Radiation Harm Deniers?

Pro-Nuclear Environmentalists and the Chernobyl Death Toll

By Dr. Jim Green

When it comes to the long-term death toll from the1986 reactor meltdown at Chernobyl, most self-styled pro-nuclear environmentalists conflate uncertainty with a mortality rate of zero. Denying the deadly impact of a nuclear disaster because the exact science is uncertain is a position just as indefensible as denying the existence of climate change for similar reasons.

Before considering the pro-nuclear environmentalists' misinformation, here is a brief summary of credible positions and scientific studies regarding the Chernobyl cancer death toll (for detail see the April 26, 2014 article in *The Ecologist*).

Epidemiological studies are of course important, but they're of limited use in estimating the overall Chernobyl death toll. The effects of Chernobyl, however large or small, are largely lost in the statistical noise of widespread cancer incidence and mortality.

The most up-to-date scientific review is the TORCH-2016 report written by radiation biologist Dr. Ian Fairlie. Dr. Fairlie sifts through a vast number of scientific papers and points to studies indicative of Chernobyl's impact:

- An increased incidence of radiogenic thyroid cancers in Austria;
- An increased incidence of leukemia among sub-populations in ex-Soviet states (and possibly other countries—more research needs to be done);
- Increases in solid cancers, leukemia and thyroid cancer among clean-up workers;
- Increased rates of cardiovascular disease and stroke that might be connected to Chernobyl (more research needs to be done);
- A large study revealing statistically significant increases in nervous system birth defects in highly contaminated areas in Russia, similar to the elevated rates observed in contaminated areas in Ukraine; and more.

So what else have we got?

Without for a moment dismissing the importance of the epidemiological record, let alone the importance of further research, suffice it here to note that there is no way that one could even begin to estimate the total Chernobyl death toll from the existing body of studies.

Estimates of collective radiation exposure are available. For example, the International Atomic Energy Agency (IAEA) estimates a total collective dose of 600,000 person-Sieverts over 50 years from Chernobyl fallout. And the collective radiation dose can be used to estimate the death toll using the Linear No Threshold (LNT) model.

If we use the IAEA's collective radiation dose estimate, and a risk estimate derived from LNT (0.1 cancer deaths per person-Sievert), we get an estimate of 60,000 cancer deaths. Any number of studies (including studies published in peer-reviewed scientific literature) use LNT to estimate the Chernobyl death toll. These studies produce estimates ranging from 9,000 cancer deaths (in the most contaminated parts of the former Soviet Union) to 93,000 cancer deaths (across Europe).

Those are the credible estimates of the cancer death toll from Chernobyl. None of them are conclusive—far from it—but that's the nature of the problem we're dealing with.

Moreover, LNT may underestimate risks. The 2006 report of the US National Academy of Sciences' Committee on the Biological Effects of Ionizing Radiation (BEIR VII) states: "The committee recognizes that its risk estimates become more uncertain when applied to very low doses. Departures from a linear model at low doses, however, could either increase or decrease the risk per unit dose."

So the true Chernobyl cancer death toll could be lower or higher than the LNT-derived estimate of 60,000 deaths—a point that needs emphasis and constant repetition since the nuclear industry and its supporters frequently conflate an uncertain long-term death toll with a long-term death toll of zero.

A second defensible position, taken by the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), is that the long-term Chernobyl cancer death toll is unknown and unknowable because of the uncertainties associated with the science.

Pro-nuclear environmentalists

A third position—unqualified claims that the Chernobyl death toll was just 50 or so, comprising some emergency responders and a small percentage of those who later suffered from thyroid cancer—should be rejected as uninformed or dishonest spin from the nuclear industry and some of its scientifically-illiterate supporters.

Those illiterate supporters include every last one of the self-styled pro-nuclear environmentalists. We should note in passing that some pro-nuclear environmentalists have genuine environmental credentials while others—such as Patrick Moore and Australian Ben Heard—are in the pay of the nuclear industry.

James Hansen and George Monbiot cite UNSCEAR to justify a Chernobyl death toll of 43, without noting that the UNSCEAR report did not attempt to calculate long-term deaths. James Lovelock asserts that "in fact, only 42 people died" from the Chernobyl disaster.

Patrick Moore, citing the UN Chernobyl Forum (which included UN agencies such as the IAEA, UNSCEAR, and WHO), states that Chernobyl resulted in 56 deaths. In fact, the Chernobyl Forum's 2005 report estimated up to 4,000 long-term cancer deaths among the higher-exposed Chernobyl populations, and a follow-up study by the World Health Organization in 2006 estimated an additional 5,000 deaths among people exposed to lower doses in Belarus, the Russian Federation and Ukraine.

