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#513 - Fallout From the Peaceful Atom
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It was 1953 --seven years after Hiroshima --when President Dwight Eisenhower announced plans for the "peaceful atom" so that "the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life."[1,pg.148] The shining star of this program was to be thousands of nuclear-powered electricity-generating plants, worldwide, making electricity "too cheap to meter."[1,pg.149]

But electricity was not the only promised benefit. According to author Catherine Caufield, news articles soon began appearing with headlines such as, "Forestry Expert Predicts Atomic Rays Will Cut Lumber Instead of Saws," and "Atomic Locomotive Designed."

Between 1946 and 1961, the AEC [Atomic Energy Commission] worked diligently --and spent $1.5 billion of taxpayers' money --to develop an atomic airplane. (The entire Manhattan Project to develop the atomic bomb had cost $2.2 billion.) Problems with the atomic airplane were obvious from the beginning. The nuclear reactor powering the plane had to be shielded to prevent the crew from getting fried, but shielding is heavy, so an atomic-powered airplane could never get off the ground. According to NEW YORK TIMES science-columnist Peter Metzger, for a time the AEC considered reducing the shielding and employing only older pilots who wouldn't be planning to have any more children. Another problem was the radioactivity that would build up inside the nuclear engine: after running for a year, the engine would contain 20 times as much radioactivity as was released by the Hiroshima bomb. A plane crash would leave a major legacy of radioactive waste spread across the countryside.[2,pgs.203-208] The project was abandoned.

The Atoms for Peace program spawned other expensive schemes. For example, NERVA (Nuclear Engine for Rocket Vehicle Application) was developed at a cost of $1.4 billion. On January 16, 1965, the AEC staged a nuclear accident in the Nevada desert; a NERVA rocket was launched and a portion of its nuclear engine was purposefully burned up so that AEC scientists could study environmental effects of radiation. Six million residents of southern California were showered with radioactive debris by this event.[3] Glenn Seaborg, former head of the AEC, concluded that NERVA would be too dangerous to launch from earth because of radioactive releases.[2,pg.210] The project died a public death in 1972, but in 1994 it was revealed that the Department of Defense had gone ahead and developed a nuclear-powered rocket using its "black budget" (secret funds), as part of the Strategic Defense Initiative, popularly known as the Star Wars program.[4] The Star Wars program itself was subsequently abandoned.

The keel of a nuclear merchant ship, the SAVANNAH, was laid in 1958. The ship toured the world, aiming to improve America's image abroad. However, the SAVANNAH was deactivated in 1971, and the project was abandoned.

In the mid-1960s, the whiz kids at the Los Alamos Scientific Laboratory in New Mexico began promoting nuclear-powered pacemakers to be implanted in the chests of patients with heart problems. Pacemakers monitor heartbeat and provide an electrical jolt when needed. At least 100,000 Americans have conventional (non-nuclear) pacemakers installed in their chests at any point in time.

The nuclear-powered pacemaker took advantage of a natural characteristic of plutonium-238 which is so radioactive that it gives off heat, which can be used to make a "nuclear battery" producing electricity. Los Alamos scientists spent several million dollars, and several years of effort, on the nuclear pacemaker before they realized there was no way to keep track of such pacemakers and that plutonium- 238 would soon be wafting out of the smokestacks of crematories. Plutonium is among the half-dozen most toxic materials ever discovered and it spontaneously bursts into flame upon contact with air, then burns and gives off a fine, highly-radioactive dust. Airplane accidents, certain kinds of gunshot wounds, and hazards to firefighters presented additional safety questions, and the nuclear pacemaker was abandoned.[2,pgs.220-224]

The military developed a thousand-watt "man-pack" plutonium-powered battery for use by troops. The device never went into service because, if one were blown up, a large area would have been permanently contaminated by plutonium dust. Nevertheless in 1970, newspaper writers optimistically predicted that within 3 to 5 years campers would be carrying their own plutonium-powered man-packs into the woods. [2,pg.226] The project was abandoned.

The Bulova watch company in 1969 announced it was developing a plutonium-powered wrist watch, but the project was abandoned.[2,pg.227]

The Navy developed plutonium-impregnated "long johns" to keep divers warm in cold waters. One set of nuclear long johns contained enough plutonium to provide one trillion (one million million) "maximum permissible lung burdens" of plutonium (333 maximum permissible lung burdens for every human on earth in 1970). One accident involving the loss, rupture or abandonment of one diving suit and the "no swimming" sign would go up forever. The project was abandoned.[2,pg.227]

The Monsanto Research Corporation, which operated the lab where the diving suit was developed, promoted a nuclear-powered coffee pot. Such a pot would perk for 100 years relying only on its self-contained plutonium-238 heat source. The plutonium in each pot (1/5th of an ounce) would contain 10 million lethal doses of plutonium.[2,pg.227] The project was abandoned.

Even the crown jewel of the peaceful atom program --nuclear-generated electric power --fell upon hard times. Despite billions of dollars of subsidies from Uncle Sam to help it grow, a multitude of problems beset the industry from the start. The upshot has been that, since 1975, no new nuclear power plants have begun construction in the U.S. For all practical purposes, in the U.S., the technology has been abandoned.

