

## Fermi3CEm Resource

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**From:** Kim Bergier [2mistnbc@gmail.com]  
**Sent:** Tuesday, December 06, 2011 3:34 PM  
**To:** Fermi3COLEIS Resource  
**Cc:** Dr. Helen Caldicott; John LaForge  
**Subject:** Fermi 3 nuclear power plant should NEVER be built!  
**Attachments:** No dose too low-Every radiation exposure can cause cancer.rtf; 2011-12-02 After Fukushima-Enough is Enough, by Helen Caldicott.doc

Mr. Bruce Olson,

I plan to attend the NRC hearing on December 15th, 7-9 pm regarding Detroit Edison's Application to build a New nuclear Reactor, Fermi 3 at Monroe, Michigan.

I want you to have the attached fact sheet and article so you can read them and have them via computer so they can be shared easily.

I personally know some Japanese whose lives have been forever changed by the nuclear power catastrophe of Fukushima. In 1963 I have visited some survivors of the nuclear bomb dropped on Hiroshima, so have understood the reality of the negative health risks of nuclear radiation for 48 years. This included helping some Russian teenagers spend 6 weeks in the U.S., after Chernobyl's meltdown, so their immune systems had a chance to be strengthened.

I have also heard both Dr. Helen Caldicott and John LaForge, of Nukewatch, speak and consider them key teachers of mine. Please read her article and Nukewatch's fact sheet as considerations are made to NOT build a new Fermi 3 nuclear power plant.

There are much healthier and less expensive ways to increase energy production, as Helen Caldicott outlines in her article and book, Nuclear Power is Not The Answer.

Thank you for you consideration,

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# **No dose too low Every radiation exposure can cause cancer**

~ A NUKEWATCH FACT SHEET ~

There is no safe level of exposure to radiation, only legally "allowable" doses. Every federal agency that regulates industrial releases or the medical uses of radiation warns that any external or internal exposure to radiation, no matter how small, increases one's risk of cancer.

However, when a radiation accident happens major news organizations are often quick to down-play or outright misstate the potential health and environmental consequences. The second or third sentence in reactor accident or radiation release stories often includes the phrase "no danger to the public" or the like.

A case in point is a classic *New York Times* report on increased cancer risk from radiation: "But even the new estimate that radiation is a more potent carcinogen than previously believed should cause no concern for the average person, experts said, because the public is not exposed to enough radiation to exceed levels considered safe."<sup>1</sup> This is false. Today radiobiologists all agree that "one can no longer speak of a 'safe' dose level."<sup>2</sup> What should have been reported is that the public is not supposed to be exposed to doses that exceed *allowable* levels.

Following are the official U.S. government regulatory agency assessments:

## U.S. Environmental Protection Agency

"Based on current scientific evidence, any exposure to radiation can be harmful (or can increase the risk of cancer). .... In other words, it is assumed that no radiation exposure is completely risk free."<sup>3</sup>

"[T]here is no level below which we can say an exposure poses no risk. ... Radiation is a carcinogen. It may also cause other adverse health effects, including genetic defects in the children of exposed parents or mental retardation in the children of mothers exposed during pregnancy."<sup>4</sup>

"Current evidence suggests that any exposure to radiation poses some risk, i.e. there is no level below which we can say an exposure poses no risk."<sup>5</sup>

## U.S. Department of Energy

"[T]he effects of low levels of radiation are more difficult to determine because the major effect is a very slight increase in cancer risk. However, U.S. Government regulations assume that the effects of all radiation exposures are cumulative and should be limited as much as 'reasonably possible.'<sup>6</sup>

## U.S. Nuclear Regulatory Commission

"[The] radiation protection community conservatively assumes that any amount of radiation may pose some risk for causing cancer and hereditary effect, and that

the risk is higher for higher radiation exposures. A linear no-threshold dose-response relationship is used to describe the relationship between radiation dose and the occurrence of cancer ...any increase in dose, no matter how small, results in an incremental increase in risk."<sup>7</sup>

## U.S. Department of Health and Human Services

"Ionizing radiation is invisible, high-frequency radiation that can damage the DNA or genes inside the body.

"Some patients who receive radiation to treat cancer or other conditions may be at increased cancer risk. ... it is possible that there is a small risk associated with this exposure.

"...children whose mothers received diagnostic X-rays during pregnancy ... were found to have increased risks of childhood leukemia and other types of cancer, which led to the current ban on diagnostic X-rays in pregnant women."<sup>8</sup>

## National Academy of Sciences

The National Academy of Science's 7th book-length report on the effects of ionizing radiation exposure concluded that "there is a linear dose-response relationship between exposure to ionizing radiation and the development of radiation-induced solid cancers in humans. The committee further judges it unlikely that a threshold exists for the induction of cancers ..."<sup>9</sup> In other words, as committee member Herbert L. Abrams of Harvard said, "There appears to be no threshold below which exposure can be viewed as harmless."<sup>10</sup>

## National Council on Radiation Protection

"... every increment of radiation exposure produces an incremental increase in the risk of cancer."<sup>11</sup>

