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Chernobyl: A Million Casualties

Karl Grossman interviews Dr. Janette Sherman

[EnviroVideo](#)
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Complete transcript of Dr. Janette Sherman's 03-05-11 interview on [EnviroVideo](#), conducted by Karl Grossman.



A million people have died so far as a result of the 1986 Chernobyl nuclear plant accident, explains [Dr. Janette Sherman](#), toxicologist and contributing editor of the book [Chernobyl: Consequences of the Catastrophe for People and the Environment](#). Published by the New York Academy of Sciences, the book, authored by Dr. Alexey Yablokov, Dr. Vassily Nesterenko and Dr. Alexey Nesterenko, examined medical records now available — which expose as a lie the claim of the International Atomic Energy Commission that perhaps 4,000 people may die as a result of Chernobyl. [Watch this program now online](#) (29 min.) #610 [Ordering Info](#)

Karl Grossman: Welcome to [Enviro Close-Up](#). I am Karl Grossman. This coming April 26 marks the twenty-fifth anniversary of the Chernobyl nuclear plant disaster. Meanwhile the nuclear industry world-wide is pushing for a revival of nuclear power. And this very important book has been published: [Chernobyl: Consequences of the Catastrophe for People and the Environment](#). It concludes based on now-available medical data that between 1986, the year of the accident, and 2004, 985,000 people died as a result of the disaster, and more have been dying since.



With us is [Dr. Janette Sherman](#). She is the Contributing Editor of this book which was authored by a noted Russian biologist, Dr. Alexey Yablokov, Vassily Nesterenko and Alexey Nesterenko. They are both from Belarus. Welcome Janet.

How did these people die? We are talking a million people dead from this nuclear plant accident. How?

Janette Sherman: They died of multiple different kinds of diseases from cancer, to heart disease, brain damage, thyroid cancer. But many, many children died in utero, in other words before they were born or died of birth defects after they were born.

Karl Grossman: How did these scientists determine 985,000 deaths as a result of Chernobyl?

Janette Sherman: Based on medical data that were available to the scientists.

Karl Grossman: Now what we've heard, frankly, since the accident, from the International Atomic Energy Agency ([IAEA](#))—the global group which is supposed to regulate and promote nuclear power—currently on its website the IAEA says, the casualties of Chernobyl, maybe in all, 4,000 people are dead. That's quite different from 985,000. Why this discrepancy?

Janette Sherman: They released a report called [The Chernobyl Forum](#) and they only included about 350 articles available in the English language. But Doctors Yablokov and the two Nesterenkos looked at well over 5,000 articles that people who were actually—we hate to use the term but—boots on the ground. People who were there and saw what was going on. We're talking about medical doctors, scientists, veterinarians, epidemiologists who saw what was happening when people in their communities were getting sick and dying.

Karl Grossman: There's another international agency, the World Health Organisation, [WHO](#), and indeed the book charges that the truth has not come out on Chernobyl from the WHO—forget about the IAEA—because of an agreement between these two agencies. Can you elaborate on that agreement?

Janette Sherman: They formed an agreement in 1959 that has not been changed where one will not release a report without the agreement of the other. [1] Now this is like having Dracula guard the blood bank. Because the WHO, who is charged with world health organisation, is beholden to the IAEA before they can release a report.

Karl Grossman: And, as I mentioned before, the IAEA is there to regulate nuclear technology around the world but it was also set up to—

Janette Sherman: —promote it

Karl Grossman: —promote it. And it evidently does not want anything from WHO which would indicate that nuclear power is not good for one's health.

Janette Sherman: That's right. And this needs to be ended. This agreement needs to be stopped.

Karl Grossman: Let me go right to you. You've devoted your life to the impacts of poisons. That's been your specialty. You're a toxicologist. Here you're editing this book, you're going through all this scientific data; this has to be a million dead, the Chernobyl accident [was] the biggest technological disaster in history of the world,

Janette Sherman: It's true.

Karl Grossman: How did you feel as you looked at the data and you put this book together?

