91 Acacia Drive
Orinda, CA 94563

October 11, 1990

Mr. Kenneth M. Carr, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Below Regulatory Concern Policy

Dear Commissioner Carr:

It is, perhaps, presumptuous of me to write directly to you, but yours is the only name that I am certain of, and you are alleged to be the instigator of the BRC policy (see letter in the Contra Costa Times, Walnut Creek, CA, Sept. 10, 1990, by Congressman George Miller, Martinez, CA).

I attended the fifth and last NRC-sponsored public meeting in Oakland, CA on Sept. 27, 1990. I went there to support the BRC policy, but no one (from Region V, Walnut Creek) told me not to come. Out of some 70 speakers I was the single supporter; others from industry and medicine, who might have supported it, were conspicuously absent. I, too, took some of the derision aimed at the NRC staff present and you in absentia.

I have had 53 years of continuous experience with radioactivity, beginning in 1937 using some of the earliest synthetic radioisotopes produced at Berkeley (Ph. D., Physiology and Biochemistry, U.C. Berkeley, 1942). I worked on the Manhattan Project at Chicago, Oak Ridge and Hanford. Since 1945 I have at times been a consultant to the U.C. Radiation Lab and the AEC and have worked in radioisotope applications in industry. Even now, though retired I am still active with the IAEA. In this career I have been concerned with essentially all aspects of radioactivity and radiation from production, application, radiation safety and waste disposal. It is because of this experience that I support the BRC policy.

Some things stand out from my attendance at the Oakland meeting that I would like to pass on to you.

1. The format of the meeting was not effective. NRC staff initially and ably presented the NRC position, after which individuals were each given five minutes for a statement. This took almost the rest of the day. There was no opportunity for discussion or rebuttal no matter how irrelevant or preposterous the contents of the statement. With the lineup of 69 to 1 (I was fourteenth, was already somewhat overwhelmed, and did not do a good job in my remarks) the various statements became self-reinforcing. I felt sad for the staff who had to take all those blows for 5-6 hours without opportunity to comment.

2. The attendees thought that this was a public hearing and many objected to the fact that the Commission had made up its mind, then held the hearings, in which case the comments would be totally ignored. The purpose of the meeting as a means to present the NRC position and listen to comments was not made clear.

3. Presenting the risk of BRC to the general public in terms of X number of additional cancer deaths is a no-win situation, no matter how small the value of X. The public looks at the odds of 1 in a million but perceives that for that one person who dies of cancer, the odds are 1 in 1. Illogically, the public accepts all kinds of death from guns, auto accidents, etc., etc., but these are not cancer deaths. The Big C is a no-no. Further, it was not clearly stated these are estimated deaths extrapolated from higher doses, and that the true number may be zero, although it cannot be proved.

4. The collective dose argument did not strengthen the NRC case for those attending. I know that the collective dose is a widely used concept in health physics, but the concept has never appealed to me. Consider my allegory about collective dose.

> There is a certain secluded village of exactly 100 identical houses. Wind tunnel tests showed that they could withstand winds up to 100 mph, but that at 100 mph they would blow down. One day rather than the calm always found in this village, there was a wind of exactly 1 mph. The collective dose was 100 house-mph, and, accordingly, one house blew down.

Not within the concept of the meeting and the BRC policy is the problem of radiation from medical practice. This exposure is accepted by the public without question on the assumption that it always saves lives. Such radiation may be applied without limit, without explanation of risk and without record keeping. Medical applications were exempted in the original atomic energy act of 1954 and remain so. Certainly the Commission does not want to get involved in a battle with the powerful medical lobby and the Congress, yet this is the one area where a significant reduction in human radiation exposure can be achieved with probable health benefits. We cannot do much about the natural background.

My argument is that exposure as a result of BRC will affect only a few individuals, if any, but almost every one of us receives radiation exposure from medical X rays. Such exposures can be and probably are abused. Many years ago I read an article in a DuPont Co. magazine sent to its stockholders touting its brand of X-ray film. The article centered on a particular hospital in Hollywood, CA, where every patient, no matter what the reason for admission, was given an X ray. I sent this article to the then Secretary of HEW (Mr. Califano). I received a reply from someone in HEW who was studying X-ray use in head injuries. The practice was to give each case an X-ray of the head to look for fracture. One Seattle hospital compared the use of other diagnostic tests to X rays and concluded that X rays had no advantages. I never heard of any final outcome, but this kind of inquiry needs to be expanded because X-ray doses are not always small.

Finally, I enclose herewith a figure that I used with my presentation at Oakland. The curve has the familiar sigmoid shape common to many natural phenomena (example, growth--size versus time), but used here to illustrate the cost-benefit ratio.

