

February 7, 2002

The Honorable Gloria Romero  
Chair, Senate Select Committee on Urban Landfills  
California State Senate  
State Capitol, Room 4062  
Sacramento, CA 95814

Dear Senator Romero:

The California Chapter of the American College of Nuclear Physicians has reviewed your draft legislation dated January 14, 2001, and strongly requests that you not introduce the proposed measure. **Nothing** in California's present requirements for waste disposal by licensed facilities or decommissioned facilities is of any danger to the public **at all**, and material that is permitted in landfills is **safe**.

The American College of Nuclear Physicians is a professional organization of physicians board certified in Nuclear Medicine. This is the medical specialty that uses radioactive pharmaceuticals for diagnostic and therapeutic use. This specialty actually began in California in 1936, and today, over 1.5 *million* procedures are performed each year on patients in California. This does not count *in vitro* laboratory procedures using radioactive material performed on body fluids such as blood and urine. While most of our procedures use short-lived radionuclides, some use long-lived ones and *virtually all* our short-lived radionuclides are contaminated, to some extent, with long-lived radionuclides. While Committee to Bridge the Gap, the Sierra Club, and various similar antinuclear groups such as Greenpeace have been told this for about 2 decades, these groups persist in spreading the same tired untruthful claim that medical radionuclides are short-lived and harmless, and can, in some mysterious (and impossible) way, be separated from those radionuclides produced in nuclear reactors.

In your January 14, 2002 letter to Diana Bonta, R.N., Director of the California Department of Health Services, you stated that "As I understand it, this [new] regulation, as interpreted by the Department, allows, for the first time in California history, the disposal of radioactive waste in California landfills". This is patently untrue; radioactive material has been permitted in landfills ever since it was regulated. ***The important thing to understand is that these permissible, exceedingly low levels of radioactive material result in miniscule radiation doses, and convey zero risk to anyone.***

Do you have a wood-burning fireplace? If so, you dispose of the ashes in the ordinary trash, most likely. Wood is contaminated with naturally occurring radionuclides such as carbon-14 (halflife of 5,730 years), as well as radionuclides

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that originated from fallout in atomic weapons tests such as Cs-137 (half-life of 30.1 years). Wood ash concentrates the radionuclides tremendously. Even so, the radiation dose levels are miniscule and of no consequence whatsoever. Some people recycle their wood ash for fertilizer. This is not harmful, either. ***It is important to understand that the radiation dose to people from wood ash in landfills is probably larger than that of virtually any trash permitted from a licensed site. Radiation dose from trash from decommissioned sites is much lower even than that.***

Radioactive material has always gone to landfills from patient body-fluid contaminated waste. Babies getting Nuclear Medicine procedures have radioactive diapers, which go to landfills. The radioactivity didn't hurt the baby, and it is not going to hurt anyone who goes near the landfill. Nasal fluid on tissues, saliva on paper napkins, chicken bones, apple cores, and the like, and bloody menstrual pads are all examples of sources of radioactive material which go to landfills but result in miniscule radiation doses to anyone and zero harm.

We live in a sea of radioactivity, breathing it in with every breath and being exposed to it from the ground, in building materials, in the water we drink and the food we eat throughout our lives. Sleeping in bed with another person confers radiation dose from that other person's potassium-40 occurring naturally in muscle mass. Big, muscular men impart higher radiation doses to their partners than do 90-lb. weaklings. Muscle from other animals, such as cows, also contains potassium-40, and the leftover fast-food hamburger thrown in the trash is radioactive as well.

The average radiation dose received in the United States is 300 mrem per year. In Colorado, radiation levels are the highest in the nation. In Denver it is about 530 mrem, in ski areas about 600 mrem, and in Copper City, about 890 mrem/year. Colorado is tied for the third *lowest* cancer death rate in the United States. There are areas in other countries with background radiation doses averaging *ten times* the United States average, and no deleterious effects have been observed. Radiation workers, who may receive up to 5000 mrem/year from work-related sources, have no increased cancer rates, and often show *decreased* cancer rates. Research has consistently shown that very low radiation doses have no effect, low doses may have no effect or be beneficial (hormesis), and that it is only moderate and high doses that are detrimental. Extrapolating expected cancer deaths from high doses down to low or very low doses is scientifically incorrect, just as it is with chemicals. (For example, you require iron and cobalt for life, but large doses of either will kill you. If you deprive people of all iron because it is toxic at high doses, the people will die of iron deficiency.)

The Nuclear Regulatory Commission (NRC) has set requirements for decommissioning that will ensure against any hazard to anyone. The maximum radiation dose permitted from a decommissioned site is 25 mrem/year to the most exposed person occupying that site, an amount equal to 4% of average annual background. Any trash from such a site would have only insignificant, miniscule quantities of radioactive material, if any. California has adopted the NRC standard, as it is expected to do. Antinuclear groups presented their point of

view during the NRC rulemaking process, but, lacking any scientifically valid data or rational value, their testimony was received but their conclusions rejected. These antinuclear groups are just reiterating what they did before, and it is still irrational and scientifically useless.

Thousands of licensees have been decommissioned in California, and thousands more will continue to decommission laboratories and buildings. Virtually every university, college, medical school, hospital, biotech company, aerospace company, and many other industries have closed laboratories or torn down buildings in which radioactive materials have been used, and have moved radioactive materials activities into other structures or have terminated their radioactive materials licenses. It is absurd to contemplate forcing all these institutions to never again dispose of trash in an ordinary landfill. They would all have to close down, and no new facilities would start up. *Is this what you want?* The bill's sponsors have the clear objective of discouraging any beneficial uses of radioactivity. As an example, UCLA has decommissioned various areas and laboratories, and will continue to do so, as it is in the process of building an entirely new medical school and hospital after the original was damaged in the Northridge earthquake. Do you want construction to stop? After all, it cannot build a hospital that will have no access to sanitary landfills. Do you want UCLA to continue to use a damaged building and hospital? We doubt that this is your intent. The bill's sponsors, however, are well aware that this will happen.

The California Chapter of the American College of Nuclear Physicians is ready to help you and your staff understand radioactivity, radiation dose, cancer, and existing radiation regulation. We are certain that the Health Physics Society, the Society of Nuclear Medicine, and the American Association of Physicists in Medicine will help as well, in addition, of course, to the competent radiation professionals in the Radiologic Health Branch of the Department of Health Services. We strongly suggest that you get your information from radiation professionals with extensive education, training, experience, and certification, instead of relying on antinuclear con artists.

Please drop your proposed legislation, in any and all forms, completely. For factual radiation information we refer you to our Chair of Government Affairs:

Carol S. Marcus, Ph.D., M.D.  
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(Dr. Marcus will be unavailable Feb. 8-13 and Feb. 17-23.)

Sincerely,



Thomas R. Pounds, M.D.  
President

Cc: Mr. Michael Miiller  
Office of Senator Romero

✓ Alan Pasternak, Ph.D.  
Technical Director, California Radioactive Materials  
Management Forum

Edgar D. Bailey, Chief  
Radiologic Health Branch  
California Department of Health Services

Diana Bonta, R.N., Director  
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