Janette Sherman: I realized it was far worse than I thought it was. Not only were people dying of cancer and heart disease. But every single organ in the body, whether it was immunological, or lungs, or cataracts, or skin—*everything* was adversely affected.

But not only people. *Every single system* that was studied—and not all were—but every system that was studied, whether it was humans, or fish, or trees, or birds, bacteria, viruses, wolves, cows—every system was changed, every single system without exception.

Karl Grossman: And this is reflected in this—

Janette Sherman: —the book. It's not just human effects. Many of the birds and animals had similar adverse effects as humans.

Karl Grossman: Most people aren't familiar with—we all know at this point that radioactivity and cancer go together. But heart problems, heart disease—how does that connect?

Janette Sherman: One of the most fascinating things that I learned when I was re-writing the text of the book and going through all the data, was [that] one of the scientists, Bandazhevsky, had done a study that showed that the Cesium-137 levels in children were the same as he had found in test animals. [\[2\]](#) And were causing heart damage. He reported this. And for his work, he was put in prison.

Karl Grossman: And he was put in prison?

Janette Sherman: He was put in prison, yes.

Karl Grossman: And he analyzed, these were animals that were—

Janette Sherman: He did the original study on animals. He was a pathologist and then he was studying the results in children. And he found the same changes in the hearts of children, who had died, as he had seen in the animals. When he reported it, his thanks was he got arrested and put in prison.

Karl Grossman: The radioactivity from Chernobyl—Russia, Belarus, Ukraine—these were three places where a lot of the radiation was deposited. But according to this book, again based on data, those poisons came down all over the world.

Janette Sherman: Yes they did. The greatest *concentrations* came down in Belarus, Ukraine, and Russia. But

the greatest *amount*—more than fifty percent—spread around the entire northern hemisphere. [It] particularly went north into Scandinavia and eastward into Asia.

Karl Grossman: As far as China.

Janette Sherman: Oh yes.

Karl Grossman: The book concludes indeed that the deaths, as a result of Chernobyl, occurred not just in Belarus, Russia, and the Ukraine, but all over.

Janette Sherman: Around the entire, the world. Yes, of course.

Karl Grossman: How long will this continue? Some of the poisons that were discharged, they are going to be around for millenia.

Janette Sherman: Oh yes. Just the two main ones—Cesium-137 and Strontium-90—have half lives of about 30 years. So they will be around for three centuries, at least. But *many of the isotopes* will be around for millenia, you are right.

Karl Grossman: The book, however, stresses that the worst damage occurred in those early months. Particularly those early weeks when the fire—the huge fire that they were not able to put out—was blazing.

Janette Sherman: Yes. But still, right now, the reactor is leaking into the water supply. The structure that is around the reactor right now is not sound. If there is so much as a mild earthquake there is a chance of it collapsing. This reactor is *by no means* covered up or safe and not leaking.

Karl Grossman: This book, telling the truth about Chernobyl, was [published by the New York Academy of Sciences](#). A rather prestigious organisation. What about the rest of the scientific establishment? What has been their stance, their position in getting this information out on Chernobyl?

Janette Sherman: Some groups have been very interested in getting out the information. People allied with the nuclear industry would just as soon that nobody knew anything about what's in that book.

Karl Grossman: How did Dr. Yablokov and the Doctors Nesterenko embark on this journey with you of looking into the impacts of Chernobyl?

Janette Sherman: They have been aware of the WHO-IAEA agreement and actually there have been people 24-7 outside of the WHO headquarters in Geneva trying to get this stopped, this agreement stopped. [3]

Karl Grossman: These people have been demonstrating.

Janette Sherman: Demonstrating, yes.

Karl Grossman: Picketing because of this,

Janette Sherman: —agreement

Karl Grossman: —what the book describes as a collusive agreement between the IAEA and WHO. [4]

Janette Sherman: That's correct. Alexey Yablokov was a consultant to both Gorbachev and Yeltsin on the Chernobyl issues. And as you know the data were covered up for about three years right after Chernobyl happened because the governments did not want anything to be known by people. And they collected almost nothing in the way of data.

