

# Fukushima Three Years On. Devastating Environmental and Health Impacts

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The third anniversary of the Fukushima meltdown will occur on March 11th. The news is that Prime Minister Shinzo Abe and major Japanese corporations want to re-open the 50 other nuclear power plants that closed when Fukushima blew up, calling them a friendly economic source of cheap power.

Will this end up with business as usual? We were recently asked if we thought that Fukushima could ever be cleaned up. We have to say “no,” based upon what we know of the biology, chemistry and physics of nuclear power and isotopes and the history of nuclear development. Chernobyl melted down in 1986 and is still releasing radioisotopes.

Not all life systems were examined around Chernobyl, but of those that were - wild and domestic animals, birds, insects, plants, fungi, fish, trees, and humans, all were damaged, many permanently, thus what happens to animals and plants with short-term life spans is predictive of those with longer ones.

Worldwide, some 985,000 “excess” deaths resulted from the Chernobyl fallout in the first 19 years after the meltdown. In Belarus, north of Chernobyl, which received concentrated fallout; only 20% of children are deemed to be “healthy” although previously 80% were considered well. How can a country function without healthy and productive citizens? Notable in the U. S. is the Hanford Nuclear Site in Washington State, built some 70+ years ago by 60,000 laborers, and currently leaching radioisotopes into the Columbia River. DuPont was the original contractor, but since, multiple corporations, each paid millions of dollars and have yet to contain the leaking radioactivity.

Every nuclear site is also a major industrial operation, contaminated not only with radioactive materials, but multiple toxic chemicals, such as solvents and heavy metals.

In 1941, the folk singer, Woody Guthrie was hired by the US government’s Department of the Interior to promote the benefits of building the Grand Coulee and Bonneville dams to harness the power of the Columbia River, and to generate electricity and supplement irrigation. It is unlikely that Guthrie learned that the dams were to provide electricity to the Hanford nuclear site, then under construction to produce plutonium for bombs. He sang:

“Roll on, Columbia roll on Roll on,

Columbia roll on

Your power is turning our darkness to dawn

So roll on Columbia, roll on.”

Rather than turning darkness to dawn, we released nuclear weapons that made the cities of Hiroshima and Nagasaki “Brighter Than a Thousand Suns” - the title of Robert Jungk’s prophetic book.

Guthrie’s monthly salary was \$266 - compare that to the yearly \$2 billion it is costing taxpayers now.

From 1946 until 1958, the U. S. tested 67 nuclear weapons in the Marshall Islands, the most famous of which is Bikini Island. Stillbirths, miscarriages and thyroid gland defects were detected early in the islanders. 60 years on, decontamination of Rongelap, a small island, that lies about 180 km east of Bikini Atoll, continues.

Only about 0.15 square kilometer of land has been decontaminated, or just 2 percent of the island’s area, at a cost of \$40 million so far. In 1956, the Atomic Energy Commission regarded the Marshall Islands as “by far the most contaminated place in the world”. Within the U. S., the Nevada Test Site, and countless other sites remain contaminated.

The most recently reported releases occurred in Feb. 2014 at the Department of Energy’s Waste Isolation Pilot Plant (WIPP) near Carlsbad, NM. Detected in the air were of plutonium-239/240 and americium-241, transuranic elements strongly linked to cancer. So far, thirteen federal contract workers have measured levels of internal radioisotope contamination. The release spread contaminants through more than 3,000 feet of tunnels, up a 2150-foot tall exhaust shaft, out into the environment, and to an air monitoring station approximately 3,000 feet northwest of the exhaust shaft.

Fukushima is still leaking large quantities of Cs-137 and Sr-90 into the Pacific Ocean, where all forms of marine life will absorb them - from algae to seaweed, to fish, to sea mammals and ultimately to humans who consume the contaminated sea life. Our recently released peer-reviewed paper confirms hypothyroidism in newborns in California, whose mothers were pregnant during the early releases from Fukushima. Thyroid abnormalities were detected early in Marshall Islanders and in Belarus residents of Gomel located near Chernobyl.

Radioactive iodine, known to interfere with thyroid function entered the U. S. from Fukushima in late March, shortly after the meltdowns, and was carried by dairy products resulting in damage to the unborn. It takes ten half-lives for an isotope to decay. Sr-90 and Cs-137 have half-lives of approximately 30 years, which means three centuries will occur before the initial releases are gone, and the releases have not stopped. There are some 26 nuclear reactors in the United States with the same design as those at Fukushima, and they pose a significant risk to people and the environment.

The Indian Point Nuclear Power Reactors are located some 35 miles from mid-town Manhattan, with 18 million people living within 50 miles of the site. What would be the environmental, human and economic costs if the Indian Point reactors were to fail? The current estimated price tag to “clean up” the TEPCO mess at Fukushima is \$500 billion (that’s billion, with a “B.”

For us who have trouble thinking of such numbers, it will take 96,451 years to spend \$10.00 per minute. Unless we close the existing nuclear power plants and build no new ones, we are destined to repeat the on-going stories of Fukushima, Chernobyl, Three Mile Island in Pennsylvania, and the myriad other sites that have already caused untold environmental, health, social, and economic costs. So will it be sanity or business as usual? Perhaps it was Albert Einstein who defined insanity as doing the same thing over and over and expecting a different result.

We must choose a sane path away from nuclear energy.

Business as usual is insane.

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