

## Fermi3CEm Resource

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I am speaking today because we all have a responsibility to act on behalf of all beings on this planet. We all have a responsibility to stop this toxic radioactive legacy. We cannot continue on this path to a toxic inheritance for future generations.

The nuclear fuel chain is complex, impossible to monitor, usually effects poor and indigenous communities, produces substantial amounts of toxic and radioactive waste and has tragic consequences for human health and the environment. It is a cycle of destruction at every step.

Environmental concerns must start at the beginning of the cycle and not at the power plant. In terms of radiation doses and number of people affected, uranium mining is one of the very hazardous steps in the cycle. Mining is one of the most CO2 intensive industrial operations. Mining contaminates drinking water from aquifers, rivers, lakes and streams with arsenic, radium, thorium and other heavy metals. Tailings, which become hills of fine sand-like solids, retain 80-90 % of the radioactivity of the ore that is left in piles to blow in the wind. Thorium 230 in tailings decays into radium-226, which in turn decays into radon-222, which can cause lung cancer. The radioactive hazards of tailings will persist for over 100,000 years.

The conversion of yellowcake to Uranium Hexafluoride UF6 creates airborne and waterborne uranium and chemicals such as hydrofluoric acid, nitric acid and fluorine gas. Uranium is an alpha emitter and is extremely hazardous to ingest or inhale.

The enrichment process includes discharges of polychlorinated biphenyls [PCB'S], chlorine, ammonia, nitrates, zinc and arsenic. The two enrichment plants in Portsmouth, Ohio and Paducah, Kentucky released 818,000 pounds of Freon in 1999. There are over 700,000 tons of uranium hexafluoride in decaying metal canisters at Ohio, Kentucky and Tennessee sites.

Nuclear reactors routinely release millions of curies of radioactive isotopes into the air and water each year unreported and unmonitored. The Nuclear industry does not regulate these radioactive elements because they consider them biologically inconsequential. These radioactive releases include the noble gases Krypton, Xenon and Argon. They emit gamma radiation, which can mutate the genes in the eggs and sperm and cause genetic mutations. In addition to releasing radioactive and toxic poisons into Lake Erie, Fermi currently uses the lake to cool the power plant. Billions of fish and larvae are sucked into the station's cooling condensers and killed upon discharge with the heated water, hotter than the intake temperature. These discharges include major reductions of fish species and habitat.

The discharges into Lake Erie and the fallout from the stacks and the accidental discharges are extremely problematic. Many scientists believe that the Great Lakes are at a tipping point. Numerous sources of intensifying stress can overwhelm the natural processes that stabilize and buffer a system from permanent change. Ecosystems can recover from many kinds of disturbances but are not infinitely resilient.

The fission process at a nuclear power plant creates over 240 dangerous fission products. Some of these radioactive wastes have hazardous lives of tens of thousands of years. The NRC, in evaluating these hazardous radioactive compounds, stated they will "remain well above unrestricted release levels for a period of time far

exceeding the known lifetime of any manmade structure." They will be dangerous virtually forever. In June 2005, the National Research Council found that scientific evidence shows that exposure to radiation at even barely detectable doses can cause DNA damage that leads to cancer. There is no safe dose of exposure to radiation, no matter how small. In Monroe County, the cancer death rate has jumped from 2% above the U.S. in the early 1980's [when no reactors operated] to 10 % above the U.S. in this decade. Cancer mortality in children who are most susceptible to radiation soared from 39% below the U.S. to 58% above the U.S.

Dr. John Gofman, one of the world's foremost radiation researcher has spent over fifty years on the study of low-level radiation. A physician and doctor of nuclear/physical chemistry, Dr. Gofman co-discovered uranium -233 and isolated the world's first workable plutonium for the Manhattan Project. . He concludes: There is no safe dose or dose-rate of ionizing radiation with respect to the induction of human cancer. It would be impossible for low total doses of ionizing radiation, received slowly from routine occupational environmental sources, to be less carcinogenic than the same total doses received acutely. There is very strong support in the direct human evidence for recognizing that the cancer risk is probably more severe per dose unit at low doses than at moderate and high doses.

The nuclear industry does not have the technical ability to keep exposure to zero. They allow workers to be irradiated at so called allowable levels and the public to be poisoned at allowable levels. They continue to spread the myth that there is a safe dosage. Past estimates of safe levels have been continuously underestimated. In 1910, safe allowable exposure was thought to be 100 rems per year for workers; today it is 5 rems per year. The British National Radiological Board has lowered its permissible levels to 2 rems. A study published in 1991, in the Journal of the American Medical Association reveals the occurrence of leukemia is 63% higher among white male atomic workers at Oak Ridge National Laboratory than among all U.S. white males. Most of the workers in the study received total radiation doses of less than 1 rem total exposure throughout their entire employment.

Theoretical hypotheses that conclude that radioactive substances can be handled and stored safely, without incident, do not match up with reality. No substantial proof has ever been presented through past experiences or through extensive testing that it is even possible to build a safe, leak proof dump. Any construction worker will tell you control of the movement of water is impossible. We have no control over the movement of a substance through the surface and subsurface of the earth. We cannot predict a stable society for hundreds, less thousands of years, nor can we prevent earthquakes, tornadoes, wars, terrorism, human error or common traffic accidents involving transport of radioactive waste.

The nuclear industry has created an elaborate scheme to divert responsibility for this dangerous radioactive waste. If these wastes were so harmless and a safe technology existed to handle them, the generators would remain titleholders. The nuclear industry has billions of dollars and a slate of experts. Their conclusions are very clear: They do not want title to this waste. There is no safe technology.

Nuclear power only exists because of constant and consistent financial handouts by the taxpayer. Six of Wall Streets largest investment banks are financially smart enough to know nuclear power is not a good safe investment and too risky. They stated " We believe these risks, combined with the higher capital costs and longer construction schedules of nuclear plants as compared to other generation facilities, will make lenders unwilling at present to extend long-term credit. "

The track record of radioactive substances has been very consistent. Since the early 1900's, the effects of radiation have continuously been underestimated. At the very least, the over 50 years' failure to rectify the problem of radiologic contamination of the biosphere is negligence; at worst, it is murder. John Sommerville coined the term "radioactive omnicide"-it stands for murder, not just of people, but of plants, animals, water and soil. Death by a slow, silent, invisible, deadly invader is totally unacceptable.

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