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FEDERAL GOVERNMENT
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CO-CHAIRMAN

May 20, 1994

Ivan Selin, Chairman
Nuclear Regulatory Commission
One White Flint North Building
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Selin:

A constituent of mine, [redacted] has sent me a letter regarding his concern for the level of the radioactive material Americium-241 found in some fire detectors. I would very much appreciate it if you could respond to his concerns.

Ex. 6

Thank you very much for your time and attention to this matter.

Sincerely,

James P. Moran

JPM/pdc

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[ ] Ex.6

April 27, 1994

Letters to the Editor
Consumer Reports
P.O. Box 2015
Yonkers, NY 10703-9015

To the Editor:

As a longtime reader and recent subscriber, I found your May issue outstanding. In particular, I was impressed with the package of reports on home safety and the clear-headed and practical overview of the potential risks from electromagnetic fields. However, I must take strong exception with your contention that the amount of radioactive Americium-241, found in quantities ranging from one to five microcuries in all ionizing smoke detectors, is "so small as to pose no significant health or environmental threat," (p. 336).

Your readers should know that Americium-241 (Am-241) is one of the most toxic and radioactive elements around, a radioactive decay byproduct of the plutonium that forms the core of nearly every weapon in the U.S. nuclear arsenal. The people who design and maintain our nuclear arsenal are rightly wary of this material because it emits significant amounts of both alpha and penetrating gamma radiation as it decays, posing a risk to anyone who must come into close contact with one or more warheads for significant amounts of time.

How did this dangerous radioactive waste find its way into smoke detectors? Early smoke detectors were largely of the photoelectric variety, but somewhere along the line some clever official with the U.S. Department of Energy (DOE)--the agency that oversees the production and maintenance of the nuclear arsenal--apparently hit on the idea of selling a waste product from nuclear weapons production--Am-241--to industry to form the heart of ionizing smoke detectors. For the DOE the benefits were obvious: not only could it save money on storing and eventually disposing of a very hazardous and troublesome waste material, but it could also make money by selling Am-241 to industry.

I suspect the reason ionizing detectors have all but driven out the photoelectrics is that the cost to industry to purchase quantities of Am-241 from the DOE is set deliberately low, so as to move quickly the material out of government custody as well as increase the profit margin on ionizing detectors, making them more attractive financially than the photoelectric models. For the record, Am-241 is provided in a similar manner to some manufacturers of compact fluorescent light bulbs.

While it may be fair to say that the small quantity of Am-241 in an individual ionizing smoke detector--contained between thin layers of gold and silver foil--probably won't present any significant health or environmental risks during normal use, that claim holds true only as long as the unit is handled properly. Such assertions further ignore the not insignificant risks of

manufacturing the Am-241 foil sources used in the detectors, which is done largely outside the United States, under conditions therefore unregulated by the U.S. government. The Nuclear Regulatory Commission (NRC) is required to license manufacturers of ionizing detectors, but it allows these detectors to be distributed to "persons exempt from licensing" (i.e., the unwary consumer), thereby abandoning forever its' role in regulating the ultimate disposal of these devices.

Furthermore, Am-241 has a half-life of 432 years, meaning that it will take over 4,000 years before a given quantity of it decays to levels which present truly little or no risk to anyone or anything with which it comes into contact. Complicating matters during those 4,000 years, the decay of Am-241 creates new toxic and radioactive byproducts, such as Neptunium-237, Uranium-233, Thorium-229 and Radium-225, each with their own long half-lives.

Even in microcurie quantities, the amount of Am-241 in these ionizing detectors turns them into radioactive waste, which common sense (something apparently lacking at the NRC) dictates should not thrown out with the regular household trash. And yet that is precisely what millions of unwitting people around the country do every year, unaware that their actions can lead to the Am-241 source leaching into the ground and potentially contaminating groundwater supplies or, worse, being incinerated and thus spreading this known carcinogen even further.

Like plutonium, a mere speck of Am-241 deposited in lung tissue will cause lung cancer. Think of this the next time you hear of a building burning down or an airliner crashing: if they were equipped with ionizing smoke detectors (as all airlines are required by law to be) the radioactive contents of those detectors are likely to wind up in the air we breath, the water we drink and the soil we walk upon.

Consumer Reports does a commendable job of providing unbiased data to consumers so that they may make informed choices. While your report highlighted some of the undeniable benefits of smoke detectors, both photoelectric and ionizing, it did not give your readers the whole story. Based on my own, unscientific queries, I suspect that the vast majority of purchasers of smoke detectors are unaware that there are even two types of detectors, one of which contains a small but significant quantity of radioactive waste derived from the nation's nuclear weapons program. I'm sure the government and the industry would like to keep it that way, but I expect more from *Consumer Reports*.

Assuming proper handling and disposal (which as I've already demonstrated is overly optimistic, especially with regard to disposal) the short-term benefits of Am-241 in an ionizing smoke detector may outweigh its serious long-term health and environmental costs. But when you consider, as you must, the thousands of literally uncontrolled grams of this dangerous material in the hands of millions of unsuspecting citizens whose

actions will inevitably release this material into the environment, the probable costs to future generations become awesome indeed.

Sincerely,

[redacted] Ex. 6

cc: The Honorable James P. Moran
United States Representative

The Honorable Richard H. Bryan
Chairman, Consumer Subcommittee of the Senate Committee on Commerce, Science and Transportation

The Honorable Cardiss Collins
Chairwoman, Commerce, Consumer Protection, and Competitiveness Subcommittee of the House Committee on Energy and Commerce

The Honorable John Glenn
Chairman, Senate Committee on Governmental Affairs

The Honorable Joseph I. Lieberman
Chairman, Clean Air and Nuclear Regulation Subcommittee of the Senate Committee on Environment and Public Works

The Honorable Philip R. Sharp
Chairman, Energy and Power Subcommittee of the House Committee on Energy and Commerce

The Honorable Mike Synar
Chairman, Environment, Energy, and Natural Resources Subcommittee of the House Government Operations Committee