Alexey became interested in that and started collecting information. I think there is something like *150,000* publications that have come out and they utilized well over 5,000 in writing this book. Many of the sources in here have never been translated in english. Mostly [they] were in the languages of Ukraine, Russia, and Belarus. So this is entirely new information that has not been available to the western world.

Karl Grossman: You talk about the impacts on people, on animals, on plant life. Are the mechanisms different?

Janette Sherman: No, essentially the mechanisms are the same. Exposure to these radioactive isotopes are taken up by plants or taken up by birds, taken up by humans, and damage the cells, kill some of the cells, damage the DNA, damage the genetic mechanisms of species. If it kills a cell, then it is not going to go on to cause cancer. If it *damages* a cell, it can go on to cause cancer, or a birth defect in a human, a bird, or even, quote, birth defects in plants. Plants have been altered by Chernobyl.

Karl Grossman: You just mentioned how the consequences were a lot toward the northwest because the winds were blowing towards of all places, Scandinavia. The Laps, people who had nothing to do whatsoever with Chernobyl or nuclear power, they got hit. There was rain and there was fallout and so forth. Speak about those consequences.

Janette Sherman: A recent study has come out showing that children born in Scandinavia, at the time when the Chernobyl fallout occurred, are less likely to graduate from high school. [5] They have intellectual impairment.

Probably the most serious consequence of Chernobyl that I'm aware of is that only *20 percent* of children in Belarus are considered healthy. That means that *80 percent* of the children in Belarus are not well compared to the data that they have of children before the Chernobyl accident. And they are medically not well. And they are intellectually below par.

Karl Grossman: What would be the relationship there between radioactivity and a deterioration of intellectual capability?

Janette Sherman: While a mother is pregnant she is eating food. What happened was that most of the people either did not know or they did not have access to food that was not contaminated. These isotopes are taken into the body while a woman is pregnant. They are transported through her body to the unborn and damage the heart, the lungs, the thyroids, the brains—*all of the tissues*, the immunological system of these unborn. These children are born unwell, low birth weight. There was a very high fetal death rate as a result of these exposures. This is probably

the greatest tragedy that could occur to a culture.

Karl Grossman: After the accident, from the Ukraine—which had been the breadbasket of the former Soviet Union (and it is where Chernobyl was and is; in fact there are three units of the Chernobyl nuclear facility still in operation)—in any case, that food moved around.

Janette Sherman: This is an extremely serious problem. How do you get enough food for people if the land is contaminated for three centuries? Not only are you worried about grains like wheat and rye, but you have to also worry about mushrooms. That doesn't sound very important but mushrooms are a *very big* part of the food supply in that area. And these are *extremely* contaminated.

Karl Grossman: The book concludes based on now-available medical data, 985,000 people dead. The data however just covers 1986 to 2004. As we opened the program, mentioning one million casualties, would that be essentially the number that became victims of Chernobyl?

Janette Sherman: I believe that is correct. Yes. That we will see that many. We know for instance, that of the people called the Liquidators, these were the young men and women who were recruited largely from military, from countries all around the area, to go in and try and put out the fires and contain the Chernobyl mess. Fifteen percent of them have died, These were *young* men and women, we're talking 18 to maybe 30.

Karl Grossman: Dr. Sherman in terms of the amount of radioactivity emitted from the plant, there too there is a *big discrepancy* between what's revealed in this book and what's been acknowledged up to now.

Janette Sherman: Absolutely. If a *small* amount was emitted, then we have to conclude that low levels of radiation are extremely damaging. If *large* levels were emitted, then we have to understand how much damage has been done. But we *really don't know yet* because nobody has been able to go in and find out what is actually left in the reactor that is leaking into the ground water.

Karl Grossman: What does this say about the safety of nuclear power? [With] the nuclear industry, the nuclear establishment—because a lot of the nuclear industry involves government entities—a push is on to revive nuclear power, to create a nuclear renaissance, to build many, many more nuclear power plants. What's the lesson of Chernobyl and that?