## Endnotes

1. Philip Hilts, "Higher Cancer Risk Found in Low-Level Radiation," *New York Times*, Dec. 20, 1989.
2. Ian Fairlie & Marvin Resnikoff "No dose too low," *The Bulletin of the Atomic Scientists*, Nov/Dec 1997, p.54
3. U.S. EPA, "Ionizing Radiation Series," No.2, Air & Radiation, 660IJ, EPA 402-F-98-010, May 1998.
4. U.S. EPA, "Radiation: Risks & Realities," Air & Radiation, 6602J, EPA402-K-92-004, Aug. 1993.
5. *Ibid.*
6. U.S. Dept. of Energy, DOEINE-0074, "Understanding Radiation," p. 8 & 9. <<http://www.ne.doe.gov/pdtFiles/UNDERRAD.PDF>>.
7. U.S. NRC, "How Does Radiation Affect the Public?" <http://www.nrc.gov/what-we-do/radition/affect.html>
8. U.S. Dept of Health & Human Services, "Cancer and the Environment: Ionizing radiation," p. 10. <[www.cancer.gov/images/Documents/5d17e03e-b39f-4b40-a214-e9e9099c4220/Cancer%20and%20theo/020Environment.pdf](http://www.cancer.gov/images/Documents/5d17e03e-b39f-4b40-a214-e9e9099c4220/Cancer%20and%20theo/020Environment.pdf)>.
9. National Academy of Sciences, "Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII, Phase 2," Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation, National Research Council, June 29, 2005.
10. Sharon L. Daniel, *Stanford Report*, Stanford University, Oct. 25, 2005.
11. National Council on Radiation Protection, "Evaluation of the Linear-Non-threshold Dose-Response Model for Ionizing Radiation," NCRP report 136, Bethesda, MD, June 4, 2001, cited in *Science for Democratic Action*, IEER, June 2005.

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## **After Fukushima: Enough Is Enough**

by Dr. Helen Caldicott

The nuclear power industry has been resurrected over the past decade by a lobbying campaign that has left many people believing it to be a clean, green, emission-free alternative to fossil fuels. These beliefs pose an extraordinary threat to global public health and encourage a major financial drain on national economies and taxpayers. The commitment to nuclear power as an environmentally safe energy source has also stifled the mass development of alternative technologies that are far cheaper, safer and almost emission free — the future for global energy.

When the Fukushima Daiichi reactors suffered meltdowns in March, literally in the backyard of an unsuspecting public, the stark reality that the risks of nuclear power far outweigh any benefits should have become clear to the world. As the old quip states, “Nuclear power is one hell of a way to boil water.”

Instead, the nuclear industry has used the disaster to increase its already extensive lobbying efforts. A few nations vowed to phase out nuclear energy after the disaster. But many others have remained steadfast in their commitment. That has left millions of innocent people unaware that they — all of us — may face a medical catastrophe beyond all proportions in the wake of Fukushima and through the continued widespread use of nuclear energy.

The world was warned of the dangers of nuclear accidents 25 years ago, when Chernobyl exploded and lofted radioactive poisons into the atmosphere. Those poisons “rained out,” creating hot spots over the Northern Hemisphere. Research by scientists in Eastern Europe, collected and published by the New York Academy of Sciences, estimates that 40 percent of the European land mass is now contaminated with cesium 137 and other radioactive poisons that will concentrate in food for hundreds to thousands of years. Wide areas of Asia — from Turkey to China — the United Arab Emirates, North Africa and North America are also contaminated. Nearly 200 million people remain exposed.

That research estimated that by now close to 1 million people have died of causes linked to the Chernobyl disaster. They perished from cancers, congenital deformities, immune deficiencies, infections, cardiovascular diseases, endocrine abnormalities and radiation-induced factors that increased infant mortality. Studies in Belarus found that in 2000, 14 years after the Chernobyl disaster, fewer than 20 percent of children were considered “practically healthy,” compared to 90 percent before Chernobyl. Now, Fukushima has been called the second-worst nuclear disaster after Chernobyl. Much is still uncertain about the long-term consequences. Fukushima may well be on par with or even far exceeding Chernobyl in terms of the effects on public health, as new information becomes available. The crisis is ongoing; the plant remains unstable and radiation emissions continue into the air and water.

Recent monitoring by citizens groups, international organizations and the U.S. government have found dangerous hot spots in Tokyo and other areas. The Japanese government, meanwhile, in late September lifted evacuation advisories for some areas near the damaged plant — even though high levels of radiation remained. The government estimated that it will spend at least \$13 billion to clean up contamination.

Many thousands of people continue to inhabit areas that are highly contaminated, particularly northwest of Fukushima. Radioactive elements have been deposited throughout northern Japan, found in tap water in Tokyo and concentrated in tea, beef, rice and other food. In one of the few studies on human contamination in the months following the accident, over half of the more than 1,000 children whose thyroids were monitored in Fukushima City were found to be contaminated with iodine 131 — condemning many to thyroid cancer years from now.