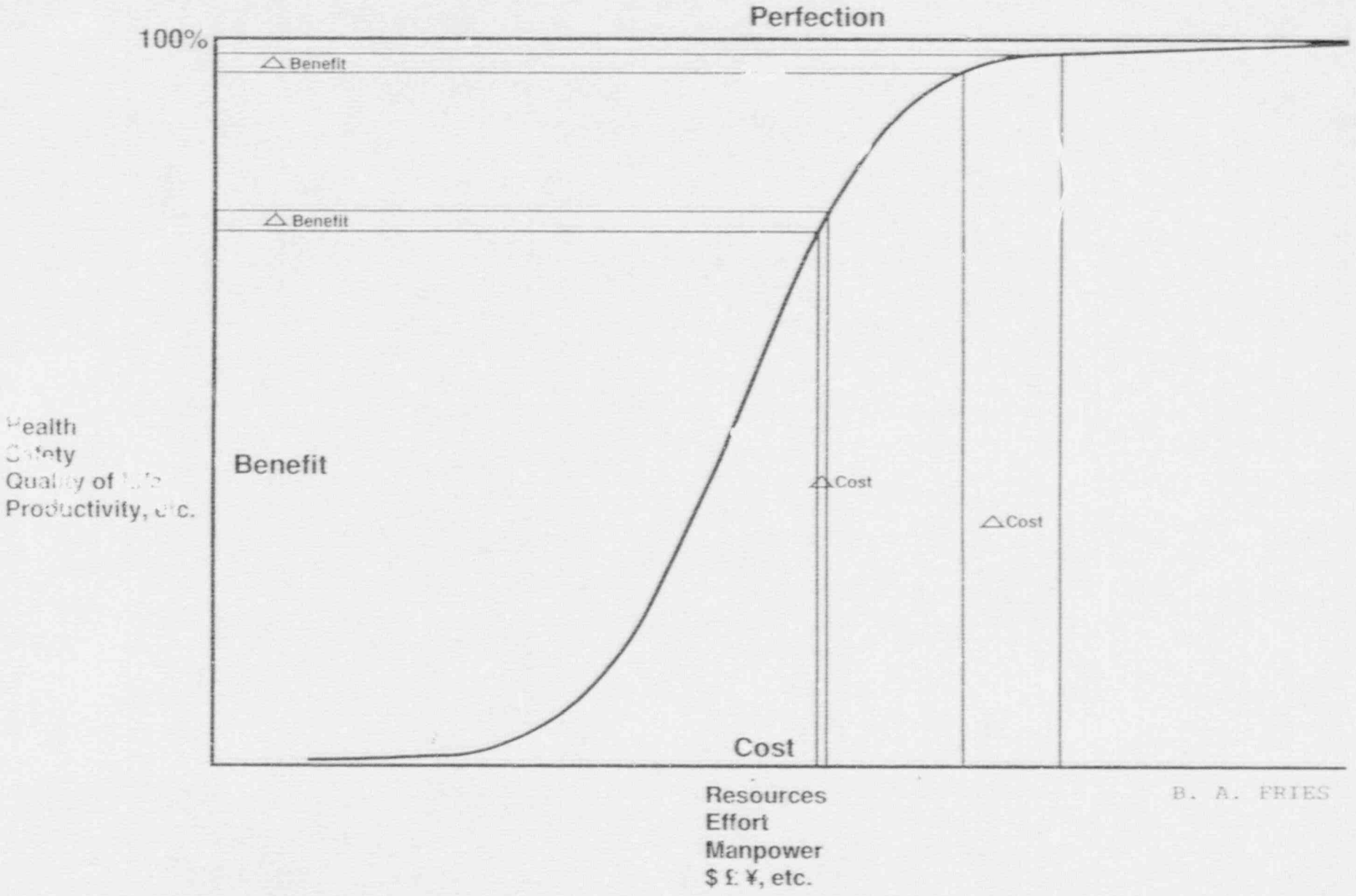
The vertical benefit axis has an upper limit, 100% or absolute perfection. The horizontal cost axis has no limit; costs can go on forever. Equal increments of benefit bear widely different costs, depending where on the curve the benefit is achieved. The opponents of BRC favor paying higher costs--in any measure of that cost--in order to achieve minimal benefits by requiring that even trivial amounts of radioactivity be classified as serious hazards that must be disposed in licensed low-level sites of diminishing capacity and available only at great cost.

I support your efforts on the BRC policy and hope that it will be successful. It is a courageous step to take in a society that expects absolutely no risk for certain activities yet selectively overlooks a host of other risks.

Sincerely yours,

Bernard A. Fries

Bernard A. Fries, Ph. D.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