Janette Sherman: I think the lesson of Chernobyl is that we should be very cautious before we push technology. We were told that there was no problem with the British Petroleum drilling in the Gulf of Mexico. There is one issue of technology where engineers do certain things. But they do not understand the *biology*; they do not understand what is happening to life around these installations. I think Chernobyl is the biggest lesson of what has happened to *all species* that were contaminated. No exceptions.

Karl Grossman: The book indeed talks about owls and could you elaborate on some of the effects on animals?

Janette Sherman: One of the scientists whose photograph is on the cover of the book is [Tim Mousseau](#) from the

University of South Carolina. [6] He's led over 25 groups of scientists to the Chernobyl area. They have studied insects and birds and animals and owls and *all kinds* of different animals as to what is going on.

He said [during] one of the trips he made, that he suddenly realized there were no bees. There was no fruit falling on the ground. And he realized there was no fruit falling on the ground because there were no bees that had pollinated the trees. So he is predicting, and this may indeed happen, that there could indeed be a complete loss of species around Chernobyl as a result of these isotopes that are *still* decaying that could wipe out entire species.

After all it is a major *bird transport* area, a migration area. And we don't know what's happening when the birds come through, eat whatever they can find on the ground, and then fly on, dropping the berries further on, after they have left the Chernobyl area. [7]

Karl Grossman: The genetic impacts: radioactivity has an enormous affect on genes. Speak on that.

Janette Sherman: These are unlikely to be improved. Once you get a genetic defect it becomes transmitted generation after generation after generation. So these defects that are occurring in humans and birds and plants are unlikely to improve the species as they occur.

Karl Grossman: What kind of genetic defects are you speaking of?

Janette Sherman: In humans we're talking about brain defects, heart defects, limb defects, children without arms, hydrocephalic babies. In birds we're looking at changes in the feathers and in the beaks and in their *brain size*. You talk about bird brains? These birds are not as smart and they are not going to be able to function as well as the birds that are not changed. [8] We know that the plants have been changed, irreversibly.

This is not rocket science. We *know* where these isotopes go. We know that iodine goes to the thyroid. We know that strontium-90 goes to bones and teeth, particularly of the unborn. We know that cesium-137 goes to the heart and to the muscles. This is not a mystery. And if we know this, we can predict what the adverse effects are going to be. And indeed they turned out to be just that. And it's shown, proven in this book.

Karl Grossman: This has to constitute one of the, well, the claim that just a few thousand people died as a result of the Chernobyl disaster. One of the biggest lies in history, no?

Janette Sherman: Absolutely. And they have been able to get away with it. We need to put pressure on the WHO and the United Nations to separate the WHO from the IAEA.

Karl Grossman: Not just on the international level with the International Atomic Energy Agency and the World Health Organisation. Here in the United States the Nuclear Regulatory Commission has too, tried to minimize the impacts of radioactivity.

Janette Sherman: You are absolutely correct. I can go back to the Atomic Energy Commission before the Nuclear Regulatory Commission. I worked for the AEC at the University of California in 1952. That was my first job out of college. And if I could figure out with my *limited* experience at that time, and my limited education at that time, that radiation was harmful

then other people could figure it out.

We have had secrecy and lies to the American public for decades about the effects of nuclear radiation. There have been cover-ups, there have been falsification of data, there have been people who said, Well don't worry about a little strontium-90, don't worry about the Tritium coming out of the plant. [9] We know that Davis-Besse *almost* melted within an inch of its containment as a result of poor maintenance. [10] And I believe it is just a matter of time before we have another nuclear problem somewhere in the world if not in the United States.

Karl Grossman: Why? Here you were within the nuclear establishment way back—we're talking about a half-century ago - plus—

Janette Sherman: Yes

Karl Grossman: [Does it] have to do with money? Does it have to do with promoting a technology that these people are connected with, the nuclear scientists? Why the lying? Why the deception?

