



The Dangers of Irradiation Facilities

Supporters of food irradiation often say that irradiation facilities are safe. They say accidents rarely happen. They say injuries and deaths are infrequent. They say the public is in no danger. The historical record says otherwise. Since the 1960s, dozens of accidents - as well as numerous acts of wrongdoing - have been reported at irradiation facilities throughout the United States and the world. Radioactive water has been flushed down toilets into the public sewer system. Radioactive waste has been thrown into the garbage. Radiation has leaked. Facilities have caught fire. Equipment has malfunctioned. Workers have lost fingers, hands, legs and, in several cases, their lives. Company executives have been charged with cover-ups and, in one case, sentenced to federal prison. The debate over food irradiation would not be complete without an understanding of the risks associated with the technology itself. Here are some examples of what can go wrong.

Gamma-Ray Accidents

Decatur, Georgia

In June 1988, a capsule of radioactive cesium-137 - a waste product from nuclear weapons production - sprung a leak at a Radiation Sterilizers plant near Atlanta. Though the leak was contained to the site, two of the three exposed workers spread radioactivity to their cars and homes. And an estimated 70,000 milk cartons, contact lens solution boxes and other containers were shipped out after they were splashed with radioactive water. Only about 900 of the contaminated containers were recalled. The ensuing taxpayer-funded cleanup cost more than \$30 million, after which a government report concluded that "the public health and safety could have been compromised."

Dover, New Jersey

In June 1986, two senior executives of Palo Alto, CA-based International Neutronics were indicted on federal charges of conspiracy, mail

fraud and wire fraud in connection with an October 1982 spill of 600 gallons of water contaminated by radioactive cobalt-60. After a pump malfunctioned, workers were instructed to pour the radioactive water down a shower drain that emptied into the public sewer system. Workers were also ordered to wear their radiation-detection "badges" in such a way to falsify radiation levels. In the words of a federal prosecutor, company executives "bamboozled" Nuclear Regulatory Commission (NRC) inspectors by delaying an inspection of the facility, where food, gems, chemicals and medical supplies were irradiated. A \$2 million cleanup included the cost to dispose of radioactive material at a nuclear waste dump in South Carolina. Company vice president Eugene O'Sullivan, a former member of the U.S. Atomic Energy Commission, was convicted of conspiracy and fraud in October 1986.

Honolulu, Hawaii

In 1979, decontamination began at the state-run Hawaiian Developmental Irradiator at Fort

Armstrong where, years earlier, radioactive water leaked onto the roof and the front lawn. Nearly 100,000 pounds of steel, 250 cubic feet of concrete and 1,100 cubic feet of soil were removed and taken to the nuclear waste dump in Hanford, Wash. The plant was shut down in 1980 and the remaining cobalt-60 was shipped to the University of Hawaii. Hawaii taxpayers paid most of the \$500,000 cleanup.

Parsippany, New Jersey

In June 1974, William McKimm, the radiation director at an Isomedix cobalt-60 facility, was exposed to a near-fatal dose of 400 rems while irradiating medical supplies. McKimm was critically injured and hospitalized for a month. Two years later, a fire near the cobalt storage pool released chemicals into the pool that caused the cobalt rods to corrode and leak. Radioactive water was then flushed down the toilet into the public sewer system. Eventually, concrete around the cobalt-60 pool, as well as the toilet and bathroom plumbing, was found to be radioactive and taken to a nuclear waste dump. The amount of radiation released into the public sewer system was never determined.

Rockaway, New Jersey

In 1977, Michael Pierson was exposed to a near-fatal dose of 150-300 rems at a Radiation Technology facility when a system designed to protect workers from radioactive cobalt-60 failed. In 1986, the NRC cited company executives for intentionally disabling the system. In 1988 - after more than 30 NRC violations, including one for throwing out radioactive garbage with the trash -- company president Martin Welt and nuclear engineer William Jouris were charged in federal court with 11 counts of conspiracy to defraud the NRC, making false statements and violating the Atomic Energy Act. Welt, who threatened to fire workers who didn't lie to NRC investigators, was also charged with obstruction of justice. Both men were convicted. Jouris was sentenced to probation; Welt was sentenced to two years in prison, placed on three years probation and fined \$50,000.

Electron-Beam Accidents

◆ In 1991, a Maryland worker ignored safety warnings and received a 5,000-rad dose from a 3 million electron-volt linear accelerator. He lost four fingers.

◆ In 1992, a mishap at a 15 million electron-volt linear accelerator in Hanoi cost the facility's research director a hand and several fingers.

Fatalities in Other Countries

◆ In February 1989, three El Salvadoran workers suffered serious burns and radiation sickness when they were exposed to cobalt-60. None had received formal training to operate the equipment, which was made by Atomic Energy of Canada Limited. Eventually, one worker died and the others had their legs amputated.

◆ In 1975, an Italian worker was exposed to cobalt-60 when he bypassed all safety controls, climbed onto a conveyor belt and entered the irradiation chamber. He died 12 days later.

◆ In 1982, a Norwegian worker received a 1,000-rem cobalt-60 dose while trying fix a jammed conveyor belt. He died 13 days later.

◆ In 1990, an Israeli worker was exposed to cobalt-60 after an alarm failed. He died 36 days later.

◆ In 1991, a worker in Belarus was exposed to cobalt-60 after several safety features were circumvented. He died 113 days later.

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