Children are innately sensitive to the carcinogenic effects of radiation, fetuses even more so. Like Chernobyl, the accident at Fukushima is of global proportions. Unusual levels of radiation have been discovered in British Columbia, along the West Coast and East Coast of the United States and in Europe, and heavy contamination has been found in oceanic waters.

Fukushima is classified as a grade 7 accident on the International Atomic Energy Agency scale — denoting “widespread health and environmental effects.” That is the same severity as Chernobyl, the only other grade 7 accident in history, but there is no higher number on the agency’s scale.

After the accident, lobbying groups touted improved safety at nuclear installations globally. In Japan, the Tokyo Electric Power Co. — which operates the Fukushima Daiichi reactors — and the government have sought to control the reporting of negative stories via telecom companies and Internet service providers.

In Britain, The Guardian reported that days after the tsunami, companies with interests in nuclear power — Areva, EDF Energy and Westinghouse — worked with the government to downplay the accident, fearing setbacks on plans for new nuclear power plants.

Nuclear power has always been the nefarious Trojan horse for the weapons industry, and effective publicity campaigns are a hallmark of both industries. The concept of nuclear electricity was conceived in the early 1950s as a way to make the public more comfortable with the U.S. development of nuclear weapons. “The atomic bomb will be accepted far more readily if at the same time atomic energy is being used for constructive ends,” a consultant to the Defense Department Psychological Strategy Board, Stefan Possony, suggested. The phrase “Atoms for Peace” was popularized by President Dwight Eisenhower in the early 1950s.

Nuclear power and nuclear weapons are one and the same technology. A 1,000 megawatt nuclear reactor generates 600 pounds or so of plutonium per year: An atomic bomb requires a fraction of that amount for fuel, and plutonium remains radioactive for 250,000 years. Therefore every country with a nuclear power plant also has a bomb factory with unlimited potential. The nuclear power industry sets an unforgivable precedent by exporting nuclear technology — bomb factories — to dozens of non-nuclear nations.

Why is nuclear power still viable, after we’ve witnessed catastrophic accidents, enormous financial outlays, weapons proliferation and nuclear-waste induced epidemics of cancers and genetic disease for generations to come? Simply put, many government and other officials believe the nuclear industry mantra: safe, clean and green. And the public is not educated on the issue.

There are some signs of change. Germany will phase out nuclear power by 2022. Italy and Switzerland have decided against it, and anti-nuclear advocates in Japan have gained traction. China remains cautious on nuclear power. Yet the nuclear enthusiasm of the U.S., Britain, Russia and Canada continues unabated. The industry, meanwhile, has promoted new modular and “advanced” reactors as better alternatives to traditional reactors. They are, however, subject to the very same risks — accidents, terrorist attacks, human error — as the traditional reactors. Many also create fissile material for bombs as well as the legacy of radioactive waste.

True green, clean, nearly emission-free solutions exist for providing energy. They lie in a combination of conservation and renewable energy sources, mainly wind, solar and geothermal, hydropower plants, and biomass from algae. A smart-grid could integrate consuming and producing devices, allowing flexible operation of household appliances. The problem of intermittent power can be solved by storing energy using available technologies.

Millions of jobs can be created by replacing nuclear power with nationally integrated, renewable energy systems. In the U.S. alone, the project could be paid for by the \$180 billion currently allocated for nuclear weapons programs over the next decade. There would be no need for new weapons if the Russian and U.S. nuclear arsenals — 95 percent of the estimated 20,500 nuclear weapons globally — were abolished.

Nuclear advocates often paint those who oppose them as Luddites who are afraid of, or don’t understand technology, or as hysterics who exaggerate the dangers of nuclear power.

One might recall the sustained attack over many decades by the tobacco industry upon the medical profession, a profession that revealed the grave health dangers induced by smoking.

Smoking, broadly speaking, only kills the smoker. Nuclear power bequeaths morbidity and mortality — epidemics of disease — to all future generations.

The millions of lives lost to smoking in the era before the health risks of cigarettes were widely exposed will be minuscule compared to the medical catastrophe we face through the continued use of nuclear power.

Let’s use this extraordinary moment to convince governments and others to move toward a nuclear-free world. Let’s prove that informed democracies will behave in a responsible fashion.

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*Dr. Helen Caldicott is president of the Helen Caldicott Foundation for a Nuclear-Free Planet and the author of “Nuclear Power is Not the Answer”. A pediatrician, Helen Caldicott is founding president of Physicians for Social Responsibility. A native of Australia, she left her Harvard Medical School post in 1980 to work full-time on anti-nuclear education.*

[http://www.nytimes.com/2011/12/02/opinion/magazine-global-agenda-enough-is-enough.html?pagewanted=1&\\_r=1&sq=fukushima&st=cse&scp=5](http://www.nytimes.com/2011/12/02/opinion/magazine-global-agenda-enough-is-enough.html?pagewanted=1&_r=1&sq=fukushima&st=cse&scp=5)