Despite the failure of these many schemes, one part of the peaceful atom program has been kept alive. Beginning in the late 1950s, the Atomic Energy Commission began promoting a new way to preserve food -- zap it with large doses of radiation. By zapping food with 100,000 to three million rad of energy, insects and bacteria could be killed, reducing food spoilage. (This is a large dose; 600 rad is sufficient to kill half of the humans thus exposed. In other words, 600 rad is the LD-50 for humans, so a million rad is an enormous dose.) Unfortunately, it became clear from the earliest days that a dose of radiation sufficient to achieve complete sterilization would also cause profound changes in the food: unpleasant, unfamiliar, and dangerous degradation products formed in the food itself. Therefore, from the very beginning, the program used less radiation than could achieve complete sterilization, thus scaling back the benefits from "long-term preservation" to "possibly extending the shelf-life of some foods." To this day, no study has ever added up and described the benefits to be derived from irradiated food.

Lack of quantified benefits has not slowed the program, however. In 1967, a truck-mounted food irradiator built by the AEC criss-crossed the country promoting the benefits of irradiated food. In the late 1960s, the Army produced irradiated ham, to provide ham sandwiches for frontline troops. However, in 1968, the Food and Drug Administration declared that the Army's irradiated ham could not be considered safe. [2,pg.229] For a time, this put a damper on food irradiation.

Despite this setback, the atomic authorities have kept up a steady drumbeat, ceaselessly promoting irradiated food. In 1986, the Food and Drug Administration (FDA), issued a mystifying and scientifically- controversial decision, approving the irradiation of

spices, pork, fruits and vegetables. The data that the FDA relied upon have been challenged.[5] Nevertheless, despite immense effort by government to create this new industry, no market for irradiated food has ever developed. The public just doesn't seem interested. Therefore food irradiation is legal in this country but largely unused, except in the case of a few spices. Still the government keeps pressing on.

Originally, food irradiators used cobalt-60 as the source of radiation. But in recent years the government has been urging a shift to cesium- 137. Some critics suspect that food irradiation proposals are a way to use up the nation's limited supply of cesium-137 and thus create a need to produce more of it.[6] Evidence for this is the fact that the government is willing to lease cesium-137 at bargain prices (0.83 cents per curie per year), compared to cobalt-60, which sells for $1 per curie on the open market.

It is true that if a food irradiation industry can be created, it will soon sop up all available cesium-137, and thus create a demand for more. This would require the government to start reprocessing nuclear waste instead of burying it in the ground somewhere. If wastes were reprocessed to extract the cesium, two things would follow automatically: the cesium would become the responsibility of states, thus relieving the federal government of an enormous radwaste problem. And, secondly, plutonium could be extracted from the wastes simultaneously --a dream that the atomic establishment has savored since 1950, but which has been frustrated in recent decades by fears that the plutonium would fuel a black market among terrorists and rogue governments. This is a valid fear. See REHW #473. In sum, the government wants to create a food irradiation industry, thus requiring waste reprocessing to extract cesium-137, in order to revitalize a dormant plutonium-extraction program, critics argue.

For our part, we see the peculiar pressure to create a food irradiation industry in a somewhat different light. Now that the world's scientific community has reached consensus that global warming is upon us, and that humans are causing the problem (at least in part) by burning oil, gas, and coal, pressure will mount steadily to shift to new energy sources. There are only two alternative sources of energy: nuclear and solar. Nuclear is intrinsically centralized and therefore politically controllable; solar is intrinsically dispersed and therefore politically uncontrollable. For good reasons, nuclear power (and the people promoting it) have gained unsavory reputations.[2] But we believe the greatest barrier to the future growth of nuclear power is still public unwillingness to tolerate machines that create and release radiation. The public's distaste for radiation has been, and still is, the ultimate barrier to nuclear power.

What better way to undercut distaste for radiation than by putting irradiated food on our plates? Food is our most intimate source of sustenance. It nourishes us as we take it into our bodies during daily rituals of pleasure, sociability, and renewal. If we can all be convinced to irradiate our food, then our great respect for, and fear of, radiation will dissipate and ultimately vanish. By this means --and probably ONLY by this means --can the way be cleared for deployment of the global nuclear power industry envisioned in Eisenhower's day. (See REHW #473.) Trillions of dollars --and major issues of global political control and environmental contamination --are at stake.

The push to irradiate food has intensified enormously in recent months. To learn more about food irradiation, and how you might become involved, contact Food & Water, Inc.; phone toll-free 1-800-EAT-SAFE.

--Peter Montague (National Writers Union, UAW Local 1981/AFL-CIO)

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[1] Catherine Caufield, MULTIPLE EXPOSURES; CHRONICLES OF THE RADIATION AGE (New York: Harper & Row, 1989).

[2] H. Peter Metzger, THE ATOMIC ESTABLISHMENT (NY: Simon & Schuster, 1972).

[3] "U.S. Staged Nuclear Accident in 1965," FACTS ON FILE WORLD NEWS DIGEST Dec. 31, 1994, pg. 986F3.

[4] "'Star Wars' A-Rocket Reported," FACTS ON FILE WORLD NEWS DIGEST April 18, 1991, pg. 276B2.

[5] Donald B. Louria, "Zapping the Food Supply; Irradiated Food is Not Radioactive, But is it Good for You?" BULLETIN OF THE ATOMIC SCIENTISTS Vol. 46 No. 7 (1990), pgs. 34-36.

[6] Ken Terry, "Why is D.O.E. for Food Irradiation?" THE NATION February 7, 1987, pgs. 142-146. And see Judith Johnsrud, "Food Irradiation: Its Environmental Threat, It's Toxic Connection," THE WORKBOOK Vol. 13 No. 2 (April/June 1988), pgs. 47-58.

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