



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 3 1980

Ms. Martha E. Stokely
1101 Speer Street
Arlington, Texas 76010

Dear Ms. Stokely:

I am writing in response to your letter to the Commission expressing your concerns about nuclear fission and the biological effects of radiation. I regret that this answer to your letter has been delayed. The accident at Three Mile Island and its consequences have created a substantial increase in the agency's workload, which has prevented me from responding to you as promptly as I would have liked.

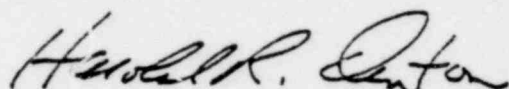
For more than four decades, the effect of radiation on men and animals has been thoroughly studied. Numerous major biological research programs (including studies of genetic effects) have been completed and others are in progress, all of which have been well documented. While the relationship between ionizing radiation dose and biological effects among humans is not precisely known for all levels of radiation, the principal uncertainty exists at very low dose levels where natural sources of radiation (cosmic and terrestrial) and the variations in these sources are comparable to the doses being evaluated. The most important biological effects from radiation are somatic diseases (principally cancer), hereditary diseases, abortions, and congenital anomalies. These effects are identical to those which occur among humans from other causes. It is this last point in combination with other confounding factors such as magnitude and variations (1) in normal incidence of diseases, (2) in doses from natural radiation sources, (3) in radiation doses from man-made sources other than the nuclear industry, and (4) in exposures to other (non-nuclear) carcinogens, which is responsible for much of the uncertainty in the dose-risk relationship at low dose levels.

In lieu of precise knowledge of the relationship between low-level radiation and biological effects, a linear non-threshold extrapolation from high radiation levels to the lower levels is assumed for radiation protection purposes. This means that it is assumed that any dose of radiation, no matter how low, may be harmful.

Several federal agencies, principally the Environmental Protection Agency, Occupational Safety and Health Administration, and the Nuclear Regulatory Commission, are responsible for regulating exposures to radiation or radioactive material. In all cases, the staffs of these agencies are well aware of the potential health effects and have expertise in biology and the other disciplines needed either within the staff or available to them.

I appreciate your concerns and assure you that every effort is being made to ensure the continued protection of the health and safety of the public, not only at the Three Mile Island Station, but also at all nuclear power plants.

Sincerely,

A handwritten signature in cursive script that reads "Harold R. Denton".

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dear Sirs,

8/23/79

In regard to the possible re-opening of the Three Mile Island fission reactor and in regard to fission power in general, I would like to express my doubts. According to Mr. J. Carl Lee of UGeo, Texas, whose speciality is Nuclear Safety, there is no way to "idiot-proof" fission power. I believe that Edison Electric has proven itself to have an abundance of idiocy within its corporate domain and would be a bad choice of persons to even allow near the facility. In regard to nuclear power in general, I beg you to consider that high energy subatomic particles (radiation) are about the only thing small enough to damage a gene. Although the odds against any individual sustaining damage to a gene which is in either a sperm or egg cell and of that exact cell later developing into a human are astronomical, I beg you to consider that it only took one such random collision in one of the parents of Queen Victoria to give her the dubious honor of being the first carrier of hemophilia to the world. The human suffering involved is beyond comprehension. I beg you to consult with a geneticist before you license any more nuclear facilities. Other problems caused by genetic damage include sickle-cell anemia, any of the defects labeled "congenital", and baldness. Thank you for your kind consideration of this matter.

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Sincerely yours,

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Martha E. Stokely

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