Janette Sherman: I think it has to do with many things. I think it's the money. And the control is on corporations who are promoting nuclear technology. But we also have *enormous* scientific ignorance in this country. People who *really* don't understand biology. I think if I lined up 20 people in a mall someplace and said, "Put your hand over your liver," I'll bet you half of them couldn't do it. And to explain to people what's happening with nuclear radiation, I think our educational system is so poor these days that children are not learning about biology and physics and chemistry. And it is essential because it is such a major part of our culture and our economy.

Karl Grossman: As you plow through all this data, the consequences of Chernobyl, did the experience back decades ago connect in any way to what you were doing?

Janette Sherman: Oh absolutely. This has been known for decades. The adverse effects of radioactivity have been known for decades. This is not something that has just occurred in the last couple of years. Scientists who have any knowledge whatsoever of physics can figure out where an isotope is going to go in a body, or in a plant, or in a bird. This is not mysterious kinds of science.

Karl Grossman: What does Chernobyl represent? We're talking a million dead. What does it represent in terms of technological history or the current technological scene? What does it mean?

Janette Sherman: I think it represents very strongly that we cannot depend on technology. Nor can we depend on *humans* who operate and design this technology. Because the ultimate failure is human failure as happened at Chernobyl.

Karl Grossman: But you're talking here about health consequences on the most massive of scales.

Janette Sherman: Yes indeed. Around the entire Northern Hemisphere.

Karl Grossman: Wherever the fallout was, people ended up dead.

Janette Sherman: They wound up dead. And they wound up with children who were grossly impaired intellectually and medically. And this is going on—it hasn't stopped yet. It's still going on.

Karl Grossman: Dr. Sherman how can people get a copy of this book?

Janette Sherman: They can contact me by e-mail. I am toxdoc.js@verizon.net. I hope to have information on how they can get copies of this book.

Karl Grossman: Yes, I think it is very important at this time that people learn the truth about what happened as a result of the Chernobyl disaster. Thank you so much for doing this work, Dr. Sherman.

This has been [Enviro Close-Up](#). I am Karl Grossman. Thank you for watching. To get a copy of this or any [EnviroVideo](#) program visit our website at www.environvideo.com.

Addendum—Karl Grossman Commentary Recorded After March 5 Interview and After the Beginning of the Fukushima Disaster

This program was taped on March 5, 2011, six days before the [nuclear disaster in Japan](#) began unfolding. The clear lesson of Chernobyl and now the Japanese disaster: *all* nuclear plants should be shut down. They present a clear and present danger to life on earth. No more nuclear plants should be built. Taxpayer subsidies for nuclear power must be stopped and we must embark immediately on an energy program of efficiency and full implementation of solar, wind, geothermal, and other safe, clean energy technologies which are here today and render deadly nuclear power completely unnecessary. [11]

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Transcription approved by Karl Grossman

Footnotes

1. From the IAEA's website is the document: [INFCIRC/20 - The Texts of the Agency's Relationship Agreements with Specialized Agencies](#), and included in the third section, [III World Health Organisation](#); "As indicated in the [Protocol](#) that follows, this Agreement came into force on 28 May 1959."
2. See [Chernobyl: Consequences of the Catastrophe for People and the Environment](#):
 - o p. xiv, Yury Bandazhevsky (Lithuania),
 - o Cited on p. 36; References on p. 39:
Bandazhevsky, Yu. I. (2000). *Medical and Biological Effects of Incorporated Radio-caesium (BELRAD)*, Minsk): 70 pp. (in Russian).
and
Bandazhevsky, Yu. I., Lelevich, V. V., Strelko, V. V., Shylo, V. V., Zhabinsky, V. N., *et al.* (1995). *Clinical and Experimental Aspects of the Effect of Incorporated Radionuclides Upon the Organism* (Gomel Medical Institute, Gomel): 128 pp. (in Russian).
See Also: "[Measures of Radiation protection of the Population of Belarus after the Chernobyl Catastrophe](#)," V.B. Nesterenko's report at the International conference "Medical Consequences of the Chernobyl Catastrophe: results of 15-year researches," June 4-8, 2001,

