problem would be for the Commission to establish maximum tolerable radiation levels at the site boundaries under conditions of reactor damage. This would permit flexibility in meeting established safety standards by a balanced combination that took account, in any particular case, of the relative effectiveness and cost of variations in design, shielding, and exclusion distance. Time and experience will be necessary both to establish the lowest limit of radiation exposure which it is technically and economically feasible to achieve and to reach agreement among scientists and others as to what exposures are tolerable from the standpoint of public safety. Meanwhile, until such time as there has been an opportunity to acquire the necessary engineering, design, and operating experience and to explore the safety and protection problems much more extensively than has been done up to now, the Commission should refrain from imposing any general set of quantitative criteria. Rather, it seems to me, the Commission can best assure proper safeguards in reactor construction and operation and the sound development of a nuclear industry by continuing to rely on the ad hoc judgment of its experts and advisors in the case of each reactor proposal, so that the specific circumstances and designs involved in each proposal may be evaluated on their own merit and in the light of current technology and knowledge.

I do not mean to suggest in any of the foregoing that it would not be appropriate and helpful for the Commission to set forth factors which, in the present state of knowledge in the art, are considered relevant to the problem of site evaluation and safety. I suggest, however, that this be done by amplifying existing regulations to state in more detail just what site information should be furnished by applicants for a reactor license. These requirements could then be usefully supplemented by a series of technical papers and symposia which would aid the applicant in evaluating site characteristics and integrating them into the over-all plant hazard analysis.

Very truly yours,

Philip Sporn
President

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