Advocates for Responsible Disposal in Texas

Radioisotope Uses

- In the United States, 13 million medical procedures involving radioactive isotopes are performed every year.
- One out of every three U.S. hospital patients undergoes procedures involving radioactive materials.
- At least 80 percent of prescription drugs are tested with radioactive materials.
- Radioactive materials are used to sterilize hospital instruments and bandages to prevent the spread of infection.
- Ten out of the last 15 Nobel prizes in medicine and physiology involved research using radioactive materials.
- Radioactive materials are used in indicator lights in kitchen appliances.
- Radioactive materials are used to gauge the thickness of thin plastic and sheet metal, rubber, textiles and paper during manufacturing.
- The rubber in tires is toughened by treatment with radiation; radioactive materials were used to assure that steel belts in radial tires are properly aligned.
- Radioactive materials are used by the road construction and building industries to gauge moisture content of soil.
- Radioactive materials are used to sterilize the packaging for medication, contact lenses and contact lense solution, hair products, and cosmetics.
- Radioactive materials are used in the manufacturing of writing paper to gauge its thickness.
- Computer disks are treated with radioactivity to help them retain data better.
- Airlines use radioactive sensors to detect explosives hidden in the baggage.
- Radioactive materials are used in animal nutrition research.
- Radioactive materials are used in forestry research.
- Commercial, medical and research activities that use radioactive isotopes account for more than 2000,000 jobs in Texas, according to a 1994 study conducted by Management Information Services, Inc. That study also found that the use of radioactive materials generated more than $2.7 billion in tax revenues in the state in 1991.
- Many of the radioisotopes used by scientists, doctors and researchers in their work, as well as in consumer products, are also found in the by-products of nuclear power production. Here are some examples:
  - Technetium-99M – the most widely used radioactive pharmaceutical. Doctors use it to diagnose problems with the brain, bones, liver, spleen, and kidneys.
  - Americium-241 – used in smoke detectors to protect homes and businesses.
  - Carbon-14 – needed to test drugs so doctors can be sure of no harmful side effects.
  - Cesium-137 – used to treat cancer tumors, measure drug dosages, control the flow of oil in pipelines, and check the proper fill level for packaged foods.
  - Cobalt-60 – used in sterilizing medical equipment and improving the reliability of industrial oil burners.
  - Nickel-63 – used as a voltage regulator, and to detect explosives.
  - Plutonium-238 – used to power more than 20 NASA spacecraft since 1972.

No matter the source, once these radioisotopes have performed their purpose, they all become low-level waste. The only safe way to handle the waste is by disposing of it a permanent low-level radioactive waste facility.

P.O. Box 26586, Austin, Texas 78755-0586 • (512) 391-0400 Fax (512) 391-0602

Advocates for
Responsible
Disposal in
Texas

P.O. Box 26586, Austin, Texas 78755-0586 • (512) 391-0400 Fax (512) 391-0602