- Kiev, Ukraine, available at [BELRAD](#), publications, articles, measures_of_radiation. (Run "Find" in web-browser searching for "Bandazhevsky".)
- Cited on pp. 62, 88, 89, 97, 113; References on p. 136:
Bandazhevsky, Yu. I. (1997). *Pathology and Physiology of the Incorporated Ionizing Radiation* (Gomel Medical Institute, Gomel): 104 pp. (in Russian).
 - Bandazhevsky, Yu. I. (1999). *Pathology of Incorporated Ionizing Radiation* (Belarus Technical University, Minsk): 136 pp. (in Russian).
 - Bandazhevsky, Yu. I., Kapytonova, Ae. K. & Troyan, Ae. I. (1995). Appearance of allergy to cow milk and cortisol level in blood of children from radionuclide contaminated areas. In: Third Congress on Belarus Scientific Society of Immunology and Allergology. *Actual Problems of Immunology and Allergy* (Abstracts, Grodno): pp. 111-112 (in Russian).
 - Cited on p. 206; Reference on p. 211:
Bandazhevsky, Yu. I. (1999). *Pathology of Incorporated Ionizing Radiation* (Gomel Medical Institute, Minsk): 136 pp. (in Russian).
 - Cited on pp. 217-218; Reference on p. 219:
Bandazhevsky, Yu. I. (1999). *Pathology of Incorporated Ionizing Radiation* (Gomel Medical Institute, Minsk): 136 pp. (in Russian).
 - Cited on p. 299; Reference on p. 301:
Bandazhevsky, Yu. I. (2003). Cs-137 incorporation in children's organs. *Swiss Med. Week.* **133**: 488-490.
 - Reference on p. 309:
Bandazhevskaya, G. S., Nesterenko, V. B., Babenko, V. I., Babenko, I. V., Yerkovich, T. V. & Bandazhevsky, Yu. I. (2004). Relationship between Cesium (Cs-137) load, cardiovascular symptoms, and source of food in "Chernobyl" children: Preliminary observations after intake of oral apple pectin. *Swiss Med. Wkly.* **134**: 725-729.
3. See [Independent WHO](#) (www.independentwho.info), including [The Hippocratic Vigils](#): "The vigil is held in front of the World Health Organisation (WHO) building. It has been maintained since the 26th April 2007, each working day between 8am and 6pm, to remind this United Nations body of its duties as they are defined in its Constitution.
 4. "[Toxic link: the WHO and the IAEA](#), A 50-year-old agreement with the IAEA has effectively gagged the WHO from telling the truth about the health risks of radiation," by Oliver Tickell, [guardian.co.uk](#), 28 May 2009.
 5. Heiervang, K. S., Mednick, S., Sundet, K, Rund, B. R. (2010). "Effect of low dose ionizing radiation exposure in utero on cognitive function in adolescence." *Scand. J. of Psychology*, 51(3): 210-5.
 6. See [web page at http://cricket.biol.sc.edu/mousseau/mousseau.html](http://cricket.biol.sc.edu/mousseau/mousseau.html) [accessed: 03-28-11] for Timothy A. Mousseau, Associate Vice President for Research and Graduate Education, Dean of the Graduate School (Interim), Professor of Biological Sciences, University of South Carolina, Columbia.
See Also: University of South Carolina, [Chernobyl Research Initiative](#)
 7. For Citations and References of Timothy A. Mousseau in [Chernobyl: Consequences of the Catastrophe for People and the Environment](#) see: Cited on p. 264; Reference on p. 286:
 - Møller, A. P. & Mousseau, T. A. (2007). [Species richness and abundance of forest birds in relation to radiation at Chernobyl](#). *Biol. Lett. Roy. Soc.* **3**: 483-486.
 and Cited on pp. 267, 268; References on p. 277:
 - Møller, A. P. & Mousseau, T. A. (2001). [Albinism and phenotype of barn swallows *Hirundo rustica* from Chernobyl](#). *Evolution* **55**(10): 2097-2104.
 - Møller, A. P. & Mousseau, T. A. (2006). Biological consequences of Chernobyl: Twenty years on. *Trend Ecol. Evol.* **2**(4): 200-207 ([//www.cricket.biol.sc.edu/chernobyl/papers/Møller-Mousseau-TREE-2006-PR1.pdf](http://www.cricket.biol.sc.edu/chernobyl/papers/Møller-Mousseau-TREE-2006-PR1.pdf)).
 - Møller, A. P. & Mousseau, T. A. (2007a). [Species richness and abundance of forest birds in relation to radiation at Chernobyl](#). *Biol. Lett. Roy. Soc.* **3**: 483-486 ([//www.cricket.biol.sc.edu/Chernobyl.htm](http://www.cricket.biol.sc.edu/Chernobyl.htm)).