Australian "ecomodernist" academic Barry Brook says the Chernobyl death toll is less than 60. Ben Heard, another Australian "ecomodernist" (in fact a uranium and nuclear industry consultant), claims that the death toll was 43.

There doesn't appear to be a single example of a pro-nuclear environmentalist—or a comparable organization—providing a credible account of the Chernobyl death toll. They're perfectly entitled to follow UNSCEAR's lead and argue that the long-term death toll is uncertain. But conflating or confusing that uncertainty with a long-term death toll of zero clearly isn't a defensible approach.

Shaky understanding

Evidence of pro-nuclear environmentalist ignorance abounds. For the most part, pro-nuclear environmentalists had a shaky understanding of the radiation/health debates (and other nuclear issues) before they joined the pro-nuclear club, and they have a shaky understanding now.

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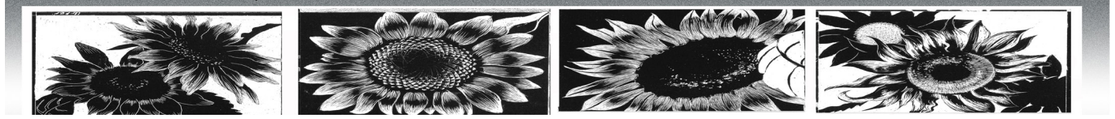

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Who's Behind Pro-Nuclear Legislation?

Industry Group Funds Repeal of Wisconsin's Restrictions on New Reactor Construction

By Arianne Peterson

Despite the increasingly dire economic and environmental outlook for nuclear power, the Republican-controlled Wisconsin legislature decided this spring that energy companies should be able to build new reactors in the state without waiting for a place to put all the high-level radioactive waste they produce, or a guarantee that the cost would be advantageous to electric ratepayers.

Assembly Bill 384, signed into law by Governor Walker on April 6, repealed the state's 1983 statute prohibitingd new eactor construction until an operational federal storage facility opened to deal with the waste fuel that has been piling up in temporary storage outside of reactors for decades. No viable high-level waste site has yet been identified. During the 33 years the statutory pre-conditions were in place, two of the state's four power reactors shut down—one of them, at Kewaunee, closed for purely economic reasons in 2013. The other, the La Crosse Boiling Water Reactor near Genoa, also a financial failure, closed in 1987.

Since 1983, reactor meltdowns at Chernobyl and Fukushima have spread radioactive contamination and grave concern across the globe. The volume of high-level radioactive waste fuel stored indefinitely on the shores of Lake Michigan continues to grow at Wisconsin's operating Point Beach reactors. Despite massive, ongoing government subsidies, nuclear power has become less and less economically viable; old reactors are closing, and new reactor projects are running years behind schedule and billions of dollars over budget—or being scrapped altogether.

So why—with reactors closing left and right, public concern about accidents and waste contamination increasing, and no newly constructed nuclear power reactors entering commercial operation since 1996—would Wisconsin lawmakers repeal this precautionary legislation?

Essentially, the answer boils down to this: because the Nuclear Energy Institute (NEI) demanded it. NEI—the "propaganda wing and trade group for the American nuclear industry, [which] spends millions of dollars annually to engineer public opinion," as Dr. Helen Caldicott wrote in her 2006 book *Nuclear Power is Not the Answer*—unabashedly takes credit for a state-level "victory" that its leaders view as a model for future lobbying efforts.

"The passage of the bill is a testament to the power of coalitions and grassroots advocacy and will serve as a model for how

Graphic by Gene Case, Beyond Nuclear

pro-nuclear advocates drive policy outcomes in the future," NEI's manager of state and federal advocacy, Jon Breed, wrote in an April 13 blog post. He went on to explain that rather than focusing on "shoe-leather lobbying," to change policy in today's political climate, the industry needed to "formulate a deliberate and comprehensive plan that would best leverage the power of grassroots advocacy." This meant dedicating its substantial resources to making it worthwhile for other special interest groups—"unions, business coalitions, student groups, academics, small businesses, environmentalists, and electric industry experts"—to advocate on its behalf, rather than just lobbying the politicians itself.

To spearhead these efforts, NEI purchased its own local, pro-nuclear "environmentalist"—Frank Jablonski, a Madison lawyer and former general counsel for Wisconsin's Environmental Decade. (Now called Clean Wisconsin, the group advocates renewable energy and efficiency measures.) Jablonski played the role of reformed, pro-nuclear environmentalist when he testified in legislative hearings. Perhaps his change of heart was influenced by the promise of six-figure compensation. Jablonski and his law firm, Progressive Law Group, received more than $110,000 for lobbying work from NEI from 2009 through 2015. NEI's total lobbying expenditures in the state during that same period, as reported to the Wisconsin Government Accountability Board, amounted to $174,269—this does not include the amounts paid to Jablonski or other expenditures

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