- Møller, A. P. & Mousseau, T. A. (2007b). [Birds prefer to breed in sites with low radioactivity in Chernobyl](#). *Proc. Roy. Soc.* **274**: 1443-1448.
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- Møller, A. P., Karadas, F. & Mousseau, T. A. (2008a). [Antioxidants in eggs of great tits *Parus major* from Chernobyl and hatching success](#). *J. Comp. Physiol. B.* **178**: 735-743.
- Møller, A. P., Mousseau, T. A., Lynn, C., Oster miller, S. & Rudolfson, G. (2008b). [Impaired swimming behaviour and morphology of sperm from barn swallows *Hirundo rustica* in Chernobyl](#). *Mutat. Res.* **650**: 210-216.
- Møller, A. P., Mousseau, T. A., Milinevsky, G., Peklo, A., Pysanets, E. & Szép, T. (2005). [Condition, reproduction and survival of barn swallows from Chernobyl](#). *J. Anim. Ecol.* **74**: 1102-1111.

Majority of above article sources is from [CRI Publications Related to Chernobyl](#), at the University of South Carolina's [Chernobyl Research Initiative](#).

8. Møller AP, Bonisoli-Alquati A, Rudolfson G, Mousseau TA. (2011) [Chernobyl Birds Have Smaller Brains](#). *PLoS ONE* **6(2)**: e16862. doi:10.1371/journal.pone.0016862.

9. For example see:

- [World Uranium Hearings](#), Salzburg, 1992
 - [Vladimir Chernousenko](#), CIS. Physicist, scientific co-ordinator of the clean-up in Chernobyl
 - [The True Price of Nuclear Power](#)—The Economic, Environmental and Social Impacts of the Nuclear Fuel Cycle, Lecture by Peter Bossew
 - [Gernadij Grushevoi](#), White Russia, CIS. Co-founder of the Foundation for the Children of Chernobyl.
- [Dr. John W. Gofman](#), M.D., Ph.D.
 - ["Bio-Medical "Un-Knowledge" & Nuclear Pollution: A Common-Sense Proposal"](#), speech given on the occasion of the [Right Livelihood Award](#), Stockholm, December 9, 1992
 - [What Is Factually Wrong with This Belief: "Harm from Low-Dose Radiation Is Just Hypothetical—Not Proven"](#), by John W. Gofman, M.D., Ph.D., Fall 1995
 - on the health effects of radiation: ["There is no safe threshold"](#), and ["Challenging The Nuclear Establishment"](#), 2-part interview in UCSF's *synapse*, January 1994
 - [The Bonds of Trust vs. Deceit by DOE: Some Enduring Measures for Your Health and Safety](#), by John W. Gofman and Egan O'Connor, Spring 1994
 - [The Top 10 Pronuclear Arguments... Answered](#), *The Mother Earth News*, 1981
- [Dr. Rosalie Bertell](#), Ph.D., GNSH
 - [Nuclear Radiation and its Biological Effects, PART I](#), from *No Immediate Danger, Prognosis for a Radioactive Earth*, 1985
 - [Quietly Eating Radioactivity](#), speech given in August of 1986 to an international community radio group, in Vancouver, Canada
 - ["16 Million Radiation Deaths and Counting](#)—Why should we continue to destroy ourselves by this kind of mentality and this kind of process?," speech at an event in Los Angeles put on by Women's Action for Nuclear Disarmament (WAND) and Women's Strike for Peace (WSP) March 11, 1989
- *Nuclear Witnesses, Insiders Speak Out*, by Leslie J. Freeman, 1981
 - [Rosalie Bertell, Mathematician and Medical Researcher](#)
 - [Ernest J. Sternglass, Physicist](#)
 - [Dr. John Gofman, Medical Physicist](#)
- [Cover Up: What You are Not Supposed to Know About Nuclear Power](#), by Karl Grossman, 1982, with a new March 2011 Preface
- [Chernobyl, Insight from the Inside](#), by Vladimir M. Chernousenko, Scientific Director of the Ukrainian Academy of Sciences Institute of Physics in Kiev's Task Force for the Rectification of the Consequences of the Chernobyl Accident, 1991
- [KILLING OUR OWN](#) *Chronicling the Disaster of America's Experience with Atomic Radiation, 1945-1982*, by Harvey Wasserman & Norman Solomon with Robert Alvarez & Eleanor Walters
- [SECRET FALLOUT](#), *Low-Level Radiation from Hiroshima to Three Mile Island*, by Dr.

Ernest J. Sternglass, 1972

- [*Poisoned Power, The Case Against Nuclear Power Plants Before and After Three Mile Island*](#), by John W. Gofman, Ph.D., M.D. and Arthur R. Tamplin, Ph.D., 1979

10. See description of the [Reactor head hole](#) and the description that, "In March 2002, plant staff discovered that the boric acid that serves as the reactor coolant had leaked from cracked control rod drive mechanisms directly above the reactor and eaten through more than six inches of the carbon steel reactor pressure vessel head over an area roughly the size of a football (see photo). This significant reactor head wastage left only 3/8 inch of stainless steel cladding holding back the high-pressure (~2500 psi) reactor coolant. A breach would have resulted in a loss-of-coolant accident, in which superheated, superpressurized reactor coolant could have jetted into the reactor's containment building and resulted in emergency safety procedures to protect from core damage or meltdown. . . . Under certain scenarios, a reactor rupture would have resulted in core meltdown and/or breach of containment and release of radioactive material. . . . The NRC determined that this incident was the fifth most dangerous nuclear incident in the United States since 1979." (from http://en.wikipedia.org/wiki/Davis-Besse_Nuclear_Power_Station)

11. See, for example:

- *Carbon-Free and Nuclear-Free, A Roadmap for U.S. Energy Policy* (2007) by Arjun Makhijani. Arjun Makhijani, Ph.D is President of [The Institute for Energy and Environmental Research](#). *Carbon-Free and Nuclear-Free* demonstrates that the U.S. and the rest of the world could successfully meet all of their energy needs with renewable energy by 2050. This groundbreaking research should be the boilerplate for all plans to fight global warming. Dr. Makhijani wrote the first study on U.S. energy conservation potential (1971), edited the book *Nuclear Wastelands* and is the principal author of *Mending the Ozone Hole* (MIT Press). The Roadmap can be ordered in book form or downloaded free at www.ieer.org/carbonfree/.
- [Renewables Are Ready -A Guide to Teaching Renewable Energy in Junior and Senior High School Classrooms](#). This newly revised and updated teacher's guide provides an ideal background for teaching a unit on renewable energy. It can be used to illustrate basic scientific principles and includes hands-on activities, games, action projects, and a resource guide. Union of Concerned Scientists, 2003. 89 pp. \$10.00 (or \$5.00 each for orders of 10 or more). Complete publication [is available in PDF for download](#).
- [World on the Edge: How to Prevent Environmental and Economic Collapse](#), by Lester R. Brown, Earth Policy Institute, W. W. Norton and Company, 2011. Brown concludes that solar, wind and geothermal energy can provide all the energy the world needs and sets forth his Plan B that would implement this. Brown, formerly president of Worldwatch, dismisses nuclear power as too expensive and dangerous.

<http://www.ratical.org/radiation/Chernobyl/C1Mcasualties.html>